

## **THE MISSION**

The mission of Lycoming College is to provide a distinguished baccalaureate education in the liberal arts and sciences within a coeducational, supportive, residential setting.

## **GUIDING PRINCIPLES**

Lycoming College is committed to the principle that a liberal arts education provides an excellent foundation for an informed and productive life. Consequently, the Baccalaureate degree (Bachelor of Arts or Bachelor of Science) is conferred upon the student who has completed an educational program incorporating the two principles of a liberal arts education known as distribution and concentration. The objective of the distribution principle is to ensure that the student achieves intellectual breadth through the study of the arts, humanities, mathematics, natural and social sciences, and modern or ancient languages and their literatures. The objective of the concentration principle is to provide depth of learning through completion of a program of study in a given discipline or subject area known as the major. The effect of both principles is to impart knowledge, inspire inquiry, and encourage creative thought.

Lycoming College promotes individual growth and community development through a combination of academic and co-curricular programs in a supportive residential environment that seeks to foster self-awareness, model social responsibility, and provide opportunities to develop leadership skills. Students are encouraged to explore new concepts and perspectives, to cultivate an aesthetic sensibility, and to develop communication and critical thinking skills. The college is committed to promoting racial inclusiveness, gender equality, and an appreciation of cultural diversity. Through a holistic approach, Lycoming College encourages students to become ethical, informed, and engaged individuals.

## **EXPECTED STUDENT LEARNING OUTCOMES**

### **Institutional Expected Student Learning Outcomes**

Upon graduation, a Lycoming College graduate will

- have achieved depth of learning in at least one field of study
- have demonstrated intellectual breadth through the study of the arts, humanities, mathematics, natural and social sciences, and modern or ancient languages
- have completed one or more enhanced academic experiences
- understand cultural diversity
- be able to communicate effectively in both written and oral forms
- be able to think critically
- have demonstrated information literacy skills and technological competence in at least one field of study

### **Expected Student Learning Outcomes for Individual Programs**

The learning goals for each program are found at <https://www.lycoming.edu/learning-goals/>.

## THE BACCALAUREATE DEGREE

Lycoming College is committed to the principle that a liberal arts and sciences education is the ideal foundation for an informed and productive life. The liberal arts—including the fine arts, the humanities, mathematics, the natural and social sciences—have created the social, political, economic, and intellectual systems that help define contemporary existence. Therefore, it is essential that students grasp the modes of inquiry and knowledge associated with these disciplines.

Consequently, the baccalaureate degree (Bachelor of Arts or Bachelor of Science) is conferred upon the student who has completed an educational program incorporating the three facets of the liberal arts known as General Education, the major, and electives. Students will complete approximately one-third of their work in each of these areas. The objective of the General Education Program is to ensure that the student achieves breadth in learning through the study of the major dimensions of human inquiry: math and languages, arts and humanities, social and natural sciences.

The objective of the major is to provide depth of learning through completion of a program of focused study in a given discipline or subject area. Elective study affords students the opportunity to develop secondary interests, work in areas complementary to their primary discipline, or explore new fields of study. The combined effect of General Education courses, concentrated study in the major, and electives is to impart knowledge, inspire inquiry, and encourage creative thought. The program enables students to think critically, judge rationally, communicate effectively, and develop an awareness of the diversity of cultures and an enthusiasm for learning that will last throughout their lives.

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The general regulations and policies stated in this catalog are in effect for the 2026-2027 academic year. First-year students entering the College during the 2026-2027 academic year are subject to the requirements that appear on the following pages. Continuing students are subject to the Catalog in effect at the time of their entry unless they elect to complete the current curriculum. Students who transfer to the College with advanced standing will be subject to the requirements imposed upon other students at the College who have attained the same academic level unless they elect to complete the current curriculum.

Students already possessing a baccalaureate degree who are returning for a second degree will be reviewed on an individual basis by the Registrar and major department. Post-baccalaureate students will be subject to the current catalog, must complete all major requirements and related prerequisites, and may be required to complete the General Education requirements. This does not apply to non-degree students in certificate-only programs.

Lycoming College reserves the right to amend or change the policies and procedures stated in this catalog without prior notice to those who may be affected by them. The provisions of this publication are not to be regarded as an irrevocable contract between the applicant and/or the student and Lycoming College.

# ACADEMIC CALENDAR | 2026-2027

| FALL SEMESTER 2026 |       |           |                                                                                    |
|--------------------|-------|-----------|------------------------------------------------------------------------------------|
| <b>AUGUST</b>      | 20    | Thurs     | Academic Year Housing opens for incoming students, 8:00 a.m. – 11:00 a.m.          |
|                    | 20    | Thurs     | New Student Convocation – 2:00 p.m.                                                |
|                    | 20-23 | Thurs-Sun | New Student Orientation                                                            |
|                    | 22    | Sat       | Business Office financial holds check-in for upper classes, 12:00 p.m. – 4:00 p.m. |
|                    | 22-23 | Sat-Sun   | Academic Year Housing opens for upper classes, 10:00 a.m. – 5:00 p.m.              |
|                    | 24    | Mon       | Classes begin for Fall Semester 2026                                               |
|                    | 28    | Fri       | Drop/add and audit deadline for Fall 2026 full semester and 1st seven-week courses |
| <b>SEPTEMBER</b>   | 7     | Mon       | Labor Day—no classes                                                               |
|                    | 23    | Wed       | Course withdrawal & pass/fail deadline for 1st seven-week courses                  |
| <b>OCTOBER</b>     | 2     | Fri       | Incomplete grades due from Spring, May Term, and Summer Sessions 2026              |
|                    | 2     | Fri       | Admissions Open House, Fine Arts Day                                               |
|                    | 2-4   | Fri-Sun   | Homecoming Weekend                                                                 |
|                    | 5     | Mon       | Early Assessment grades due at 1:00 p.m.                                           |
|                    | 5-16  | Mon-Fri   | Advising Period                                                                    |
|                    | 9-11  | Fri-Sun   | Long Weekend—no classes                                                            |
|                    | 12    | Mon       | 2nd seven-week courses begin                                                       |
|                    | 16    | Fri       | Drop/Add period ends for Fall 2026 2nd seven-week courses                          |
|                    | 22    | Thurs     | Senior registration begins                                                         |
|                    | 23    | Fri       | Junior registration begins                                                         |
|                    | 26    | Mon       | Registration pause                                                                 |
|                    | 26    | Mon       | Course withdrawal and pass/fail deadline for full semester courses                 |
|                    | 27    | Tues      | Sophomore registration begins                                                      |
|                    | 28-29 | Wed-Thurs | First-year registration begins                                                     |
| <b>NOVEMBER</b>    | 2     | Mon       | Non-degree registration begins                                                     |
|                    | 2     | Mon       | Drop/add period begins for Spring 2027 classes                                     |
|                    | 7     | Sat       | Admissions Open House                                                              |
|                    | 11    | Wed       | Course withdrawal and pass/fail deadline for 2nd seven-week courses                |
|                    | 24    | Tues      | Thanksgiving Holiday begins at 9:00 p.m.; Break Housing begins at 9:00 p.m.        |
|                    | 29    | Sun       | Academic Year Housing resumes at 10:00 a.m.                                        |
|                    | 30    | Mon       | Classes resume                                                                     |
| <b>DECEMBER</b>    | 1     | Tues      | Independent Studies (ISH) deadline                                                 |
|                    | 4     | Fri       | Classes end                                                                        |
|                    | 5-6   | Sat-Sun   | Reading Days                                                                       |
|                    | 6     | Sun       | Candlelight Service at 7:00 p.m.                                                   |
|                    | 7     | Mon       | Finals week begins                                                                 |
|                    | 11    | Fri       | Fall 2026 semester ends; Break Housing begins at 6:00 p.m.                         |
|                    | 14    | Mon       | Final grades for Fall 2026 due at 1:00 p.m.                                        |

| SPRING SEMESTER 2027 |       |           |                                                                                      |
|----------------------|-------|-----------|--------------------------------------------------------------------------------------|
| <b>JANUARY</b>       | 10    | Sun       | Academic Year Housing resumes at 10:00 a.m.                                          |
|                      | 10    | Sun       | Business Office financial holds check-in, 12:30 p.m. – 3:00 p.m.                     |
|                      | 11    | Mon       | Classes begin for Spring Semester 2027                                               |
|                      | 15    | Fri       | Drop/add and audit deadline for Spring 2027 full semester and 1st seven-week courses |
|                      | 18    | Mon       | Dr. Martin Luther King, Jr. Day—no classes                                           |
| <b>FEBRUARY</b>      | 7     | Sun       | Scholars Day / Partnership Drive-in                                                  |
|                      | 8-19  | Mon-Fri   | Advising Period                                                                      |
|                      | 10    | Wed       | Course withdrawal and pass/fail deadline for 1st seven-week courses                  |
|                      | 12    | Fri       | Long Weekend—no classes                                                              |
|                      | 19    | Fri       | Incomplete grades due from Fall 2026                                                 |
|                      | 22    | Mon       | Early Assessment grades due at 1:00 p.m.                                             |
|                      | 25    | Thurs     | Senior registration begins                                                           |
|                      | 26    | Fri       | Junior registration begins                                                           |
| <b>MARCH</b>         | 1     | Mon       | 2nd seven-week courses begin                                                         |
|                      | 1     | Mon       | Registration pause                                                                   |
|                      | 2     | Tues      | Sophomore registration begins                                                        |
|                      | 3     | Wed       | Academic Symposium—no classes                                                        |
|                      | 3-4   | Wed-Thurs | First-year registration begins                                                       |
|                      | 8     | Mon       | Non-degree registration begins                                                       |
|                      | 8     | Mon       | Drop/add period begins for May Term, Summer Session, and Fall 2027                   |
|                      | 12    | Fri       | Break Housing begins at 6:00 pm for Spring Break                                     |
|                      | 15-19 | Mon-Fri   | Spring Break                                                                         |
|                      | 21    | Sun       | Academic Housing resumes at 10:00 a.m.                                               |
|                      | 22    | Mon       | Classes resume                                                                       |
|                      | 22    | Mon       | Course withdrawal and pass/fail deadline for full semester courses                   |
|                      | 26    | Fri       | Good Friday—no classes                                                               |
| <b>APRIL</b>         | 1     | Thurs     | Independent Studies (ISH) deadline                                                   |
|                      | 3-4   | Sat-Sun   | Accepted Students Day / Partnership Overnight Experience                             |
|                      | 7     | Wed       | Course withdrawal and pass/fail deadline for 2nd seven-week courses                  |
|                      | 18    | Sun       | Honors Convocation                                                                   |
|                      | 22    | Thurs     | Student Showcase—no classes                                                          |
|                      | 24    | Sat       | Last Look                                                                            |
|                      | 30    | Fri       | Classes end                                                                          |
| <b>MAY</b>           | 1-2   | Sat-Sun   | Reading Days                                                                         |
|                      | 3     | Mon       | Finals week begins                                                                   |
|                      | 7     | Fri       | Spring 2027 semester ends; Academic Year Housing closes at 6:00 p.m.                 |
|                      | 10    | Mon       | Final grades for Spring 2027 due at 1:00 p.m.                                        |
|                      | 14    | Fri       | Baccalaureate                                                                        |
|                      | 15    | Sat       | Commencement                                                                         |

| <b>MAY TERM and SUMMER SESSION 2027</b> |     |         |                                                                  |
|-----------------------------------------|-----|---------|------------------------------------------------------------------|
| <b>MAY</b>                              | 17  | Mon     | Residence halls open at noon                                     |
|                                         | 18  | Tues    | Classes begin for May Term and Summer Session 2027               |
|                                         | 19  | Wed     | Drop/add and audit deadline for May Term                         |
|                                         | 21  | Fri     | Drop/add and audit deadline for Summer Session                   |
|                                         | 31  | Mon     | Memorial Day—no classes                                          |
| <b>JUNE</b>                             | 2   | Wed     | Course withdrawal and pass/fail deadline for May Term 2027       |
|                                         | 4-6 | Fri-Sun | Alumni Weekend                                                   |
|                                         | 11  | Fri     | May Term ends; Housing for May Term closes at 4:00 p.m.          |
|                                         | 7   | Mon     | Warrior Day                                                      |
|                                         | 9   | Wed     | Warrior Day                                                      |
|                                         | 14  | Mon     | Warrior Day                                                      |
|                                         | 14  | Mon     | Final grades for May Term 2027 due at 1:00 p.m.                  |
|                                         | 26  | Fri     | Admissions Open House                                            |
| <b>JULY</b>                             | 9   | Fri     | Course withdrawal and pass/fail deadline for Summer Session 2027 |
| <b>AUGUST</b>                           | 13  | Fri     | Summer term ends; housing for Summer Term closes at 4:00 p.m.    |
|                                         | 16  | Mon     | Final grades for Summer Term 2027 due at 1:00 p.m.               |

*Last updated on May 18, 2026*

## WELCOME TO LYCOMING COLLEGE

At Lycoming College, classic meets cutting edge, and tradition meets progress. A liberal arts and sciences college with a distinguished past and an exciting future, Lycoming is dedicated to providing a 21st-century education in a supportive, residential environment that fosters individual growth and a tight-knit community of learners. Founded in 1812, the College helps students discover their passions and how to become meaningful members of their communities.

Lycoming is ranked as a Tier 1 National Liberal Arts and Sciences college by *U.S. News & World Report*, where it has risen 17 spots in the last two years. In addition, Lycoming is listed as one of “The Best 389 Colleges” by *The Princeton Review* and has been named a leading national liberal arts college by *Washington Monthly*.

All of Lycoming’s resources and faculty are dedicated to the undergraduate education of just 1,100 students. With a 11:1 ratio of students to faculty, classes of five or ten students are not uncommon, while larger introductory courses average just 30 students. This means abundant opportunities for individual attention by exceptional faculty members who are truly committed to teaching.

The faculty at Lycoming College are active teachers, committed mentors, and scholars who produce knowledge and creative work. They draw students into learning and prepare them with the skills needed to succeed in a world characterized by rapid change and intense competition. Lycoming students are superbly prepared to meet the challenges of life through an academic program that includes both breadth of study in the arts and humanities, math and languages, social and natural sciences and depth of study in at least one area of concentration. The College grants Bachelor of Arts and Bachelor of Science degrees and offers 67 majors and 69 minors.

Lycoming students, who come from as nearby as Williamsport and as far away as Africa and Asia, embrace the entire student experience. High-impact opportunities can be found in abundance. For example, students conduct research with faculty, complete internships and service or community-based learning projects, teach in the local schools, and study abroad.

Lycoming offers students opportunities to participate in faculty-led research, giving undergraduates a taste of what research is like at a professional level, as well as helping them prepare for graduate studies.

Students who intend to continue their studies in health, law, medicine, and the ministry receive excellent pre-professional preparation. Through a number of cooperative programs with other colleges and universities, Lycoming students study clinical laboratory science, and engineering, while still enjoying the benefits of a small college experience. One of the most popular and successful ways for students to blend career planning with a liberal arts and sciences education is with internships through the College’s Center for Enhanced Academic Experiences. Close to one-third of Lycoming students gain real job experience as part of a semester course load. The Williamsport area is particularly rich in internship opportunities in business, communication, government, health, criminal justice, and social services. The close relationship between the

College and the community has given Lycoming students a chance to roll up their sleeves and gain résumé-enhancing experience rather than mere observation.

Lycoming Students are also encouraged to complement their studies with international experiences. Students may take advantage of traditional study abroad programs around the globe through College partners and other approved programs. In addition, Lycoming offers a variety of short-term travel courses during the semester and the May Term.

The residential life of the College is best described as vibrant. Lycoming affords students the opportunity to do things like perform with the choir or band, act in or direct a play, lead a club or organization, participate in the Outdoor Leadership and Education program, or volunteer in the community, to name a few. At Lycoming, students learn both in the classroom and in the residential environment, and there are many opportunities for students to hone their leadership skills.

Lycoming is proud to offer its students the opportunity to participate in 19 varsity athletic programs (10 for men, 9 for women). The Warriors compete at the NCAA Division III level and are a member of the Landmark Conference. Students may also take part in the College's competitive intramural and club programs.

Lycoming's campus lies near historic downtown Williamsport, a city best-known as the birthplace of Little League Baseball and the site of its annual Little League World Series. The rolling hills and forestlands of north central Pennsylvania provide some of the state's best scenery, as well as hiking, camping, kayaking, and other outdoor recreation, while the Williamsport greater metro area has a population of approximately 100,000 people. Lycoming is less than four hours from New York City, Philadelphia, Washington, D.C., Baltimore, and Pittsburgh.

The College enjoys a relationship with the United Methodist Church and supports its tradition of providing an education to persons of all faiths. The College is firmly committed to a policy of cultural diversity and expects its students to work together in an atmosphere of mutual respect and inclusivity.

Lycoming College prepares students for a lifetime of success at one of the best liberal arts and sciences colleges in the country.

## **LYCOMING COLLEGE HISTORY**

Founded in 1812, Lycoming College is proudly in its third century. The College's curriculum is centered on the liberal arts and sciences while also offering select applied programs including business, accounting, communications, and criminal justice. The Charter described the initial educational focus as the study of "English and other languages" and "the useful arts, sciences and literature." In 1841, the curriculum included English, writing, arithmetic, geography, chemistry, natural philosophy, mathematics, Latin, and Greek.



The Academy fell on hard times in the early 1840s and a group of Methodists, led by the Rev. Benjamin Crever, purchased it and changed its name to the Williamsport Dickinson Seminary. “Seminary” was the name used for schools with more advanced study, and many of the Seminary graduates entered four-year colleges as juniors. The curriculum continued to feature the major components of the Academy curriculum. In the late 19th century, under the leadership of President Edward J. Gray, the study of art and music attracted so many students that the Seminary built a new building, Bradley Hall, dedicated to these two fields.

The Seminary continued to thrive in the early 20<sup>th</sup> century and expanded in the 1920s under the leadership of President John W. Long. In 1929, it became the Williamsport Dickinson Seminary and Junior College, the first private junior college in Pennsylvania. The junior college curriculum formalized the advanced study available at the Seminary, the majority of which was in the liberal arts and sciences.

After World War II, the flood of returning military service personnel swelled the enrollments of all colleges, and led some, including the Seminary and Junior College, to move to full four-year college status. Lycoming College emerged in 1947, marking a fourth change in the institution’s history. The College founders, however, decided to retain the liberal arts and sciences as the central focus of the curriculum.

Lycoming College enjoys its present status as a national liberal arts and sciences college largely because its leaders have remained steadfast to the tradition established by its founders, believing that the best preparation a person can have for a successful and fulfilling life is time spent studying the liberal arts and sciences.

## **STUDENT COMPLAINTS AND QUESTIONS**

The office of the Vice President for Student Affairs and Success can provide guidance to a student who believes there is reason to make a complaint or cannot find the appropriate person or venue to ask a question. The Vice President for Student Affairs and Success will assist students by helping them determine the nature of the complaint and/or the appropriate faculty or staff member to discuss/receive the initial complaint. It is recommended a student first try to address the complaint with the person or department with whom the conflict exists or the question is directed towards. If this action is not possible or if it could make matters worse, writing to the Vice President for Student Affairs and Success is appropriate and encouraged. All official complaints to the Vice President for Student Affairs and Success must be made in writing to:

Dr. Sue O'Driscoll  
Vice President for Student Affairs and Success  
102 Long Hall  
[odriscoll@lycoming.edu](mailto:odriscoll@lycoming.edu)

Lycoming College strives to resolve all student complaints in a fair and expedient manner. Lycoming College encourages all students, regardless of their residency, to first submit any grievances, complaints or concerns directly to Lycoming College. Students who decide to file a formal complaint as an academic or nonacademic grievance must follow the process as outlined above.

Concerns should be expressed as soon as possible after the event occurs. Students are responsible for knowing if their specific grievance has a deadline for filing a grievance or complaint (e.g., contesting a grade).

If a student feels that the issue remains unresolved after reasonable effort to follow the College's internal grievance procedures, the student may contact these entities to file a formal complaint:

**1. Pennsylvania Department of Education-Postsecondary and Adult Education**

*Address:* 333 Market Street, 12th Floor, Harrisburg, PA 17126-0333

*Phone:* 717-783-8228

*Fax:* 717-722-3622

*Email:* [ra-collunivseminfo@pa.gov](mailto:ra-collunivseminfo@pa.gov)

**2. Lycoming College's accreditor, Middle States Commission on Higher Education**

*Address:* 1007 North Orange Street, 4th Floor, MB #166, Wilmington, DE 19801

*Phone:* 267-284-5000

*Email:* [info@msche.org](mailto:info@msche.org)

**3. Pennsylvania's SARA Portal Agency at [PDE-SARA](#).**

For a student who is unable to resolve a complaint via the above channels, please review [NC-SARA complaint information](#).

## **ADMISSION TO LYCOMING COLLEGE**

Lycoming College welcomes applications from prospective students with diverse identities and backgrounds including, but not limited to, race, color, religion, national origin, sex, gender identity or expression, disability, age, sexual orientation, and political affiliation. The College supports the Americans with Disabilities Act (and its amendments) and Section 504 of the Rehabilitation Act and will make reasonable and appropriate accommodations for enrolled students with disability-related documentation. Visit us at <https://www.lycoming.edu>.

### **Admission Decision Criteria**

Admission to Lycoming College is competitive. Applicants are evaluated on the basis of their academic preparation, talents, and interests, as well as the College's capacity to help them achieve their educational objectives and career goals.

Although candidates receive a holistic review, successful candidates for admission have typically completed a college preparatory program in high school, which includes: four years of English, three years of math, two years of world languages, two years of natural or physical science, three years of social science, and two years of academic electives.

In addition, successful admission candidates generally place in the top two-fifths of their high school graduating class and score better than the national average on the SAT or ACT exam.

As part of our comprehensive review process, supplemental materials, as well as a personal interview, may be required prior to the determination of admissibility.

### **Admission Application Filing Period**

Applicants for the fall semester may apply under three different admissions deadlines. Under Early Decision, completed applications must be received by November 15th; Early Action applicants must complete their applications by December 1st; and Regular Decision applicants are received on a rolling basis after December 16th. Spring semester applicants are also reviewed on a rolling basis but should apply no later than December 1st.

### **First-Year Applicants**

First-year applicants must complete the following steps:

- 1) Submit a completed application, preferably Common Application or Coalition Application.
- 2) Provide official transcripts of all high school and post-secondary school studies (whether or not completed).
- 3) Lycoming is a test-optional institution, but should you choose to submit official results of the SAT exam or ACT exam, they can also be considered
- 4) Submit a letter of recommendation, preferably written by a teacher of a core subject or school counselor.
- 5) Submit a personal essay.

### **Transfer Applicants**

Lycoming College considers applications from students who have attended other post-secondary educational institutions as degree-seeking students. These applicants must have earned a cumulative grade point average of at least 2.30 (on a 4-point scale) in transferable courses at the post-secondary institution(s) attended.

Additional information regarding the transfer of college credit appears under Alternative Academic Credit Sources.

Transfer applicants must complete each of the following steps:

- 1) Submit a completed Transfer Common Application or Transfer Coalition Application.
- 2) Provide official transcripts and links to course descriptions or catalogs from each post-secondary school attended. Students who have accumulated less than 24 semester hours (or 36 quarter hours) must also submit high school transcripts.
- 3) Submit the Transfer Student Admission Report.  
([www.lycoming.edu/pdfs/transferringstudentsadmissionreport.pdf](http://www.lycoming.edu/pdfs/transferringstudentsadmissionreport.pdf))
- 4) Submit a personal statement.

### **International Applicants**

Prospective students who are neither citizens nor permanent residents of the United States are welcome to apply for admission.

International applicants must complete each of the following steps:

- 1) Submit the Common Application or Coalition Application.
- 2) Provide certified true copies of all secondary (and, when applicable, post-secondary) transcripts, mark sheets, diplomas, and certificates in the original languages, as well as in English (when the originals are not in English). Translations of non-English materials must be certified as true and correct.
- 3) Submit a letter of recommendation.
- 4) Provide proof of the ability to read, write, and speak English at the college level as evidenced by one of the following assessments: TOEFL IBT (minimum score 70); TOEFL PBT (minimum score 525); IELTS (minimum overall band score 6.0); Pearson English Test - PTE Academic (minimum score 50), or Duolingo English Test – DET (minimum score 100), unless you live in an English-speaking country. You may also submit the SAT or ACT assessment in lieu of an English proficiency exam.
- 5) Submit bank statements showing your family’s ability to fund your Lycoming education, and complete the Financial guarantee form:  
(<https://www.lycoming.edu/admissions/pdfs/international-estimate-expenses-2022-23.pdf>).
- 6) International students who are currently studying in the United States must be “in-status” with the United States Department of Justice — Immigration and Naturalization Service. They must also be eligible to transfer to Lycoming College.

### **Confirmation of Intent to Enroll at Lycoming**

Admitted applicants are asked to confirm their intent to enroll for the fall semester in December for Early Decision candidates, and no later than May 1st for Early Action or Regular Decision applications, or by December 1st for the following spring semester, by submitting the appropriate deposit. All enrolling students are required to submit the \$400 Confirmation Deposit. Admitted international applicants are required to submit all applicable deposits prior to the issuance of the I-20 form. The Confirmation Deposit is refundable prior to the start of the first semester of attendance if the official withdrawal date is not later than May 1.

### **Placement and First Semester Course Scheduling**

Confirmed students complete three key tasks that enable the College to prepare first semester course schedules designed to support individual student academic interests and success. Schedules are built following student completion of the New Student Advising Survey, the math placement exam, and the language placement exam. Students complete these three orientation tasks prior to attending a Warrior Day orientation session.

**New Student Advising Survey:** This survey enables students to express academic interests within the College’s liberal arts and sciences curriculum framework.

**Math Placement:** The online ALEKS Placement Assessment covers material from Basic Math through Precalculus, takes approximately 90 minutes to complete, and can be attempted up to four times at no additional charge between the time the student confirms through March 31 of the first year. After each attempt, a targeted Prep and Learning Module is available to review material should students wish to improve their placement score.

**Language Placement:** New students take an online language assessment and complete a language survey prior to attending Warrior Day. The faculty of the Department of Modern Language Studies use the results of the assessment and survey in combination with the high school transcript to determine an appropriate level course in French, German, or Spanish. The faculty of the Department of Religion determine the appropriate placement in Latin or Hebrew.

## **Student Orientation**

All new students matriculating for the Fall semester, including transfers, are required to participate in the summer orientation programming before they enroll in classes at Lycoming College. The purpose of the orientation program is to acquaint new students and their families with the College to help ensure a successful transition.

The Lycoming Summer Orientation Program consists of:

- completion of all orientation tasks listed on the New Student Orientation SharePoint site
- participation in one of the June Warrior Day sessions
- if unable to attend a Warrior Day, a one-on-one remote meeting with an academic advisor
- 1st Weekend campus-based orientation for all new students and campus move-in for residential students
- New Student Convocation on the Thursday afternoon prior to the start of the fall semester
- Warrior Welcome Week optional activities

Family attendance at Warrior Day and New Student Convocation are encouraged but not required.

## **Orientation for Spring Matriculants**

Students who matriculate in the Spring semester also complete all the orientation tasks listed on the New Student Orientation SharePoint site and attend an orientation program that is held the weekend prior to the start of classes in January. During the January orientation session, students learn strategies for a successful first year in their new academic home.

Information on orientation is mailed to new students after they confirm their intention to enroll. Questions about the orientation process can be addressed to [orientation@lycoming.edu](mailto:orientation@lycoming.edu).

## **Withdrawal of Admission Offers**

Lycoming College reserves the right to withdraw offers of admission when:

- 1) information requested as part of the admission application process is not provided by applicants;
- 2) applicants misrepresent facts to the College during the application process;
- 3) the conduct of applicants is not in keeping with the ethical or moral standards as set forth in the *Lycoming College Catalog* or the *Lycoming College Student Handbook*.

## **Readmission to the College**

Students who leave the College for one or more semesters must apply for readmission. Exception: Students returning from an approved Leave of Absence need not apply for readmission.

To apply for readmission, students should submit the Readmission Application through the Registrar's Office. If applicable, students should have official transcripts for all coursework completed elsewhere sent to the Registrar's Office.

The College reserves the right to deny readmission to former students. Reasons for denial of readmission requests include, but are not limited to, lack of residence hall space, unresolved financial obligations, academic deficiencies, unresolved disciplinary action, charges or convictions related to criminal activity.

Students will be informed in writing about the decision regarding readmission. To confirm readmission, students must make a non-refundable deposit of \$400 to the Business Office . Students who intend to live in the residence halls must complete the appropriate forms in the Office of Residence Life.

## FINANCIAL MATTERS

### Expenses for the Academic Year 2026-2027

The following expenses are effective for the regular fall and spring semesters. The College reserves the right to adjust fees at any time. The fees for each semester are payable approximately three weeks prior to the start of classes for the semester as indicated on the semester bill.

| <b>Fees</b>        | <b>Per Semester</b> | <b>Per Year</b>   |
|--------------------|---------------------|-------------------|
| Tuition            | \$26,208.00         | \$52,416.00       |
| Standard Housing   | \$3,797.00          | \$7,594.00        |
| Standard Food Plan | <u>\$ 3,648.00</u>  | <u>\$7,296.00</u> |
| Total              | \$33,653.00         | \$67,306.00       |

### One-Time Student Fees

|                                       |       |
|---------------------------------------|-------|
| Confirmation/Contingency Deposit..... | \$400 |
| First-Year Student Fee .....          | \$225 |

### Part-Time Student Fees

|                        |         |
|------------------------|---------|
| Each Unit Course ..... | \$6,552 |
|------------------------|---------|

### Additional Charges

|                                                          |                 |
|----------------------------------------------------------|-----------------|
| Activity Fee per semester.....                           | \$100           |
| Technology Fee (resident students) (per semester) .....  | \$250           |
| Technology Fee (commuter students) (per semester) .....  | \$150           |
| Laundry Fee (resident students) (per semester) .....     | \$42.50         |
| Applied Music Fee (half-hour per week per semester)..... | \$350           |
| Cap and Gown.....                                        | prevailing cost |
| Laboratory Fee per Unit Course.....                      | \$10 to \$700   |
| Parking Permit .....                                     | \$125           |
| Practice Teaching Fee .....                              | \$525           |
| Transcript Fee .....                                     | \$6             |

|                                             |         |
|---------------------------------------------|---------|
| Single Housing Charge .....                 | \$4,462 |
| College Apartment.....                      | \$4,936 |
| International Student Health Insurance..... | \$ TBD  |
| Enhanced Food Plan .....                    | \$3,957 |

The tuition covers the regular course load of twelve to sixteen credits each semester excluding band, choir, theater practica, and all Lycoming Scholars Seminars. Any credits over 16 will be charged at a rate of \$1,638 per credit. Students who drop below full-time during the add/drop period will receive an adjustment to tuition, housing, food plans, fees, and financial aid. Students who drop individual course(s) after the add/drop period will not receive any adjustment to tuition, housing, food plans, fees, or financial aid. Resident students must have a food plan at the College. The estimated cost for books and supplies is \$1,200 per year, depending on the course of study. Special session (May Term and Summer Session) charges for tuition, housing, and food plans are established during the fall semester.

Students taking MATH 100 may take another 2-credit course concurrently, or two credits may be banked for future use. If the credits are banked, the student would be allowed to take up to 18 credits in a subsequent semester with no additional tuition cost. Banked credits may be applied to a regular term or May term 4-credit course; in this case, the student would pay for only the two additional credits. Banked credits from MATH 100 can only be used for official Lycoming College courses.

Members of the Lycoming College Scholars Program may audit a fifth class per semester at no additional charge. Laboratory and other special fees must be paid in full.

### **Online Statements and Payment Processing**

Lycoming College does not mail paper statements to the student's home address. A student and their authorized party/parties can access the statements online. Students can access their online statements by logging into Lyco Advisor. Authorized parties can access their student's online statements by going to the Business Office's webpage. Bills can also be paid electronically using checking, savings, VISA, Mastercard, Discover, and American Express. Authorized parties will only be able to view their own payment and bank information. Each authorized party is assigned a separate password for added security and privacy.

### **Student Health Insurance**

This insurance is mandatory for all international students.

### **Non-Payment of Fees**

Lycoming College has the right to withhold future registrations, final grades, diplomas, and certifications of withdrawals in good standing if student accounts for previous attendance have not been settled. Unpaid student accounts will be charged interest at the rate of 1% per month on the month-end balance until accounts are paid in full. Should legal collection become necessary, the fees of any collection agency, which may be based on a percentage at a maximum of 33% of the debt, and all costs and expenses, including reasonable attorney's fees, will be added to the balance due.

## **Entry Fees and Deposits**

**Confirmation/Contingency Deposit** — All full-time students who have been notified of their admission to Lycoming College are required to make a \$400 Confirmation Deposit to confirm their intention to matriculate. The Deposit is held until Graduation or if the College requests the student to leave. Any remaining deposit balance will be refunded after all financial obligations to the College have been satisfied.

The Confirmation Deposit is refundable prior to the start of the first semester of attendance if the official withdrawal date is not later than May 1.

## **Partial Payments**

For the convenience of those who find it impossible to follow the regular College schedule of payments, arrangements may be made to make monthly payments using our third-party payment provider. Additional information may be obtained from the Business Office website or by calling the Business or Admissions Office.

## **The Return of Title IV Funds Policy**

The federal Higher Education Act (HEA) of 1965 was amended in 1998, and new regulations were established with regard to Title IV student financial aid programs. Students earn their Title IV federal financial aid by attending class and if they are not enrolled long enough to earn some or all of their aid, the "unearned" portion must be returned to the appropriate Title IV program.

Title IV financial aid programs include Federal Pell Grant, Federal Stafford Loans, Federal PLUS Loans, Federal Work-Study (FWS), and TEACH Grant. Federal Work-Study earnings are not affected by Title IV regulations concerning the return of unearned federal financial aid. Only federal grants and federal loans are affected by this policy.

The Return of Unearned Title IV Funds Policy applies if the student withdraws from or ceases attending all classes before the sixty percent point in the term. Completely withdrawing from or ceasing to attend may result in financial aid repayment. Withdrawing may also affect future financial aid eligibility.

### **Official Withdraws (Dropping all classes):**

Students who officially withdraw from all classes prior to completing at least 60% of the semester have not “earned” all of their federal financial aid. A Return to Title IV Funds calculation must be performed within 30 days. This calculation is performed using the R2T4 Tool available through the federal COD website. If the student has received excess funds, the institution must return to the U.S. Department of Education a portion of the excess equal to the lesser of the student's institutional charges multiplied by the percentage of funds that were not earned, or the entire amount of the excess funds. If the return of funds creates a balance due on the student statement of account, the student will be liable for satisfying the outstanding balance.

The institution will return any unearned funds for which it is responsible no later than 45 days from the determined date of the student's withdrawal following the order below:



1. Federal Direct Unsubsidized Stafford Loans
2. Federal Direct Subsidized Stafford Loans
3. Federal Direct Parent PLUS Loan
4. Federal Pell Grants
5. Iraq & Afghanistan Service Grants
6. Federal Supplemental Educational Opportunity Grants
7. TEACH Grants

**For students enrolled in modules:**

A student is considered withdrawn if they do not complete all the days in the payment period that the student was scheduled to complete. Lycoming College will track enrollment in each module to determine if a student began enrollment in all scheduled courses. If a student officially drops courses in a later module while still attending a current module, they are not considered withdrawn based on not attending the later module. However, a recalculation of aid based on a change in enrollment status may still be required. Students who provide written confirmation to the Financial Aid Office at the time of ceasing attendance that they plan to attend another course later in the same payment period are not considered to have withdrawn from the term. If the student does not provide written confirmation of plans to return to school later in the same payment period or term, Lycoming College considers the student to have withdrawn and begins the R2T4 process immediately. However, if the student does return to Lycoming College in the same term, even if they did not provide written confirmation of plans to do so, the student is not considered to have withdrawn and is eligible to receive the Title IV funds for which the student was eligible before ceasing attendance. Financial Aid will then reverse the R2T4 process and provide additional funds that the student is eligible to receive at the time of return. Institutional funds are not subject to the R2T4 policy.

**Unofficial Withdrawals (Stop attending all classes):**

For students who stop attending all classes prior to the end of the term without officially withdrawing, a return of federal financial aid will be calculated according to the same guidelines. Students who do not receive any “earned” grades are considered to be unofficial withdrawals. For Title IV purposes, the Return to Title IV calculation will be based upon the mid-point of the term, or the last documented date of attendance in an academically-related activity if that can be determined.

A student who fails all classes in a term may be subject to a Return to Title IV calculation. If a student “earned” at least one F grade (i.e. participated in class until the end of the semester and received an F for poor performance), then no calculation is required. However, if the student failed all classes because of non-attendance at some period in the semester, then a Return to Title IV calculation is required based on the last documented date of attendance. If the last date of attendance cannot be determined, then the 50% point of the term will be used as the withdrawal date, and the unearned aid will be 50%.

**Post-Withdrawal Disbursement**

A post-withdrawal disbursement applies when a student completely withdraws from school and may be eligible to receive grants and or loans that have not yet disbursed. The amount of the disbursement is determined by a required Return of Title IV calculation when a student completely withdraws from school.

A student may not receive any funds as a post-withdrawal disbursement that the school is prohibited from making on or before the date the student withdrew.

Examples of this include:

- If a promissory note for a Federal Direct Stafford Loan or Federal Direct Parent PLUS Loan has not been signed and submitted by the student before the institution performs the Return to Title IV calculation, the loan is automatically canceled.
- The institution may provide loan counseling information with the notice of eligibility for a post-withdrawal disbursement. However, the institution will not make the disbursement to the student until the student has completed entrance counseling.
- If the student is a first-year, first-time borrower of a Federal Direct Loan and withdraws before the 30th day of the semester, the Federal Direct Stafford Loan or Federal Direct Parent PLUS Loan is canceled.

If it is determined that a student or parent is eligible for a post-withdrawal disbursement, grant funds will be disbursed first and will be credited to the student's account for current outstanding charges of tuition and fees. For a balance due for charges other than tuition and fees, the institution will seek authorization from the student to deduct those charges from grant proceeds. If a remaining balance exists, the institution will seek the student's or parent's, if applicable, authorization to pay tuition and fees and other educationally related expenses from loan proceeds. If a credit balance exists after the payment of all charges, the institution will refund those funds to the student or parent (in the case of a Federal Direct Parent PLUS Loan). Any remaining balance due to the institution is the responsibility of the student.

### **Grant Funds**

The institution will notify the student by letter (to the last known address) if grant funds are available after the Return to Title IV calculation has been performed. Within 45 days of determination that a student withdrew, the institution will disburse the eligible grant funds for current charges and, if authorized, other outstanding educationally related charges.

### **Lycoming Refund Policy**

Students wishing to withdraw from the College during the semester should meet with an Academic Dean to ensure that student financial and academic records are properly closed. The effective date for calculating adjustments to tuition, fees, housing, and food shall be the documented date of campus departure.

Students withdrawing will have their tuition, fees, housing, and food charges adjusted according to the following schedule:

| <b>Time of Withdrawal</b> | <b>Billing Charge Reduced to</b> |
|---------------------------|----------------------------------|
| During Week 1             | 10% of the original amount       |
| During Week 2             | 20% of the original amount       |
| During Week 3             | 30% of the original amount       |
| During Week 4             | 40% of the original amount       |
| During Week 5             | 50% of the original amount       |

| <b>Time of Withdrawal</b> | <b>Billing Charge Reduced to</b> |
|---------------------------|----------------------------------|
| During Week 6             | 60% of the original amount       |
| After 6th Week            | No Adjustments Made              |

An administrative fee of \$100 will be charged to the student's account. Please note that there is no adjustment of tuition, fees, housing, and food after the sixth week of the semester.

Withdrawing students must also be aware that in addition to the Lycoming College Student Withdrawal Billing Policy, a Federal Return of Title IV Funds must also be calculated for any Pell Grant, SEOG, Stafford Loan, PLUS Loan, or TEACH Grant. The College is required to perform a Return of Title IV Funds calculation for all federal financial aid recipients who withdraw (officially or unofficially) from all classes on or before the 60% attendance point of the semester. This calculation is based on the documented last date of class attendance. **Students may have a balance due to the College, Federal Government, or both if any or all portions their Title IV aid must be returned.** See the above Federal Return of Title IV Funds Policy for further explanation on the return of federal funds.

Any balance due remaining will be billed to the student. Unpaid student account balances will be charged interest at the rate of 1% per month on the month end balance until the account is paid in full. Should legal collection become necessary, all costs of collection will be added to the balance due.

## FINANCIAL AID

Lycoming College is committed to helping students and families meet college costs. While some assistance is available to students regardless of need (merit scholarships), the primary purpose of the College's financial aid program is to help qualified students of limited financial resources attend Lycoming College. Scholarships may be awarded on the basis of merit and/or need, while grants are provided solely on the basis of financial need. Long-term educational loans with favorable interest rates and repayment terms are available, as are part-time employment opportunities.

If a student receives a Tuition Remission Fee Waiver or a Tuition Exchange Scholarship, all Lycoming funded scholarships and awards become honorary. That is, the monetary value of the Lycoming scholarships and awards becomes zero.

Students receiving Lycoming College scholarships or grants cannot receive total scholarship and grant aid from all sources (including Veterans Benefits) in excess of tuition and fees (and room and board if a resident student). The Lycoming scholarship and/or grant will be reduced to meet this requirement.

Students receiving a **Presidential, Faculty, Trustee, Dean, Third Century Award, Impact Award, or other Lycoming Scholarship** may add only *one* additional Lycoming-funded scholarship to their financial package. Examples of funded Lycoming scholarships include the Pennsylvania Free Enterprise Week (PFEW) scholarship, and talent awards in music, theatre, art, creative writing, and film and video arts.

It is important to submit the FAFSA after October 1st, as appropriate income information becomes available, but by May 1. Although applications may be filed later, applicants can only receive consideration for remaining available funds.

To be considered for financial aid, students and families must complete the following steps for each year the student seeks assistance:

1. Fully complete and submit the Free Application For Federal Student Aid (FAFSA). Returning students should submit the Renewal FAFSA. Go to **[www.studentaid.gov](http://www.studentaid.gov)**.
2. The College may request federal income tax transcripts and W-2's from the student and parent(s) to be submitted to the Financial Aid Office. Transcripts can be obtained by calling the IRS at 1-800-908-9946. The tax transcripts required are for two years preceding the academic year in which the student seeks assistance.
3. PA residents can apply for state grant assistance using the FAFSA as well. Non-PA residents should contact the State Grant Agency in their home state to see if additional forms must be filed.

Basic eligibility requirements for all federal programs are available from the Department of Education at [www.studentaid.gov](http://www.studentaid.gov). Students are responsible for understanding the basic eligibility requirements.

### **Enrollment Status for Financial Aid Eligibility**

Financial aid eligibility is substantially reduced for students who are charged less than full-time tuition. Credit is earned for some courses which are offered at no charge, including choir, band, theatre practica, and all Lycoming Scholars Seminars. Therefore, these credits are not counted in the full-time tuition calculation. For financial aid purposes, a full-time student is enrolled in at least 12 billable semester hours. A student's financial aid eligibility is finalized after the end of the college's published add/drop period.

### **Satisfactory Academic Progress Requirements for Financial Aid Recipients**

NOTE: Financial aid programs subject to the following Satisfactory Academic Progress (SAP) Requirements include all Federal Title IV aid (Pell, FSEOG, Work-Study, Stafford Loans, PLUS Loans, TEACH Grant) and all Lycoming College grants, scholarships, and loans.

Financial aid recipients are required to be in good academic standing and maintain satisfactory academic progress toward their degree requirements. Satisfactory academic progress, as described below, is evaluated annually (end of the spring semester) and cumulatively by the Financial Aid Office. Failure to maintain satisfactory progress may result in the suspension of financial aid eligibility. The Financial Aid Office will notify students who do not meet the satisfactory academic progress requirements by mail and/or by email to their Lycoming email account.

Satisfactory Academic Progress for financial aid eligibility should not be confused with the College's academic progress policy as determined by the Academic Standards Committee. These are two distinct and totally separate policies that students must be aware of.

Undergraduate students receiving financial aid must maintain a minimum cumulative grade point average and make steady progress toward the completion of their degree as described below. The maximum time frame for program completion is defined as 150% of the credits required to complete the degree program as defined by Lycoming College. For example, a typical Bachelor's degree requires 128 credits:  $128 \times 150\% = 192$  credits. Students who attempt more than 192 credits are ineligible for financial aid. Students will be considered in good academic standing if they meet the following standard:

| Attempted Credits | Minimum Cumulative Grade Point Average | Credit Completion Requirements |
|-------------------|----------------------------------------|--------------------------------|
| 0 – 32.5          | 1.20                                   | 67% of attempted credits       |
| 33 – 48.5         | 1.40                                   | 67% of attempted credits       |
| 49 – 64.5         | 1.60                                   | 67% of attempted credits       |
| 65 – 80.5         | 1.80                                   | 67% of attempted credits       |
| 81 or more        | 2.00                                   | 67% of attempted credits       |

Transfer and/or AP credits accepted by Lycoming College will be included in the progress completion requirement and minimum GPA requirement (if the college transferred in the grade). Students who have not completed their undergraduate degree after 192 attempted hours (including transfer credits) will no longer be eligible for financial aid. The student will be automatically placed on Financial Aid Suspension. Students must graduate with a cumulative 2.0 grade point average.

### **Examples of Credit Completion Requirements**

1. A student who has attempted a total of 24 credits must have successfully completed at least 16\* credits ( $24 \times .67 = 16.08$ ).
2. A student who has attempted a total of 56 credits must have successfully completed at least 38\* credits ( $56 \times .67 = 37.52$ ).
3. A student's Lycoming transcript reflects 24 transfer and/or AP credits. If the student has attempted a total of 80 credits of Lycoming coursework, the student must have successfully completed at least 70\* credits, including transfer and AP credits ( $(80 + 24) \times 0.67 = 69.68$ ).

\* Calculations not resulting in whole numbers are rounded to the nearest whole credit.

### **Treatment of W, I, X, P, and F Grades and Repeated Coursework**

1. Course withdrawals (W) after the drop/add period are not included in the GPA calculation, but are considered a non-completion of attempted coursework.

2. Incomplete (I) grades are not included in the GPA calculation but are considered a non-completion of attempted coursework until the incomplete grade is replaced with a permanent grade and academic progress can be reevaluated.
3. An audit (X) grade is not considered attempted coursework. It is not included in the GPA calculation or completion rate determination.
4. A satisfactory (P) grade is treated as attempted credits earned, but it is not included in the GPA calculation
5. A failing grade (F) is treated as attempted credits not earned; it will be included in the calculation of the GPA and the minimum completion rate.
6. The most recent course grade for a repeated course will be included in the calculation of the GPA and every repeated attempt will be included in the completion rate determination.

### **Financial Aid Suspension**

Important - Please Note: A successful appeal of academic suspension is unrelated to financial aid suspension and does not result in reinstatement of a student's financial aid eligibility. Appealing one's financial aid suspension status is a separate process.

Students who fail to successfully complete the minimum credit completion rate or fail to complete their program within the maximum time frame or fail to meet the minimum cumulative GPA requirement will have their financial aid eligibility suspended.

### **Reinstatement of Aid after Financial Aid Suspension**

Reinstatement of financial aid after a student is placed on Financial Aid Suspension is achieved as follows:

1. The student submits a written letter of appeal (see Appeal Process below) in accordance with the appeals process, and the Financial Aid Appeals Committee grants the appeal. The student is then placed on financial aid probation, allowing an additional semester in order to bring the academic requirements up to minimum standards set forth in the appeal response letter sent to the student.
2. The student attends Lycoming College during the Suspension semester, pays for tuition and fees without the help of student aid, and does well enough in the coursework to satisfy all the satisfactory academic progress standards. The student must notify the Financial Aid Office if they plan to attend Lycoming College without the assistance of financial aid; or
3. The student attends summer school to eliminate the deficiency in credits and/or GPA. The student must notify the Financial Aid Office if they are planning to take classes during the summer to eliminate the deficiency.

Students who have been placed on Financial Aid Suspension cannot merely skip a semester to regain eligibility. No financial aid will be disbursed during subsequent semesters for students on Financial Aid Suspension. If an appeal is granted and the student subsequently fails to attain the minimum standards after one semester or fails to meet the individualized requirements that were specified by the appeals committee in their written response to the student appeal, eligibility for financial assistance will be cancelled automatically for future semesters. No further appeals will be accepted and students will have to pay full charges on their own, bringing their academic requirements up to minimum standards, before regaining financial aid eligibility.

### **Appeal Process**

The appeal letter must address:

1. The extenuating circumstance(s) as to why satisfactory academic progress was not made.
2. What has changed in the student's situation that would allow the student to demonstrate satisfactory academic progress at the next evaluation (i.e. after the probationary semester if an appeal is granted)?

Extenuating circumstances can include, but are not limited to: illness or injury, death of a family member, family difficulties, financial difficulties, etc.

Appeals of Financial Aid Suspension must be made in writing by the date specified in the Suspension notification letter. The Financial Aid Appeals Committee will review the appeal and notify the student in writing to the student's Lycoming College email account within 5 working days of their decision. All decisions made by the Financial Aid Appeals Committee are final and not subject to further review.

Appeals may be emailed to [Finaid@lycoming.edu](mailto:Finaid@lycoming.edu), or mailed to:

Lycoming College  
Office of Financial Aid  
Attn: Financial Aid Appeal Committee  
One College Place  
Williamsport, PA 17701

### **Federal Grants**

**Pell Grants** are made available by the federal government. Eligibility is based upon a federal formula. These grants may be available for up to the equivalent of 12 full-time semesters.

**Supplemental Educational Opportunity Grants** may be awarded to students with exceptional financial need. Priority must be given to Pell Grant recipients. Funds are provided by the federal government. Funds are limited.

## State Grants

**Pennsylvania State Grants** may be available for PA residents meeting domicile and financial requirements of the program. Eligibility is determined by the Pennsylvania Higher Education Assistance Agency (PHEAA). These grants are available for a maximum of 8 semesters. Non-PA residents should contact the State Grant Agency in their home state for availability of funds to students attending out-of-state colleges.

## Loan Programs

**Federal Direct Stafford Loan** allows eligible First-Year Students to borrow a maximum of \$5,500 annually. Eligible Sophomores may borrow up to a maximum of \$6,500 annually. Eligible Juniors and Seniors may borrow up to a maximum of \$7,500 annually. Students may be eligible for at least a partial federal interest subsidy depending upon financial need. Go to [www.studentaid.gov](http://www.studentaid.gov) for interest rates, to complete entrance counseling and to electronically sign a Master Promissory Note.

**Federal Direct PLUS Loan** is a loan that parents may take out on behalf of their dependent student. The amount a parent may borrow for one year is equal to the cost of education for one year minus any financial aid the student is eligible for in that year. Go to [www.studentaid.gov](http://www.studentaid.gov) to apply and for interest rate information.

## Employment Opportunities

**Federal College Work-Study Program Awards** provide work opportunities on campus for qualified students. Students get paid for work performed in the previous pay period. Based on documented need and awarded by the Financial Aid Office. Funding is limited. The student assumes full responsibility for locating a job. Returning students who wish to work the following year must have their name submitted to the Financial Aid Office by their supervisor before the end of the Spring semester.

Students also have the opportunity to seek work-study employment off-campus in the Community Service program. Interested students can get additional information in the Financial Aid Office.

**Lycoming Campus Employment Program** is similar to Federal Work-Study except that it is not based on financial need, and students are paid with institutional funds only. A limited number of jobs are available. Funding is limited.

## Other Aid Sources

**Reserved Officers Training Corps (ROTC)** Stipends and Scholarships are available for qualified students. Contact the Financial Aid Office for more information.



**United Methodist Scholarships** may be available to full-time degree-seeking applicants who have a cumulative GPA of 3.00 or better, are active in Christian activities, and who are active, full members of a United Methodist church. Demonstrated financial need is also required. Annual application is required. The funds are provided by the United Methodist Church. Contact [umhefscholarships@umhef.org](mailto:umhefscholarships@umhef.org) for more information and applications. Renewal requires a cumulative GPA of at least 3.00.

**United Methodist Student Loans** are available on a very limited basis to students who are members of the United Methodist Church. Contact The Board of Higher Education and Ministry, P.O. Box 871, Nashville, TN 37202 for more information.

**Non-college Aid Opportunities** are often available through family employers or labor unions, business firms, fraternal and religious organizations, and secondary schools. Parents should contact employers or organizations of which they are members for information on financial aid resources.

### **Veterans Benefits**

Lycoming College is approved by the Pennsylvania State Approving Agency for VA educational benefits to train veterans and other eligible persons for approved programs and courses required for those programs. We are a proud Yellow Ribbon partner.

Lycoming welcomes all veterans, their eligible dependents, members of the National Guard and Reserves, and active-duty personnel. We thank you for your service and are pleased that you are considering Lycoming College to further your career.

The Department of Veteran's Affairs determines a student's eligibility for education assistance benefits. To apply for veteran's benefits, please contact the Veteran's Affairs Education Department at 1-888-GI BILL 1 (1-888-442-4551). They will be able to assist you with all questions. Apply for GI Bill® benefits: [www.gibill.va.gov](http://www.gibill.va.gov) or at [www.benefits.va.gov](http://www.benefits.va.gov). Below is a listing of the Chapters and forms needed.

- Chapter 30, 33 and 1606 - VA form 22-1990
- Chapter 33 Dependent - VA Form 22-1990E
- Chapter 35 and Fry scholarship - VA Form 22-5490

**Chapter 35** (qualified dependents of deceased or disabled veterans) students need a copy of their birth certificate and the veteran's Social Security number in order to apply for benefits.

**All Chapter 30** (Montgomery GI Bill®) and **Chapter 1606** (National Guard and Reserves) must verify their enrollment on the last day of each month, and up to two weeks afterwards, by phone if your enrollment has not changed during the month, 1-877-823-2378 or at [www.gibill.va.gov](http://www.gibill.va.gov) and follow the link to the Web Automated Verification of Enrollment (WAVE) program.

## **The Montgomery GI Bill®**

The Montgomery GI Bill® (Chapter 30) Active Duty program provides up to 36 months of education benefits. These benefits may be used for degree and certificate programs, apprenticeship/on-the-job training, and correspondence courses. Generally, benefits are payable for 10 years following your release from active duty. The Montgomery GI Bill® (Chapter 1606) Selected Reserve Program may be available to you if you are a member of the Army Reserve, Navy Reserve, Air Force Reserve, Marine Corps Reserve, Coast Guard Reserve, the Army National Guard, and the Air National Guard. Students may use this education assistance program for degree programs, certificate or correspondence courses, cooperative training, independent study programs, or apprenticeship/on-the-job training. Remedial, refresher, and deficiency training are available under certain circumstances.

Eligibility for this program is determined by the selected reserve components. The student is normally responsible for paying tuition and fees at the time of registration; however, a tuition deferment for up to 60 days is an option for students using these benefits. Please contact the Financial Aid Office for more information or to apply. The VA makes the payments to the student for this program upon verification of enrollment certification which must be completed each semester. The student may be entitled to receive up to 36 months of education benefits. Their benefit enrollment entitlement ends 10 years from the date of eligibility for the program or on the day the individual left the selected reserve component. The following documents are needed to apply for the Montgomery GI Bill® benefits:

- Copy of DD-214 for Active Duty Program
- Letter of eligibility form Selected Reserve Unit for Selected Reserve Program
- VA Form 22-1990 (Application for Veterans' Educational Benefits) or VA Form 22-1995 (Request for Change of Place of Training or Program) if students have previously used VA benefits at another institution or have not attended for one semester
- All prior academic transcripts
- Military transcripts (these can be requested online for each military branch)

## **Post 9/11 GI Bill® (Chapter 33)**

The Post 9/11 GI Bill® is a program developed by the VA that went into effect August 1, 2009. This program is for individuals who serve at least 90 aggregate days (or at least 30 continuous days with a discharge due to a service-connected disability) of active duty from 9/11/2001 to the present. Veterans applying for this program may be eligible for a housing allowance, books/supplies stipend, and payments covering tuition and fees up to the highest undergraduate rate for a public institution of higher learning in the state. To check your eligibility and get further information on this program, please visit <http://www.gibill.va.gov> or contact the VA at 1-888-4551. Required documents for Chapter 33 benefits are the same as those listed above for the Montgomery GI Bill® (Chapter 30).

## **Survivors' and Dependents' Educational Assistance Program (DEA-Chapter 35)**

Dependents' Educational Assistance provides education and training opportunities to eligible dependents of certain veterans. The program offers up to 45 months of education benefits. These benefits may be used for degree and certificate programs, apprenticeship, and on-the-job training. Remedial, deficiency, and refresher courses may be approved under certain circumstances. The following documents are needed to apply for DEA benefits:

- Copy of DD-214 for qualifying veteran
- Copy of marriage certificate for spouse and birth certificate for children
- VA Form 22-5490 (Application for Dependent and Survivor Educational Benefits) or VA Form 22-5495 (Request for Change of Place of Training or Program) if students have previously used VA benefits at another institution or have not attended for one semester
- All prior academic transcripts

Current members of the military should speak with their Educational Service Officer (ESO) or counselor within their military service branch prior to enrollment.

Students eligible for financial benefits from the Veterans Administration must give the Registrar's Office a copy of your Certificate of Eligibility, Certificate of Release or Discharge from Active Duty (DD-214) or a Notice of Basic Eligibility (NOBE).

Students seeking veteran's education benefits should contact our VA Certifying Official at least six weeks prior to their registration period. All benefit recipients (excluding Chapter 31, Chapter 33, and 1606) are normally required to pay their educational costs up front; however, a tuition deferment for up to 60 days is an option for students using these benefits. Please contact the Financial Aid Office for more information or to apply. Certification of enrollment is made by a VA Certifying Official once the student notifies the verifying official that they have finalized their schedule for the semester. Funding from the Veteran's Administration will be paid directly to students by the Veteran's Administration Office.

The Department of Veteran Affairs requires that students who receive veterans benefits make due progress toward the completion of a degree or certificate in order to continue receiving benefits. Students receiving VA benefits must maintain all requirements listed in the Lycoming College 2025-2026 catalog.

### **Certification Requirements**

- Students must follow a Lycoming College degree plan. Only courses that apply to their declared degree plan at Lycoming College will be approved for benefits.
- Students must provide an official transcript from all previously attended post-secondary schools by the end of the first semester. This includes non-accredited institutions and the student's military transcript (if not a spouse/dependent).
- Students must notify the Lycoming College Veterans Affairs Certifying Official upon registration each semester in order to request certification. Certification is not automatic.
- Students should allow 4-6 weeks for processing paperwork by the College Veteran Services representative and additional processing time for the VA Regional Office.

*Note: Please refer to <https://www.benefits.va.gov/gibill> or call 1-888-GIBILL for additional requirements, updates, information, and other resources for your educational benefits.*

Eligible veterans receive monthly payments for their entitlement based on the coursework for which they enroll. Students should make certain that each course meets the requirements for graduation in the veteran's declared degree program or completion of a certificate program. A course for audit credit will not be certified for payment. Please note that the following is also reviewed by the Veteran's Administration:

- All withdrawals, enforced withdrawals, and reductions in class loads will be reported to the Veteran's Administration Office and may result in a debt to the VA, Lycoming College, or both.
- Repeats of classes where Ds or above were earned will not be covered for veterans benefits.

### **VA Delayed Payment Policy**

Lycoming College strives to ensure that students will not be penalized by any undue delay in payment from the Department of Veterans Affairs in accordance with our values and guidance set out in the Veterans Benefits and Transition Act of 2018, section 3679(e) of Title 38, United States Code as amended.

We allow students using VA educational benefits that pay tuition directly to the college (Post-9/11 GI Bill®) to attend their course of study without further payment requirements from the date they submit documentation of their eligibility for benefits to 90 days after the student's tuition and fees are certified or until the VA makes payment, whichever comes first.

"Documentation of eligibility" is defined as a signed VA 28-1905 form for Vocational Rehabilitation, a certificate of eligibility or eBenefits printout for Post-9/11 GI Bill®, and a "new student packet" for both types of beneficiaries (available on our website or in the Financial Aid Office) to ensure accurate certification.

It is our practice to "hold" these students' classes without further expectation of payment once documentation of eligibility is received, count the full amount of their eligible tuition and fees "paid" once the student's information is certified to the VA and reported to our Business Office, and ensure that payment is made by the Department of Veterans Affairs on the back end through our weekly and monthly reconciliation processes. We will not impose any penalties or denial of services on a student – such as late fees or denial of access to classes, libraries, or institutional facilities – on the basis of delayed VA payments, nor will we require students to borrow loan funds to cover tuition and fee costs we know will eventually be paid by the VA. (Please note that it is still possible for these students to incur late fees, but only on the basis of waiting until the late registration period to enroll, not as a consequence of delayed payment by the VA.)

*GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government website at [www.benefits.va.gov/gibill](https://www.benefits.va.gov/gibill).*

For questions or information, contact Lycoming College's Veteran Affairs Certifying Official at (570) 321-4145 or email registrar@lycoming.edu.

## **ACADEMIC POLICIES AND REGULATIONS**

*Students are expected to familiarize themselves with the academic policies contained in this Catalog. Failure to do so does not excuse students from the requirements and regulations described herein.*

## **THE UNIT COURSE SYSTEM**

Most courses at Lycoming College are unit courses, meaning that each course taken is considered to be equivalent to four credits. Exceptions occur in applied music and theatre practicum courses, which are offered for either one-half or one credit and in departments that have elected to offer certain courses for the equivalent of one, two, or three credits. Lycoming Scholars and IMS Scholars Seminars are awarded one credit per semester. Furthermore, independent studies and internships may be awarded anywhere from one to 16 credits.

The typical student course load is four unit courses (16 credits) during the fall and spring semesters. Students who elect to attend the special sessions may enroll in one unit course (four credits) during the May term and up to two unit courses (eight credits) during the Summer term. A student is considered full time when enrolled for a minimum of three unit courses or the equivalent (12 credits) during the fall, spring, or combined May and Summer terms.

Students may enroll in five unit courses (up to 20 credits) during the fall and spring semesters if they are Lycoming Scholars or were admitted to the Dean's List at the end of the previous semester. Exceptions may be granted by the Provost and Dean of the College. There will be an additional charge, see Financial Matters.

Overloads are not permitted during the May and Summer terms.

## **ACADEMIC PERIOD**

Each fall semester consists of 15 calendar weeks of instruction with 5 exceptions (Labor Day, Friday of Long Weekend, and Wednesday through Friday of Thanksgiving) plus a week for final exams. Each spring semester consists of 15 calendar weeks of instruction with 10 exceptions (Dr. Martin Luther King Jr. Day, Friday of Long Weekend, spring break week, Academic Symposium, Student Research Expo, and Good Friday) plus a week for final exams. Each May Term consists of 4 weeks of instruction with 1 holiday (Memorial Day). The Summer term consists of 13 weeks of instruction with three holidays (Memorial Day, Juneteenth, and Independence Day).

## **Recommended Instructional Time**

For fall and spring semesters, 4-credit courses are held in various forms. Sessions lasting more than 65 minutes are lengthened to allow for short breaks. Standard times:

- Most courses are offered as three 65-minute lecture sessions or two 110-minute lecture sessions.
- Art studio courses meet for two 140-minute sessions.
- Natural science and psychology lab courses meet for three lecture sessions of 50-65 minutes and one laboratory session of 110 to 170 minutes. Some include an additional 50-minute recitation session.
- Some mathematics courses and computer science courses include an additional 110-minute laboratory or recitation.

During fall and spring semesters, the College also offers 2-credit courses that meet for varying amounts of time, depending on the nature of the course and in-class/outside-of-class demands. Examples include basic algebra and dance. Also, many departments offer non-credit colloquia where students, faculty, and outside speakers give presentations on research and other independent work, and music lessons as well as choir and band are offered in both one-credit and half-credit options, depending on time commitment. Lycoming Scholars and Institute for Management Studies weekly seminars also carry one credit and meet for 50 minutes a week.

The credits earned for each course is clearly documented in the College Catalog. All courses are unit courses (4 credits) unless specified otherwise, e.g. 1 credit or 2 credits.

May Term lasts for 4 weeks, and courses are held five days per week for eighteen 180-minute sessions or four days per week for sixteen 200-minute sessions. Summer Term lasts for 13 weeks and course offerings are limited to practica, internships, field experiences (e.g. archaeological digs), and independent studies.

## **Recommended Out-of-Class Time Requirements**

Students will typically average at least two hours per week of outside course work for each hour in the classroom, except in cases where a portion of that time is allocated to additional in-class time that is structured for faculty-supervised self-paced work (e.g. studio art classes and courses with recitation sections). Students taking independent studies, internships, practica, or honors projects are expected to average three hours per week of work (e.g. working on-site, meeting with faculty/internship advisors, researching, and writing) for every credit earned.

## **ALTERNATIVE ACADEMIC CREDIT SOURCES**

### **Transfer Credit**

Applicants and matriculated students may transfer up to 64 credits from colleges and universities with institutional accreditation recognized by the U.S. Department of Education. Lycoming College does not accept coursework that is strictly technical, remedial, or physical education. For matriculated students, a maximum of 9 credits of online courses will be considered for transfer. Incoming students who earned transfer credits for online courses completed before matriculation are not eligible to take additional online courses through this process if doing so increases their online course total to more than 9 credits.

Students must complete the final 32 credits of the degree program, the final 16 credits in the major, and at least 50% of the credits in the major area at Lycoming College or as part of a pre-approved study-away program.

Matriculated students who wish to study at other campuses must obtain preapproval to do so from their advisor, the chair of the department in which the credit will be awarded, and the Registrar. Course work counting toward a major or minor must also be approved in advance by the chairperson of the department in which the major or minor is offered. Once a course is approved, the credit and grades for the course will be transferred to Lycoming and calculated in the student's grade point average as if the courses were taken here. This means that "D" and "F" grades will be transferred as well as all other grades. Unapproved courses will not transfer.

For incoming students with coursework completed at other institutions, credits will be granted only for courses that have a grade of C- or higher. Courses with a non-grade such as "P" or "S" will not transfer. Accepted transfer courses will be shown on the Lycoming transcript with a grade of "T." Lycoming College will determine which courses are appropriate for transfer and is under no obligation to accept any course.

Lycoming College does not have a statute of limitations, but it reserves the right to refuse to accept some courses for transfer in which the content is out of date. The Registrar will consult the academic department(s) involved.

Final determination of transfer credit will be made by the Registrar based on official transcripts only.

### **Credit By Examination**

Students may earn credit or advanced placement through the standardized examinations listed below. The appropriate academic department will determine which tests and the minimum scores required to earn transfer course equivalencies. A list of approved exams and scores is available on the Registrar's Office webpage.

Although these examinations may be taken after matriculation, new students who are competent in a given area are encouraged to take the examination of their choice before entering Lycoming so that the College will have the test scores available for registration advising for the first semester of enrollment. Students applying to the College for the first time should inform the Admissions Office that they have completed these tests and provide the official scores as part of their application packet. Matriculated students must send official test scores to the Office of the Registrar and inform their academic advisors when examinations have been taken.

**Cambridge International Exams** – Students who have completed A-Level exams with a grade of B or better will be granted credit. No other level (O or AS Level) of exams will be granted credit.

**The College Entrance Examination Board Advanced Placement (CEEB AP)** - A score of four is required for credit.

**College Level Examination Program (CLEP)** - A score equivalent to a grade of “B” or above is required.

**The International Baccalaureate** - Students who have completed the full diploma and have scores of five or above on all of the higher level examinations will be granted 32 credits; specific courses will be based on the examinations taken. Students who complete the full diploma but earn less than a score of five on all of the higher level examinations will be granted eight credits for each higher level examination completed with a grade of five or higher and four credits for a satisfactory or higher completion of the Theory of Knowledge requirement. Students who have completed the certificate will be granted credit based on the examinations taken. Standard level examinations will not be considered.

## **STUDENT RECORDS**

The policy regarding student educational records is designed to protect the privacy of students against unwarranted intrusions and is consistent with Section 43B of the General Education Provision Act (commonly known as the Family Educational Rights and Privacy Act of 1974, as amended). The details of the College policy on student records and the procedures for gaining access to student records are contained in the current issue of the Student Handbook which is available in Snowden library, in the Office of the Vice President for Student Life, and online (<http://www.lycoming.edu/studentLife/studentHandbook/>).

## **REGISTRATION**

During the registration period, students select their courses for the next semester and register on Lyco Advisor Self-Service. Course selection is made in consultation with the student’s faculty advisor to ensure that the course schedule is consistent with College requirements and student goals. Students may not receive credit for courses in which they are not formally registered.

During the first five days of the fall and spring semesters, students may drop any course with no notation on their permanent record, and they may add any course that is not closed. The permanent record will reflect the student’s registration as of the conclusion of the drop/add period. Students wishing to withdraw from a course after the fifth day of classes must submit a course withdrawal form in the Office of the Registrar. Withdrawal grades are not computed in the grade point average. The withdrawal deadline is on the tenth Monday of the fall and spring semesters and the comparable date during the May and Summer terms. Students who stop attending a course but do not withdraw will receive a grade of “F.”

In zero- or 2-credit courses that meet only during the last half of any semester, students may drop/add for a period of five days, effective with the mid-term date shown on the academic calendar. The withdrawal deadline for half-semester courses is the fifth Wednesday of the half-term (Weeks 5 and 12, respectively).



## **Cross Registration**

A special opportunity exists in the Williamsport area for students to take courses at the Pennsylvania College of Technology. Students may enroll for less than a full-time course load at the Pennsylvania College of Technology while remaining enrolled in courses at Lycoming.

Students must be enrolled full-time in a degree program and have earned no more than 93 semester hours. Cross registration is available for the Fall and Spring Semesters.

## **NON-DEGREE STUDENTS**

Students who do not wish to pursue a degree at Lycoming College may, if space permits, register for credit or audit courses on either a part-time or full-time basis. Students who register for less than 12 credits are considered to be enrolled part time. Students who register for 12 or more credits are considered to be enrolled full time and must pay a \$500 down payment. All full-time students are required to pay an activity fee, technology fee, as well as any other applicable institutional fees or course related charges.

Anyone wishing to register as a non-degree student must fill out an application form in the Admissions Office and pay the tuition rate in effect at the time of each enrollment.

All non-degree students are subject to the general rules and regulations of the College as stated in the College Catalog and the Student Handbook. The College reserves the right to deny permission to register for individuals who do not meet the standards of the College.

Students who wish to change from a non-degree to a degree status must apply for admission as a degree candidate and satisfy all conditions for admission and registration in effect at that time.

## **AUDITORS**

Any person may audit courses at Lycoming at one-fourth tuition per course. Members of the Lycoming College Scholars Program may audit a fifth course per semester at no additional charge. Laboratory and other special fees must be paid in full. Examinations, papers, and other evaluation devices are not required of auditors, but individual arrangements may be made to complete such exercises with consent of the instructor. The option to audit a course must be declared by the end of the drop/add period by notifying the Registrar's Office.

## **ATTENDANCE**

The academic program at Lycoming is based upon the assumption that there is value in class attendance for all students. Individual instructors have the prerogative of establishing reasonable absence regulations in any course. The student is responsible for learning and observing these regulations.

## WITHDRAWAL FROM THE COLLEGE

A student who wishes to withdraw from the College during the semester should contact one of the Academic Deans. College personnel will explain the procedure and ensure they connect with the appropriate campus offices to properly close the student's financial and academic records.

The deadline to withdraw from the College is on the tenth Monday of the fall and spring semesters and the comparable date during the May and Summer terms. Late withdrawal requests substantiated with medical documentation and received within 60 days after the semester has ended will be considered by the Academic Standards Committee.

A student who decides to discontinue study at the College at the end of a semester must provide written notification of such plans by submitting the Not Returning Survey which is maintained in the Registrar's Office

## LEAVE OF ABSENCE

Students who find it necessary to leave the College either during a semester or who choose not to return for one or two semesters are eligible to request a Leave of Absence (LOA).

A Leave of Absence occurs when a student leaves the College and, at the time of departure, fully intends to return within one or two semesters. A Leave of Absence can occur either during the semester or in advance of an upcoming semester.

**Benefits of a Leave of Absence:** The student retains college e-mail, is eligible to register for classes during the registration period, may participate in the housing lottery, and remains in an ongoing relationship with the College. The College maintains connection with a student who has every intention of returning.

### **The following conditions apply to all Leaves of Absence:**

1. The LOA/Withdrawal Form must be completed with a Dean in Academic Services and signed by all appropriate offices.
2. The College retains the matriculation deposit and the advance registration deposit.
3. The standard Refund Policy applies, if applicable.
4. A student on a Leave must meet the normal deadlines for applying for financial aid in order to be considered for funding for the semester in which the student plans to return.
5. Commencing with the last day of enrollment before the Leave takes effect, a student who has taken out an educational loan has a six-month grace period before repayment of the loan must begin, as per federal policy.
6. During the LOA, the student must follow the College's Guest Policy when visiting campus.
7. If a student is unable to return from a Leave within the agreed upon time, a request to extend the Leave may be granted by writing to the Office of the Registrar.

8. If a student is unable or chooses not to return to the College within the agreed upon time of the Leave, the student's status code will change to Withdrawn. No action on the part of the student will result in the change of status.
9. Students must be in good academic and disciplinary standing to qualify for a Leave of Absence.

### **Leave of Absence for Medical Reasons**

1. A Leave of Absence for medical reasons occurs when a student experiences a medical issue that requires time away from the College to address it.
2. To request a Leave of Absence for medical reasons, the student must provide documentation from Health Services, Counseling Services, or a recognized medical professional.

When a student is granted a medical LOA during a given semester, the student will receive a grade of "W" (withdrawn) or "I" (incomplete) as determined by each course instructor. The determination is made based on the nature of the course and the amount of work yet to be completed. The student should discuss this with a Dean in Academic Services and each course instructor.

## **GRADING SYSTEM**

The evaluation of student performance in courses is indicated by the use of traditional letter symbols. These symbols and their definitions are as follows:

**A EXCELLENT** — Signifies superior achievement through mastery of content or skills and demonstration of creative and independent thinking.

**B GOOD** — Signifies better-than-average achievement wherein the student reveals insight and understanding.

**C SATISFACTORY** — Signifies satisfactory achievement wherein the student's work has been of average quality and quantity. The student has demonstrated basic competence in the subject area and may enroll in additional course work.

**D PASSING** — Signifies unsatisfactory achievement wherein the student met only the minimum requirements for passing the course and should not continue in the subject area without departmental advice.

**F FAILING** — Signifies that the student has not met the minimum requirements for passing the course.

**I INCOMPLETE WORK** — Assigned in accordance with the restrictions of established academic policy.

**P PASSING WORK, NO GRADE ASSIGNED** — Converted from traditional grade of A through D-.

**R A REPEATED COURSE** — Students shall have the option of repeating courses for which they have already received a passing grade in addition to those they have failed. Credit is received only once for the course. The most recent course grade—unless it is a W—will count toward the GPA.

**W WITHDRAWAL** — Signifies withdrawal from the course from the sixth day through the ninth week of the semester.

**X AUDIT** — Work as an auditor for which no credit is earned.

Pluses and minuses may be awarded (except for A+, F+, or F-) at the discretion of the instructor.

| <b>Grade</b> | <b>Quality Points<br/>Earned for Each Credit</b> |
|--------------|--------------------------------------------------|
| A            | 4.00                                             |
| A-           | 3.67                                             |
| B+           | 3.33                                             |
| B            | 3.00                                             |
| B-           | 2.67                                             |
| C+           | 2.33                                             |
| C            | 2.00                                             |
| C-           | 1.67                                             |
| D+           | 1.33                                             |
| D            | 1.00                                             |
| D-           | 0.67                                             |
| F            | 0.00                                             |

No other grades carry quality point values.

Semester GPA is calculated by dividing the total number of quality points obtained in any given semester by the number of graded credits from that semester. The total number of quality points is determined by multiplying the quality points for each class by the number of graded credits. Cumulative GPA is calculated in the same way, using all quality points and graded credits completed at or transferred to the college. The cumulative GPA is not determined by averaging semester GPA's.

The grade point average for credits achieved in the major and minor is calculated in the same way as the cumulative grade point average. A minimum of 2.00 is required for both the cumulative grade point average and the grade point average in the major(s) (and minor(s), if applicable) to meet the requirements for graduation.

### **Pass/Fail**

Use of the pass/fail grading option is limited as follows:

- Students may enroll on a P/F or A/B/P/F basis in no more 4 credits per semester.
- Students may earn a grade of P in no more than 16 credits during their undergraduate careers. (Instructor-designated P/F courses are excepted from these limitations.)
- P grades earned in courses after declaration of a major, minor, or teacher certification program may not be used to satisfy a requirement of that major, minor, or teacher certification program. (Instructor-designated P/F courses are excepted from these limitations.)
- FYS 159 and ENGL 106 cannot be taken on a P/F or A/B/P/F basis.
- Instructor-designated P/F courses may be offered during the May term with the approval of the Provost and Dean of the College.
- If a student selects P/F and earns a grade of A to D-, a P will be recorded on the permanent record.
- If a student selects A/B/P/F and earns a grade of A to B, the grade will be recorded on the permanent record and computed in the grade point average. If a student select A/B/P/F and earns a grade of B- to D-, a grade of P will be recorded on the permanent record.
- P grades are not computed in the grade point average.
- If a student earns a grade of F, this grade will be recorded on the permanent record and computed in the student's grade point average.
- Students must declare the P/F or A/B/P/F option by the withdrawal deadline. The decision to take a course P/F or A/B/P/F cannot be changed after the withdrawal deadline.
- Instructors are not notified which of their students are enrolled on a P/F or A/B/P/F basis.
- Students electing the P/F or A/B/P/F option are expected to perform the same work as those enrolled on a regular basis.
- Students must obtain approval from their advisor to take a course on a P/F or A/B/P/F basis.

## **Incomplete Grades**

Incomplete grades may be given if, for absolutely unavoidable reasons (usually medical in nature), the student has not been able to complete the work required in the course. An incomplete grade must be removed within six weeks of the next regular semester, otherwise the incomplete is converted to an "F."

## **Repetition of Course**

Students shall have the option of repeating courses for which they have already received a passing grade in addition to those which they have failed. Recording of grades for all repeated courses shall be governed by the following conditions:

- A course may be repeated only one time. Both attempts will be recorded on the student's transcript.
- Credit for the course will be given only once.
- The most recent grade will count toward the GPA with this exception: A "W" grade cannot replace another grade.

## **Final Course Grade Appeal Process**

Assigning final course grades is a responsibility that falls within the professional judgment and expertise of each faculty member. Grades assess as accurately as possible a student's

performance according to clear criteria provided in the course such as academic performance, class attendance, and punctuality in submitting assignments. Student appeals of the final course grade must follow the three-step procedure outlined below.

(1) At any time after final grade reports are issued but no later than two weeks into the beginning of the semester following the conclusion of the course, the student must request an informal conference with the instructor to discuss the grade and attempt to resolve the concern.

(2) If the outcome of the informal conference is not satisfactory to the student or if the instructor is not available, the student may submit a written request to meet with the department chairperson (or another faculty member in the department in instances involving the chairperson) within two weeks of meeting with the instructor. The student's request must include a written statement outlining the basis for the appeal and documenting the date(s) when the student met with the course instructor. It is the function of the chairperson to determine the relevant facts and to attempt to resolve the disagreement. The decision regarding the course grade in question will be made by the instructor in consultation with the chairperson (or their stand-in). The student will receive from the department chairperson written notification of the decision within one week of the meeting with the chairperson.

(3) If resolution has not been achieved at step two, the student or the instructor may make a written appeal to the Provost and Dean of the College within two weeks of the department chairperson's written notification. In order to resolve the disagreement, the Provost and Dean will confer with the student and the instructor in private sessions. If the Provost and Dean is unable to accomplish a resolution, they will forward the case to the Committee on Academic Standards.

(4) Appeal to the Committee on Academic Standards is the most serious level a final course grade appeal can reach. Both the student and the instructor must submit brief written statements (with accompanying documentation) to the Committee, describing the matter as they understand it. The Committee may decide not to hear the appeal on the basis of the written statements. If it does hear the appeal, the Committee will make a final decision in the matter, which could include changing the original grade. Cases involving grade appeals to the Committee on Academic Standards will be heard by the entire committee but will be voted on only by the four faculty members serving on the committee. The Provost and Dean of the College will communicate in writing to the student and the instructor the final decision of the Committee within three weeks of receiving the appeal. This is the final step in the appeal process.

## **ACADEMIC LEVELS**

The following table is used to determine the academic grade level of degree candidates. See Financial Aid for more information.

| <b>Year</b>         | <b>Semester</b> | <b>Number of Credits Earned</b> |
|---------------------|-----------------|---------------------------------|
| First-Year Students | 1               | Fewer than 12                   |
|                     | 2               | At least 12 but fewer than 24   |

|           |   |                                |
|-----------|---|--------------------------------|
| Sophomore | 1 | At least 24 but fewer than 40  |
|           | 2 | At least 40 but fewer than 56  |
| Junior    | 1 | At least 56 but fewer than 76  |
|           | 2 | At least 76 but fewer than 96  |
| Senior    | 1 | At least 96 but fewer than 112 |
|           | 2 | More than 112                  |

## ACADEMIC STANDING

### Good Academic Standing

Students will be considered in good academic standing if they meet the following standard:

| Credits Completed         | Minimum Cumulative GPA |
|---------------------------|------------------------|
| fewer than or equal to 16 | 1.50                   |
| 16.5 – 32 credits         | 1.85                   |
| 32.5 – 48 credits         | 1.95                   |
| 48.5 or more              | 2.00                   |

### Academic Warning

The academic warning status is designed for students who are in good academic standing but who are at-risk for unsuccessful academic persistence with a cumulative GPA less than 2.0 and greater than the threshold for good academic standing. Students on academic warning are required to complete ASP 153 if not previously taken.

### Academic Probation

Students who do not meet the standards for good academic standing at the end of any given semester will be placed on academic probation for the next semester.

Students on academic probation are required to participate in the Academic Recovery Program developed by the Office of Academic Services and complete ASP 153 if not previously taken.

### Academic Suspension

In the second semester and all subsequent semesters, students are eligible for suspension from the College when:

- their cumulative grade point average is below good standing for any two consecutive semesters,
- they earn a grade point average of 1.25 or under in any one semester, or
- they fail to complete academic probation requirements.

Students placed on academic suspension are eligible to appeal the suspension to the Committee on Academic Standards. All notifications of academic suspension include notification of this right and instructions for how to submit an appeal.

The period of academic suspension will be for a minimum of one full semester, not including May term or the summer sessions.

- After this time students may apply for readmission to the College. The decision for readmission will be made by the Committee on Academic Standards. Readmission is not guaranteed.
- Students readmitted after suspension will be on academic probation.
- Students readmitted after suspension who fail to meet the required standards may be dismissed.
- Students may request permission to take courses at another institution. Courses not receiving prior approval will not be accepted for transfer.

## **Academic Dismissal**

Students are eligible for academic dismissal from the College when they cannot reasonably complete all requirements for a degree.

The standard length of academic dismissal will be for a period of two years.

- After this time, students may apply for readmission to the College. The decision for readmission will be made by the Committee on Academic Standards. Readmission is not guaranteed.
- Students readmitted after dismissal will be on academic probation.
- Students may request permission to take courses at another institution. Courses not receiving prior approval will not be accepted for transfer.

Academic probation, suspension, and dismissal become effective at the end of the semester in which the student fails to meet the academic standards listed above. The student will be notified of such action via campus email. Receipt of such notice is not a prerequisite to the student's being placed on probation, suspension, or dismissal.

## **ACADEMIC HONESTY**

**The integrity of the academic process of the College requires honesty in all phases of the instructional program.** The College assumes that students are committed to the principle of academic honesty. Students who fail to honor this commitment are subject to dismissal.

Procedural guidelines and rules for the adjudication of cases of academic dishonesty are found in *The Student Handbook*.

## **ACADEMIC HONORS**

### **Dean's List**

Students are admitted to the Dean's List at the end of the fall and spring semesters if they meet all of the following conditions:

- complete at least 12 credits with a grade of A through D- for the semester at Lycoming or an approved affiliate, cooperative, or exchange program (see section of catalog dealing with Cooperative programs, and Special Academic Opportunities)
- earn a minimum grade point average of 3.50 for the semester
- do not incur grades of F



## Graduation Honors

Students are awarded the Bachelor of Arts degree or the Bachelor of Science degree with honors when they have earned the following grade point averages based on all courses attempted at Lycoming, with a minimum of 64 credits required for a student to be eligible for honor:

*summa cum laude*..... exactly 3.90-4.00

*magna cum laude* ..... exactly 3.70-3.89

*cum laude* ..... exactly 3.50-3.69

**Academic Honor Awards, Prizes, and Societies** - Superior academic achievement is recognized through the conferring of awards and prizes at the annual Honors Convocation and Commencement and through election to membership in honor societies.

## Societies

|                                        |                       |
|----------------------------------------|-----------------------|
| Art .....                              | Kappa Pi              |
| Athletics .....                        | Chi Alpha Sigma       |
| Biology.....                           | Beta Beta Beta        |
| Business Administration .....          | Sigma Beta Delta      |
| Chemistry.....                         | Gamma Sigma Epsilon   |
| Communication.....                     | Lambda Pi Eta         |
| Criminal Justice .....                 | Alpha Phi Sigma       |
| Economics.....                         | Omicron Delta Epsilon |
| Education .....                        | Kappa Delta Pi        |
| English .....                          | Sigma Tau Delta       |
| General Academic.....                  | Phi Kappa Phi         |
| Greek Scholarship.....                 | Gamma Sigma Alpha     |
| Greek Scholarship and Leadership ..... | Order of Omega        |
| History.....                           | Phi Alpha Theta       |
| Language.....                          | Phi Sigma Iota        |
| Leadership .....                       | IRUSKA                |
| Leadership Honor Society .....         | Omicron Delta Kappa   |
| Mathematics.....                       | Kappa Mu Epsilon      |
| Philosophy.....                        | Phi Sigma Tau         |
| Physics .....                          | Sigma Pi Sigma        |
| Political Science.....                 | Pi Sigma Alpha        |
| Premedical .....                       | Alpha Epsilon Delta   |
| Psychology.....                        | Psi Chi               |
| Religion.....                          | Theta Alpha Kappa     |
| Social Science .....                   | Alpha Kappa Delta     |
| Sociology .....                        | Alpha Kappa Delta     |
| Theatre .....                          | Alpha Psi Omega       |

Lycoming College reserves the right to amend or change the policies and procedures stated in this handbook without prior notice to those who may be affected by them. The provisions of this publication are not to be regarded as an irrevocable contract between the applicant and/or the student and Lycoming College.

## THE ACADEMIC PROGRAM

Lycoming College awards two different degrees: Bachelor of Arts (B.A.) and Bachelor of Science (B.S.). For students wishing to do so, earning both baccalaureate degrees is possible. Candidates for both degrees must satisfy all requirements for each degree and earn a minimum of 160 credits. Alternatively, students who have completed fewer than 160 credits and all other requirements for two baccalaureate degrees from Lycoming College will receive only one baccalaureate degree of their choice with all completed majors posted to the transcript. The student must choose the baccalaureate degree to be conferred.

First-year students entering the College during the 2025-2026 academic year are subject to the requirements that appear on the following pages. Continuing students are subject to the Catalog in effect at the time of their entry unless they elect to complete the current curriculum. Students who transfer to the College with advanced standing will be subject to the requirements imposed upon other students at the College who have attained the same academic level unless they elect to complete the current curriculum.

Students already possessing a baccalaureate degree who are returning for a second degree will be reviewed on an individual basis by the Registrar and major department. Post-baccalaureate students will be subject to the current catalog, must complete all major requirements and related prerequisites, and may be required to complete the General Education requirements. This does not apply to non-degree students in certificate-only programs.

If a student interrupts his or her education but returns to the College after no more than one academic year has passed, they will retain the same requirements in effect at the initial date of entrance. A student who withdraws from the College for more than one year will, upon return, be required to complete the requirements currently imposed upon other students of the same academic level unless they elects to complete the current curriculum.

Lycoming College certifies four official graduation dates per calendar year. Diplomas are awarded when all materials confirming the completion of the graduation requirements have been received and approved by the Registrar's Office at least five days prior to the date of graduation. Degrees are awarded on the following approximate dates: **January 10** for those who complete requirements during the Fall semester; **May Commencement date** for those who complete

requirements during the Spring semester; **June 15** for those who complete requirements during May term; and **August 25** for those who complete requirements during the Summer term.

Lycoming's Commencement ceremony occurs in May. Students will be permitted to participate in the ceremony when (a) they have finished all degree requirements as of the preceding January 1, have finished all requirements as of the May date, or have a plan approved by the Registrar for finishing during May or Summer Terms; and (b) they are in good academic standing at the conclusion of their last semester prior to the ceremony.

The College will graduate any student who has completed the General Education Requirements, fulfilled the requirements for at least one major, earned a minimum of 128 credits, and met all other requirements for graduation.

Exceptions to or waivers of any requirements and/or policies listed in this Catalog must be made by the Committee on Academic Standards.

## **THE BACCALAUREATE DEGREE**

Lycoming College is committed to the principle that a liberal arts and sciences education is the ideal foundation for an informed and productive life. The liberal arts—including the fine arts, the humanities, mathematics, the natural and social sciences—have created the social, political, economic, and intellectual systems that help define contemporary existence. Therefore, it is essential that students grasp the modes of inquiry and knowledge associated with these disciplines.

Consequently, the baccalaureate degree (Bachelor of Arts or Bachelor of Science) is conferred upon the student who has completed an educational program incorporating the three facets of the liberal arts known as General Education, the major, and electives. Students will complete approximately one-third of their work in each of these areas. The objective of the General Education Program is to ensure that the student achieves breadth in learning through the study of the major dimensions of human inquiry: math and languages, arts and humanities, social and natural sciences.

The objective of the major is to provide depth of learning through completion of a program of focused study in a given discipline or subject area. Elective study affords students the opportunity to develop secondary interests, work in areas complementary to their primary discipline, or explore new fields of study. The combined effect of General Education courses, concentrated study in the major, and electives is to impart knowledge, inspire inquiry, and encourage creative thought. The program enables students to think critically, judge rationally, communicate effectively, and develop an awareness of the diversity of cultures and an enthusiasm for learning that will last throughout their lives.

### **Research and Information Competencies**

The need to support and instruct students on how to evaluate, access, and understand the information-based environment that surrounds them is critical. A distinguished liberal arts education relies on a breadth of competencies as well as the ability to access knowledge. At

Lycoming College, students are encouraged to formulate and refine questions; to acquire basic knowledge of where to begin the discovery process; to know how, when, and what kind of information defines effective research; to synthesize, format, cite, and reconcile diverse information; to evaluate the quality and sustainability of information; and to differentiate between types of sources and the relevance of each.

## **THE BACHELOR OF ARTS OR BACHELOR OF SCIENCE DEGREE**

### **REQUIREMENTS FOR GRADUATION**

Lycoming College offers Bachelor of Arts (B.A.) and Bachelor of Science (B.S.) degrees. Most majors offer a B.A. or a B.S. degree, but students majoring in Biology, Chemistry, Physics, and Psychology may elect either the B.A. or the B.S. degree. When there is a selection, the B.S. degree is most appropriate for students planning further education in a graduate or professional school.

Every baccalaureate degree candidate is expected to meet the following requirements in order to qualify for graduation:

- Complete the General Education requirements.
- Complete a major. Students must complete every major requirement successfully and have a minimum grade point average of 2.00 in the major.
- Pass a minimum of 128 credits with a minimum cumulative grade point average of 2.00. Students may complete additional credits beyond the required 128, provided that the minimum 2.00 cumulative average is maintained.
- Complete in residence the final 32 credits offered for the degree at Lycoming or as part of a pre-approved study-away program.
- Satisfy all financial obligations incurred at the College.
- Complete the Graduation Application in Lyco Advisor Self-Service during the final semester before graduation.

### **GENERAL EDUCATION REQUIREMENTS**

General Education requirements are designed to promote the breadth of study central to a liberal arts education, raise awareness of issues critical to a diverse America and an interconnected world, and develop skills essential for success in any discipline or profession. It includes two courses that must be taken during the first year (a First-Year Seminar and English Composition), Distribution Requirements (courses in the Fine Arts, Humanities, Mathematics, Modern or Ancient Languages, the Natural Sciences, and the Social Sciences), classes focusing on Writing and Diversity (both Global and Domestic), and an Enhanced Academic Experience. Courses for which a grade of “P” are recorded may not be used toward the fulfillment of a General Education Requirement. (For an explanation, refer to the Grading System.)

- **Complete two First-Year Requirements**

**A. Complete a First-Year Seminar (FYS).** The first-year seminar includes a 4-credit course (FYS 159) and 0-credit, pass/fail college transition workshop (FYS 150) which are corequisites. A first-year seminar successfully completed at Lycoming College—regardless of the academic content area—can be used to reduce one of the required Distribution courses in Fine Arts, Humanities, non-laboratory Natural Sciences, or Social Sciences; however, it may not be used within the Distribution Requirements for English composition, mathematics, or modern or ancient languages. First-Year Seminars do not count toward the major.

A dropped FYS course does not appear on the transcript and does not satisfy the FYS graduation requirement.

Earning a final grade of W or F in FYS 159 satisfies the FYS graduation requirement. However, no credits are earned toward other graduation requirements, and the course cannot be used to reduce a Distribution Requirement. Students may repeat FYS 150 and 159 in the immediate next semester.

Transfer students who have earned 16 or more credits can be exempt from the First-Year Seminar requirement. Transfer students who have earned 32 or more credits may not enroll in an FYS course.

**B. Pass an English Composition class.**

First-Year Seminar and English Composition classes help students develop the skills necessary to continue to be successful throughout their college careers. These classes promote written, oral, and information literacy (research) components, contributing to critical thinking in the classroom.

- **Complete the Distribution Program**

The Distribution Program prepares students for the world by acquainting them with the fundamental questions and topics that educated persons ask about human life and the world in which we live. These courses help students gain exposure to a range of disciplines, subjects, and perspectives within the liberal arts and sciences.

The Lycoming College Distribution Program introduces students to the conceptual foundations and traditions of the liberal arts through courses in various academic fields:

**Fine Arts** courses may emphasize the nature of the artistic imagination through expression, performance, or analysis. Through work in this area, students may discover and develop their own talents, gain an appreciation for the work of others, or acquire an understanding of the history and methods of critical analysis as applied to works of the artistic imagination.

**Humanities** courses emphasize the techniques of literary criticism; argumentation; or conceptual, textual, or historical analysis in an effort to understand and evaluate the role of human beings in the world.

**Mathematics** courses ensure that students learn logical thinking, analytical skills, or effective decision-making through practical or abstract applications.

**Modern or Ancient Language** courses allow students to achieve communication skills and understanding of a second language and culture of the world.

**Natural Sciences** courses introduce students to the use of the scientific method to describe, explain, or predict physical phenomena, sometimes making use of experimental and observational techniques gained through laboratory experience.

**Social Sciences** courses introduce students to the use of the scientific method to describe, explain, or predict the behavior of human beings, individually or in groups, using empirical methodologies or other established forms of analysis.

Courses may be used to satisfy only one Distribution Requirement. No more than two courses used to satisfy the Distribution Requirements may be selected from the same prefix (e.g., ARHI, BIO, FVA, ENGL, HUMA, PHIL). Courses used to fulfill the Modern or Ancient Language Requirement do not count toward the two courses per prefix limit. This means that care must be taken to comply with this rule in English, Modern Language Studies literature courses, and Theatre.

In the following list of Distribution Requirements, a “course” refers to a 4-credit course taken at Lycoming, any appropriate combination of fractional unit courses taken at Lycoming which accumulate to four credits, any appropriate course which is taken by cross-registration, any appropriate course which is part of an approved off-campus program (such as those listed in the catalog sections titled COOPERATIVE PROGRAMS, SPECIAL ACADEMIC OPPORTUNITIES, and STUDY ABROAD PROGRAMS), or any approved course transferred from another institution.

## **STANDARD REQUIREMENTS**

**A. Fine Arts** - Students are required to pass two courses (or the equivalent) from Art, Art History, Creative Writing, English: any course numbered 115 or higher, Film, Film and Video Arts, French: any course numbered 311 or higher, German: any course numbered 225 or higher, Music, Spanish: any course numbered 225 or higher, Theatre, and/or a First-Year Seminar.

**B. Humanities** - Students are required to pass four courses from American Studies; English: any course numbered 115 or higher; French: any course numbered 311 or higher; Gender, Sexuality, and Women’s Studies; German: any course numbered 225 or higher; History; Medieval Studies; Philosophy; Religion; Spanish: any course numbered 225 or higher; Theatre 210; and/or a First-Year Seminar. Students must successfully

complete a course in at least 3 of these prefixes.

**C. Mathematics** - Students are required to demonstrate competence in basic algebra by scoring at level 2, 3, or 4 on a placement test (See section on Placement Tests) or successfully completing MATH 100 (or its equivalent). They must also pass one course selected from MATH 106, 109, 112, 115, 123, 128, 129, 130, 140, 214, or 216. The requirement of competence in basic algebra must be met before the end of the fourth semester or within one year of entry, whichever is later. Students who have not met this competency requirement before the final semester of the applicable time period must register for MATH 100 that semester.

**D. Modern or Ancient Languages** - Students are required to pass a course at the 102 level or higher in French, German, Greek, Hebrew, Latin, Spanish, or another language approved for transfer. (See section on Placement Tests.) International students whose native language is not English and who took at least one year of high school in their native language may either 1) fulfill the language requirement in Modern or Ancient Languages, 2) take a fourth writing focused (“W”) course, or 3) take one course in English above English 106. If a student chooses the last option, the course may not also be used to fulfill a Humanities or Fine Arts Distribution Requirement. International students who meet the criteria and wish to use option 2 or 3 to satisfy the language requirement should contact the Registrar’s Office.

**E. Natural Sciences** - Students are required to pass two courses chosen from Astronomy/Physics, Biology, Chemistry, Environmental Science, Exercise Science, Neuroscience, and/or a First-Year Seminar. One course must incorporate a laboratory component.

**F. Social Sciences** – Students are required to pass two courses from Anthropology, Archaeology, Criminal Justice and Criminology, Economics, Legal Studies, Political Science, Psychology, Sociology, and/or a First-Year Seminar.

## **LYCOMING SCHOLARS REQUIREMENTS**

**A. Fine Arts** - Lycoming Scholars are required to pass two courses (or the equivalent) from the following: **Art**: ART 111, 116, 220, or higher; any **Art History** course; any **Creative Writing** course; **English**: any course numbered 200 or higher; **Film**: any course numbered 200 or higher; **Film and Video Arts**: any course numbered 200 or higher; **French**: any course numbered 311 or higher; **German**: any course numbered 225 or higher; **Music**: MUS 117, 160, or higher; **Spanish**: any course numbered 225 or higher; **Theatre**: 145 or any Theatre course numbered 200 or higher, except 235 and 236; a **First-Year seminar**.

**B. Humanities** - Lycoming Scholars are required to pass four courses from the following: **American Studies**: any course numbered 200 or higher; **English**: any course numbered 200 or higher; **French**: any course numbered 311 or higher; **Gender, Sexuality, and Women’s Studies**: any course numbered 200 or higher; **German**: any

course numbered 225 or higher; **History**: any course numbered 200 or higher; **Medieval Studies**: any course numbered 200 or higher; **Philosophy**: any course numbered 200 or higher; **Religion**: any course numbered 200 or higher; **Spanish**: any course numbered 225 or higher; Theatre 210; a **First-Year Seminar**. Students must successfully complete a course in at least 3 of these prefixes.

**C. Mathematics** - Students are required to demonstrate competence in basic algebra by scoring at level 2, 3, or 4 on a placement test (See section on Placement Tests) or successfully completing MATH 100 (or its equivalent). Lycoming Scholars are also required to pass MATH 112, 115, 123, 128, 129, 130, 140, 214, or 216. The requirement of competence in basic algebra must be met before the end of the fourth semester or within one year of entry, whichever is later. Students who have not met this competency requirement before the final semester of the applicable time period must register for MATH 100 in that semester.

**D. Modern or Ancient Language Studies** - Lycoming Scholars are required to pass a course at the 111 level or higher in **French, German, Greek, Hebrew, Latin, Spanish, or another language approved for transfer**. (See section on Placement Tests.) International students whose native language is not English and who took at least one year of high school in their native language may either 1) fulfill the language requirement in Modern or Ancient Languages, 2) take a fourth writing focused (“W”) course, or 3) take one course in English numbered 200 or above. If a student chooses the last option, the course may not also be used to fulfill a Humanities or Fine Arts Distribution Requirement. International students who meet the criteria and wish to use option 2 or 3 to satisfy the language requirement should contact the Registrar’s Office.

**E. Natural Sciences** - Lycoming Scholars are required to pass two courses from the following: **Astronomy/Physics**: any course numbered 111 or higher; **Biology**: any course numbered 110 or higher; **Chemistry**: any course numbered 122 or higher; **Environmental Science**: any course numbered 200 or higher; **Exercise Science**: any course numbered 110 or higher; **Neuroscience**: any course numbered 200 or higher; a **First-Year Seminar**. One course must incorporate a laboratory component.

**F. Social Sciences** - Lycoming Scholars are required to pass two courses from the following: **Anthropology and Sociology**: any course numbered 200 or higher, except ANTH 448 or SOC 448; **Archaeology**: any course numbered 200 or higher; **Criminal Justice and Criminology**: any course numbered 200 or higher, except 448/449; **Economics**: any course numbered 110 or higher; **Legal Studies**: any course numbered 200 or higher; **Political Science**: any course numbered 200 or higher; **Psychology**: PSY 110 or any other PSY course numbered 200 or higher; a **First-Year Seminar**.

- **Complete the Writing Program**

The Lycoming College Writing Program has been developed in response to the conviction that writing skills promote intellectual growth and are a hallmark of the



educated person. The program has therefore been designed to support six interrelated goals:

1. The Rhetorical Situation
  - i. Students should demonstrate a thorough understanding of the audience, purpose, and context of a variety of academic and professional texts.
2. Content Development
  - i. Students should develop written content appropriate to academic and professional rhetorical situations they are likely to encounter.
3. Information Literacy
  - i. Students should integrate and appropriately cite relevant, credible, and compelling evidence into writing projects.
  - ii. Students should conduct research using library resources and information technologies.
4. Style and Mechanics
  - i. Students should write clearly and fluently according to genre-specific grammar and formatting conventions.
5. Process
  - i. Students will approach writing as a process that includes pre-writing, drafting, revision, and editing.
6. Write to Learn
  - i. Students will use writing as a mode of learning, enabling them to better understand their chosen discipline and to connect their learning experiences across multiple disciplines.
  - ii. Students write in a variety of contexts and receive faculty guidance and reinforcement in each of the program's required courses.

### **Program Requirements**

Students must successfully complete the following writing courses:

1. ENGL 106 (Composition)
2. Three courses designated as writing-focused, (W Courses) during the semester when the student takes the course.

The following policies apply:

- Successful completion of ENGL 106 is a prerequisite for enrollment in writing focused courses.
  - All "W" courses are numbered 200 or above.
  - One of the "W" courses must be in the major (or one of the majors) or, with departmental approval, from a related department. All three cannot carry the same prefix (e.g. PHIL, ENGL, ACCT, etc.).
- **Complete the Cultural Diversity Program, with two courses, one in Global Diversity and one in Domestic Diversity**

The Lycoming College Cultural Diversity requirement confirms the College's commitment to celebrating the human differences implicit in a liberal arts education. It helps to prepare

students for a global environment and a diverse America. In order to qualify as a course which satisfies the requirement in cultural diversity, the course must deal substantially, primarily, or exclusively with cultural diversity, in such a way as to provide students with cultural perspectives (either historical or contemporary) other than the predominant Anglo-American one in the U.S.

**Global Diversity** courses will help students understand the world beyond the U.S. borders. These courses will be designated with a “G.”

**Domestic Diversity** courses will help students understand one or more non-dominant groups within the U.S., dealing with issues such as race, gender, social class, religion, political ideology, sexual orientation, or any combination thereof. These courses will be designated with a “D.”

A course selected to fulfill the Global or Domestic Cultural Diversity requirement may also be used to satisfy a Distribution Requirement. International May term courses (marked with a G on course schedules), a semester of college-approved Study Abroad, or international summer programs may be used to fulfill the Global Diversity requirement.

- **Complete an Enhanced Academic Experience**

Enhanced Academic Experiences are designed to promote intellectual, professional, and personal development for students to prepare for life after Lycoming. While each student is required to complete at least one EAE, students are encouraged to pursue and complete multiple EAEs to better prepare, launch, and sustain graduates into careers of significance and lives of meaning. Individual categories of EAEs are able to overlap with the requirements of any majors or minors and within the Distribution system.

The Center for Enhanced Academic Experiences can assist students and academic advisors with questions about the EAE requirement, including reviewing options for programs that require applications processes. Students are encouraged to visit the CEAE’s website and SharePoint site for more information on EAEs.

The Enhanced Academic Experience may be satisfied by successful completion of:

- a second major
- a minor
- Lycoming Scholars Program
- Management Scholars Program of the Institute for Management Studies
- at least 20 credits in ECED, EDUC, SPLED, and/or PSY toward a specific teacher certification program
- 150 Credit Accounting track
- Both completing either MATH 333 or MATH 441, and attempting either Actuarial Exam P or Actuarial Exam FM. This option is only available to students who have not completed a major in actuarial science.
- a Departmental Honors Project

- an internship, including those completed within a practicum, earning a minimum of four credits
- a non-credit internship—typically of at least 350 hours—through the Clean Water Institute summer internship program, the WISE program, or any other college-established non-credit internship program.
- the Center for Enhanced Academic Experiences curriculum via successful completion of CEAE 200, 201, and 220
- the ROTC program, as evidenced by successful completion of the two 300-level MLSC course sequence
- an Emergency Medical Technician (EMT) training program
- a cooperative program (.see COOPERATIVE PROGRAMS)
- an experiential course of study/program involving travel of more than seven continuous days, inside or outside of the US. These experiential travel courses must be taken either for credit or as an audit and are broadly inclusive of study abroad semesters, summer programs, archaeological field schools, faculty-led travel courses, and institutional partnership programs.

Upon completion of any of the above items, verification of the Enhanced Academic Experience will be automatically applied to the student's General Education program.

The Enhanced Academic Experience may also be satisfied through the following three items; however, in order to receive verification of completion, students must submit required paperwork through the Center for Enhanced Academic Experiences.

- a competitive regional or national research program or residency
- faculty-sponsored collaborative research in which the expectation of the research outcome could be sole authorship by the student, co-authorship between the faculty member and student, or acknowledgement by the faculty member of the student's significant contributions to the research. The focus of this EAE is on process, not product. Faculty-sponsored collaborative research can take several forms—including but not limited to—Haberberger Fellowships, Chemistry Research Fellowships, Summer Research Grant Scholarships, and research projects under the independent study mechanism. Both the faculty sponsor and the department chair must approve EAE eligibility before submitting the documentation to the Center for Enhanced Academic Experiences for final verification.
- a presentation, performance, exhibition, screening, or publication in a regional, national, or international juried or refereed competition, conference, or journal, including a refereed poster session at an undergraduate regional or national academic conference

Students may also satisfy the Enhanced Academic Experience requirement through a pre-approved non-credit internship. These internships require the following:

- A pre-approved non-credit summer internship should include at least 200 hours of work, a clear set of internship responsibilities and expected outcomes, journal assignments with a member of the Center for Enhanced Academic Experiences' career advising team, and an evaluation by the internship site supervisor. These non-credit internships must have

pre-approval through the Center for Enhanced Academic Experiences before the commencement of the internship.

## **THE MAJOR**

Students are required to complete a series of courses in one departmental or interdisciplinary (established or individual) major. Specific course requirements for each major offered by the College are listed in the curriculum section of this catalog. Every major at the College includes a capstone experience appropriate to the discipline that addresses learning outcomes for the major. Students must earn a 2.00 or higher cumulative grade point average in the major. Students must declare a major by the beginning of their junior year. Departmental and established interdisciplinary majors are declared in the Office of the Registrar, whereas individual interdisciplinary majors must be approved by the Curriculum Development Committee. Students may complete more than one major, each of which will be recorded on the transcript. Students may be removed from major status if they are not making satisfactory progress in their major. This action is taken by the Provost and Dean of the College upon the recommendation of the department, coordinating committee (for established interdisciplinary majors), or Curriculum Development Committee (for individual interdisciplinary majors). The decision of the Provost and Dean of the College may be appealed to the Academic Standards Committee by the student involved or by the recommending department or committee. Students pursuing majors in two different degrees are subject to the policy for dual degrees listed under the Academic Program.

### **Individual Interdisciplinary Majors**

Students may design majors that are unique to their needs and objectives and that combine course work in more than one department. These majors are developed in consultation with students' faculty advisors and with a panel of faculty members from each of the sponsoring departments. The applications are considered by the Curriculum Development Committee. The major normally consists of at least 10 courses, at least six of which are at the 300 or 400 level. No more than two courses used to satisfy Distribution Requirements may be included in the major. Examples of individual interdisciplinary majors are: Biopsychology, North American Archaeology, Religion and Marketing, Women and the Legal System. Applications are available in the Office of the Registrar.

## **THE MINOR**

The College awards two kinds of minors, departmental and interdisciplinary, in recognition of concentrated course work in an area other than the student's major. When students complete a minor, the title will be indicated on their official transcript. Minor requirements must be completed at the time of graduation.

All minors are subject to the following limitations:

- A minor must include at least two courses which are not counted in the student's major.
- A student may receive at most two minors.

- Students with two majors may receive only one minor; students with three majors may not receive a minor.
- Students may not receive a minor in their major (e.g. an Astronomy major with an Astronomy minor is not permitted). Additional prohibited program combinations are listed in the Programs of Study chart.
- In order to receive a minor, the average GPA for all courses that count toward the minor must be at least 2.00.
- Courses taken P/F may not be counted toward a minor. Students must declare their intention to minor by completing a form available in the Office of the Registrar.

**The following programs are available:**

| Program of Study                         | Major |      | Minor | Cannot pair major with...                                                            | Cannot pair minor with...           |
|------------------------------------------|-------|------|-------|--------------------------------------------------------------------------------------|-------------------------------------|
|                                          | B.A.  | B.S. |       |                                                                                      |                                     |
| <b>2D Animation</b>                      |       |      | ×     |                                                                                      |                                     |
| <b>3D Animation</b>                      | ×     |      | ×     |                                                                                      |                                     |
| <b>Accounting</b>                        | ×     |      | ×     |                                                                                      |                                     |
| <b>Accounting (150 credits)</b>          | ×     |      |       |                                                                                      |                                     |
| <b>Acting</b>                            | ×     |      | ×     |                                                                                      | Directing or Musical Theatre majors |
| <b>Actuarial Science</b>                 |       | ×    |       | Mathematics minor                                                                    |                                     |
| <b>American History</b>                  |       |      | ×     |                                                                                      | History major                       |
| <b>American Politics</b>                 |       |      | ×     |                                                                                      |                                     |
| <b>American Studies</b>                  | ×     |      | ×     |                                                                                      |                                     |
| <b>Anthropology</b>                      | ×     |      | ×     |                                                                                      |                                     |
| <b>Applied &amp; Engineering Physics</b> |       | ×    |       | Physics minor                                                                        |                                     |
| <b>Applied Computer Science</b>          | ×     |      |       | Computational Science or Computer Science minors                                     |                                     |
| <b>Archaeology</b>                       | ×     |      | ×     |                                                                                      |                                     |
| <b>Art History</b>                       | ×     |      | ×     |                                                                                      |                                     |
| <b>Astronomy</b>                         | ×     |      | ×     |                                                                                      | Astrophysics major                  |
| <b>Astrophysics</b>                      |       | ×    |       | Astronomy or Physics minors                                                          |                                     |
| <b>Biblical Languages</b>                |       |      | ×     |                                                                                      |                                     |
| <b>Biblical Studies</b>                  | ×     |      | ×     |                                                                                      |                                     |
| <b>Biochemistry</b>                      |       | ×    |       | Biology, Biomedical Sciences, Cell & Molecular Biology, Chemistry, or Ecology majors |                                     |
| <b>Biology</b>                           | ×     | ×    | ×     | Biomedical Sciences, Biochemistry, Cell &                                            |                                     |

| Program of Study                         | Major |      | Minor | Cannot pair major with...                                                      | Cannot pair minor with...      |
|------------------------------------------|-------|------|-------|--------------------------------------------------------------------------------|--------------------------------|
|                                          | B.A.  | B.S. |       |                                                                                |                                |
|                                          |       |      |       | Molecular Biology, or Ecology majors                                           |                                |
| <b>Biomedical Sciences</b>               | ×     | ×    |       | Biology, Biochemistry, Cell & Molecular Biology, or Ecology majors             |                                |
| <b>Biophysics</b>                        |       | ×    |       | Physics minor                                                                  |                                |
| <b>Business Administration</b>           | ×     |      | ×     | Finance major                                                                  |                                |
| <b>Cell &amp; Molecular Biology</b>      | ×     | ×    |       | Biology, Biomedical Sciences, Biochemistry, or Ecology majors                  |                                |
| <b>Chemistry</b>                         | ×     | ×    | ×     | Biochemistry major                                                             |                                |
| <b>Classical Studies</b>                 |       |      | ×     |                                                                                |                                |
| <b>Communication &amp; Media Studies</b> | ×     |      | ×     |                                                                                |                                |
| <b>Computational Physics</b>             |       | ×    | ×     | Physics minor                                                                  |                                |
| <b>Computational Science</b>             |       |      | ×     |                                                                                | Applied Computer Science major |
| <b>Computer Science</b>                  |       |      | ×     |                                                                                | Applied Computer Science major |
| <b>Creative Writing</b>                  | ×     |      |       | Literature major, Literature minor, or Writing minor                           |                                |
| <b>Criminal Justice</b>                  | ×     |      | ×     | Criminology major                                                              | Criminology minor              |
| <b>Criminology</b>                       | ×     |      |       | Criminal Justice major or minor                                                |                                |
| <b>Data Science</b>                      |       | ×    | ×     |                                                                                |                                |
| <b>Design &amp; Technical Theatre</b>    | ×     |      | ×     | Stage Management minor                                                         |                                |
| <b>Directing</b>                         | ×     |      |       | Performance minor                                                              |                                |
| <b>Domestic Public Policy</b>            |       |      | ×     |                                                                                |                                |
| <b>Ecology</b>                           | ×     | ×    |       | Biology, Biomedical Sciences, Biochemistry, or Cell & Molecular Biology majors |                                |
| <b>Economics</b>                         | ×     |      | ×     | Quantitative Economics minor                                                   |                                |
| <b>Energy Studies</b>                    |       |      | ×     |                                                                                |                                |
| <b>Entrepreneurship</b>                  |       |      | ×     |                                                                                |                                |
| <b>Environmental Science</b>             |       | ×    | ×     | Environmental Studies major                                                    | Environmental Studies minor    |
| <b>Environmental Studies</b>             | ×     |      | ×     | Environmental Science major                                                    | Environmental Science minor    |
| <b>Ethics and Political Philosophy</b>   |       |      | ×     |                                                                                |                                |
| <b>European History</b>                  |       |      | ×     |                                                                                | History major                  |

| Program of Study                      | Major |      | Minor | Cannot pair major with...                   | Cannot pair minor with... |
|---------------------------------------|-------|------|-------|---------------------------------------------|---------------------------|
|                                       | B.A.  | B.S. |       |                                             |                           |
| Exercise Science                      | ×     | ×    | ×     |                                             |                           |
| Film and Video Arts                   | ×     |      | ×     |                                             |                           |
| Film Studies                          |       |      | ×     |                                             |                           |
| Finance                               | ×     |      |       | Business Administration major               |                           |
| French & Francophone Studies          | ×     |      | ×     |                                             |                           |
| Gender, Sexuality and Women's Studies | ×     |      | ×     |                                             |                           |
| German                                | ×     |      | ×     |                                             |                           |
| Global History                        |       |      | ×     |                                             | History major             |
| Graphic Design                        | ×     |      | ×     |                                             |                           |
| History                               | ×     |      | ×     | American History or European History minors |                           |
| History of Philosophy                 |       |      | ×     |                                             |                           |
| Human Services                        |       |      | ×     |                                             |                           |
| International Public Policy           |       |      | ×     |                                             |                           |
| International Studies                 | ×     |      |       |                                             |                           |
| Latin American Studies                |       |      | ×     |                                             |                           |
| Legal Studies                         | ×     |      | ×     |                                             |                           |
| Literature                            | ×     |      | ×     | Creative Writing major or Writing minor     | Creative Writing major    |
| Managerial Economics                  | ×     |      |       | Economics or Quantitative Economics minors  |                           |
| Mathematical Finance                  | ×     |      |       |                                             |                           |
| Mathematics                           | ×     |      | ×     |                                             |                           |
| Medieval Studies                      | ×     |      | ×     |                                             |                           |
| Multiculturalism                      |       |      | ×     |                                             |                           |
| Music                                 | ×     |      | ×     |                                             |                           |
| Musical Theatre                       | ×     |      |       | Performance minor                           |                           |
| Neuroscience                          | ×     | ×    | ×     |                                             |                           |
| Painting                              | ×     |      | ×     |                                             |                           |
| Performing Arts Management            | ×     |      |       |                                             |                           |
| Philosophy                            | ×     |      | ×     |                                             |                           |
| Philosophy and Law                    |       |      | ×     |                                             |                           |

| Program of Study                   | Major |      | Minor | Cannot pair major with...          | Cannot pair minor with...                                                                             |
|------------------------------------|-------|------|-------|------------------------------------|-------------------------------------------------------------------------------------------------------|
|                                    | B.A.  | B.S. |       |                                    |                                                                                                       |
| <b>Philosophy and Science</b>      |       |      | ×     |                                    |                                                                                                       |
| <b>Photography</b>                 | ×     |      | ×     |                                    |                                                                                                       |
| <b>Physics</b>                     | ×     | ×    | ×     |                                    | Astronomy, Astrophysics, Biophysics, Computational Physics, or Applied and Engineering Physics majors |
| <b>Political Science</b>           | ×     |      | ×     |                                    |                                                                                                       |
| <b>Printmaking</b>                 | ×     |      |       |                                    |                                                                                                       |
| <b>Psychology</b>                  | ×     | ×    | ×     |                                    |                                                                                                       |
| <b>Quantitative Economics</b>      | ×     |      | ×     | Economics minor                    |                                                                                                       |
| <b>Religion</b>                    | ×     |      | ×     |                                    |                                                                                                       |
| <b>Screenwriting</b>               |       |      | ×     |                                    |                                                                                                       |
| <b>Sculpture</b>                   | ×     |      | ×     |                                    |                                                                                                       |
| <b>Social and Economic Justice</b> |       |      | ×     |                                    |                                                                                                       |
| <b>Sociology</b>                   | ×     |      | ×     |                                    |                                                                                                       |
| <b>Spanish</b>                     | ×     |      | ×     |                                    |                                                                                                       |
| <b>Sport Management</b>            | ×     |      |       |                                    |                                                                                                       |
| <b>Stage Management</b>            | ×     |      |       | Design and Technical Theatre minor |                                                                                                       |
| <b>Studio Art</b>                  | ×     |      |       |                                    |                                                                                                       |
| <b>World Politics</b>              |       |      | ×     |                                    |                                                                                                       |
| <b>Writing</b>                     |       |      | ×     |                                    | Creative Writing major                                                                                |

## PRE-PROFESSIONAL PROGRAMS

### Preparation for Educational Professions

Lycoming College believes that the liberal arts provide the best preparation for future teachers. Thus, all education students complete a liberal arts major in addition to the Lycoming College Teacher Certification requirements. Students can be certified in early childhood, English as a second language program specialist, secondary (biology, chemistry, English, mathematics, physics, social studies), PK-12 (art, business/computer and information technology, modern languages, music, and special education).

All teacher education programs are approved by the Pennsylvania Department of Education. Pennsylvania certificates are recognized in most other states either through reciprocal agreements or by transcript evaluation. For more detailed information, see the Education Department listing.



### **Preparation for Health Professions**

Students who are interested in a career in health and medicine (such as allopathic or osteopathic medicine, dentistry, occupational therapy, optometry, pharmacy, physical therapy, physician assistant, podiatry, or veterinary medicine) will find a wide array of educational and professional experiences at Lycoming College. The pathways to health professions are supported through a number of majors, including but not limited to biomedical sciences, biology, biochemistry, chemistry, exercise science, neuroscience, and psychology. In addition to close academic advising with your selected major, health professional students are also supported by the members of the Health Professions Advisory Committee (HPAC) and the CEAE's health professions career advisor, with membership found at <https://www.lycoming.edu/pre-medical/faculty.aspx>. Extensive resources for health professions students are maintained by HPAC via their SharePoint site: <https://lycomingcollege.sharepoint.com/sites/center-for-health-professions>.

Students interested in medical school should review the 4+4 Baccalaureate and Doctor of Osteopathic Medicine Program information found within the Cooperative Program section.

### **Preparation for Legal Professions**

Lycoming offers a strong preparation for students interested in law as a profession. Students interested in a career in the legal field should make their intentions known by contacting a member of the Legal Professions Advisory Committee, including Drs. Susan Achury and Jacob Berger. Admission to law school is not predicated upon a particular major or area of study; rather, a student is encouraged to design a course of study (traditional or interdisciplinary major) which is of personal interest and significance. While no specific major is recommended, there are certain skills of particular relevance to the pre-law student: symbolic logic (via PHIL 225), clear writing, analytical thinking, and reading comprehension. These skills should be developed during the undergraduate years. Students are also encouraged to consider courses within the Legal Studies major or minor. Pre-law students are encouraged to enroll in an internship or practicum, particularly CEAE 300 and can learn more about these opportunities through the Center for Enhanced Academic Experiences. <https://lycomingcollege.sharepoint.com/sites/CEAE>

### **Preparation for Theological Professions**

Students preparing to investigate religious vocations or attend a theological seminary should examine the suggestions set down by the Association of Theological Schools. It is recommended that students pursue a broad program in the liberal arts with a major in the humanities or social sciences. Students preparing for a career in religious education should major in Religion or Biblical Studies and take elective courses in psychology, education, and sociology. This program of study will qualify students to work as educational assistants or directors of religious education after graduate study in a theological seminary.

Students should register with Theological Pursuits and Callings (TPAC), Dr. Steven Johnson, Chair, during their first semester. TPAC acts as a “center” for students, faculty, and clergy to discuss the needs of students who want to prepare themselves for the ministry, religious education, advanced training in religion, or related vocations. It may also help coordinate internships for students who desire practical experience in the parish ministry or related areas.

## COOPERATIVE PROGRAMS

Lycoming has developed cooperative programs to provide students with opportunities to extend their knowledge, abilities, and talents in selected areas through access to the specialized academic programs and facilities of other colleges, universities, academies, and hospitals. Although thorough advising and curricular planning are provided for each of the cooperative programs, admission to Lycoming and registration in the program of choice do not guarantee admission to the cooperating institution. The prerogative of admitting students to the cooperative aspect of the program rests with the cooperating institution. Students who are interested in a cooperative program should contact the coordinator during the first week of the first semester of their enrollment at Lycoming. This is necessary to plan their course programs in a manner that will ensure completion of required courses according to the schedule stipulated for the program. All cooperative programs require special coordination of course scheduling at Lycoming.

### **DeSales University Accelerated Bachelor of Science in Nursing (ABSN) Program**

Faculty Advisor: Dr. David Andrew

Lycoming College has an ongoing partnership with DeSales University to provide qualifying graduating students admission to their 15-month Accelerated Bachelor of Science in Nursing (BSN) program. Students must have a cumulative GPA of 2.75 or higher and meet the admission requirements of the DeSales ABSN program, which can largely be met by completing several different majors, including biomedical sciences, biochemistry, and chemistry. Students interested in pursuing this program should contact the Center for Enhanced Academic Experiences or the Health Professions Advisory Committee (HPAC) coordinator by the end of their first year.

### **Geisinger College of Health Sciences Premedical Scholars Program (MD Affiliation)**

Faculty Advisor: Dr. David Andrew

Lycoming College maintains a formal affiliation with Geisinger College of Health Sciences that offers qualified students entry into a Premedical Scholars Program for the MD degree. This program provides a guaranteed interview opportunity at Geisinger's School of Medicine for students who meet defined academic, professional, and application benchmarks, while still participating in the traditional application process. The affiliation represents a significant advantage in a competitive admissions landscape by recognizing high-achieving students and strengthening their candidacy through structured advising and institutional collaboration. Students interested in this program should contact the Coordinator of Health Professions Advising, Dr. David Andrew, no later than end of their first year and become a member of the Lyco to White Coat Program.

### **Lake Erie College of Osteopathic Medicine (LECOM) Doctor of Osteopathic Medicine (DO) Early Acceptance Program (EAP)**

Faculty Advisor: Dr. David Andrew

Through its affiliation with LECOM, Lycoming College offers a highly structured Early Acceptance Program (EAP) for the Doctor of Osteopathic Medicine degree. Qualified students may earn provisional early acceptance to medical school, in some cases as early as high school or during their early undergraduate years, with LECOM conditionally reserving seats for

successful candidates. This 4+4 pathway provides a clear and competitive advantage by securing a future place in medical school contingent on meeting academic and professional standards. Students interested in this program should contact the Coordinator of Health Professions Advising, Dr. David Andrew, no later than end of their first year and become a member of the Lyco to White Coat Program.

**Lake Erie College of Osteopathic Medicine (LECOM) School of Dental Medicine (DMD)  
Early Acceptance Program (EAP)**

Faculty Advisor: Dr. David Andrew

Lycoming College's affiliation with LECOM School of Dental Medicine provides a structured Early Acceptance Program (EAP) that allows qualified students to receive provisional acceptance to dental school prior to completing their undergraduate degree. Up to five Lycoming students annually may matriculate through this 4+4 pathway, with LECOM conditionally reserving seats for those who meet program benchmarks. This affiliation offers a distinct advantage by combining early assurance with a clear academic and professional roadmap to dental school. Students interested in this program should contact the Coordinator of Health Professions Advising, Dr. David Andrew, no later than end of their first year and become a member of the Lyco to White Coat Program.

**Lake Erie College of Osteopathic Medicine (LECOM) School of Podiatric Medicine (DPM)  
Early Acceptance Program (EAP)**

Faculty Advisor: Dr. David Andrew

Through its affiliation with LECOM, Lycoming College offers an Early Acceptance Program (EAP) for the Doctor of Podiatric Medicine degree. Qualified students may receive provisional early acceptance with conditionally reserved seats in this specialized medical program, with up to two Lycoming students matriculating annually. This 4+4 pathway provides a clear and advantageous route into podiatric medicine while emphasizing strong academic performance and professional development. Students interested in this program should contact the Coordinator of Health Professions Advising, Dr. David Andrew, no later than end of their first year and become a member of the Lyco to White Coat Program.

**Lake Erie College of Osteopathic Medicine (LECOM) School of Pharmacy (PharmD)  
Early Acceptance Program (EAP)**

Faculty Advisor: Dr. David Andrew

Lycoming College maintains an affiliation with LECOM School of Pharmacy that offers a flexible Early Acceptance Program (EAP) for the Doctor of Pharmacy degree. Qualified students may receive provisional early acceptance into pharmacy school with multiple pathway options (4+4 or 3+4), allowing for both traditional and accelerated routes to the PharmD. LECOM conditionally reserves seats for accepted students, providing both security and flexibility in planning a pharmacy career. Students interested in this program should contact the Coordinator of Health Professions Advising, Dr. David Andrew, no later than end of their first year and become a member of the Lyco to White Coat Program.

## **Medical Laboratory Science**

Faculty Advisor: Dr. Jeffrey Newman

Students desiring a career in medical laboratory science (medical technology) may enter an accredited one-year program after graduation, or they may complete the cooperative program. Students electing the cooperative program normally study for three years at Lycoming, during which time they complete 96 credits, including the general education curriculum, a modified major, and requirements of the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). The current requirements of the NAACLS are: four courses in chemistry (one of which must be either organic or biochemistry), four courses in biology (including courses in microbiology and immunology), and one course in mathematics.

Students in the cooperative program usually major in biology, following a modified major of six courses that includes the introductory sequence (BIO 110 and BIO 111), Genetics (BIO 222), Medical Microbiology (BIO 324), Human Physiology (BIO 323), and Immunology (BIO 347). The cooperative program requires successful completion of a one-year internship at a hospital accredited by the American Medical Association. Lycoming is affiliated with the following accredited hospitals: UPMC Susquehanna (Williamsport), UPMC Altoona, and WellSpan Health York. Students in the cooperative program receive credit at Lycoming for each of eight courses in biology and chemistry successfully completed during the clinical internship. Successful completion of the Certification Examination is not considered a graduation requirement at Lycoming College. Students interested in pursuing the cooperative program should contact the Faculty Advisor by the end of their first year.

## **Pennsylvania State Police Academy Internship**

Faculty Advisor: Dr. Kerry Richmond

Lycoming College has a partnership with the Pennsylvania State Police. Lycoming College students who have been accepted into the Pennsylvania State Police Academy may enroll in the Academy during the spring semester of their senior year or defer until the summer or fall. Upon completion of the Academy, students may transfer in up to 16 elective credits from the Academy to count towards their Lycoming College degree requirements. This opportunity is open to all students in all majors. For those students interested in pursuing this path, mentoring by the Pennsylvania State Police will be available starting in their first year and through graduation to provide assistance with the application process.

## **Philadelphia College of Osteopathic Medicine 4+4 Baccalaureate and Doctor of Osteopathic Medicine Program**

Faculty Advisor: Dr. David Andrew

Qualified Lycoming College students can receive preferred admission to Philadelphia College of Osteopathic Medicine (PCOM) for its Doctor of Osteopathic Medicine degree program. The PCOM-Lycoming 4+4 program includes PCOM holding up to three spots annually for Lycoming College graduates who meet entrance requirements and are approved by the admissions committee at the private, not-for-profit medical school in Philadelphia. The PCOM-Lycoming College 4+4 program requires student candidates earn a 3.50 cumulative and science

cumulative grade point average through the end of their junior year at Lycoming College and score a 504 composite and at least a 126 on each section of the Medical College Admissions Test. Students interested in pursuing this program should contact the Coordinator of Health Professions Advising, Dr. David Andrew, no later than the end of their first year of study at Lycoming college and strongly consider joining the student Pre-Health Society.

### **Rochester Institute of Technology 4+1 MBA**

Faculty Advisor: Dr. Georg Grassmueck

Through an agreement with the Saunders College of Business at Rochester institute of Technology (RIT), business majors at Lycoming can work toward a Master of Business Administration while also earning a bachelor's degree. Through this 4+1 agreement, students can earn their advanced degree after just one year. Students work one-on-one with the faculty coordinator at RIT and Lycoming to select courses to prepare them for the MBA program. Once accepted into the MBA program, students may be able to waive some graduate-level courses. Also, Lycoming students will save at least 30% on tuition and one student will be eligible for a 50% scholarship each year.

### **Saint Vincent College Master of Science in Criminology**

Faculty Advisor: Dr. Kerry Richmond

Since 2019, Lycoming College has had a memorandum with Saint Vincent College for the purpose of facilitating graduates of Lycoming in undertaking the Master of Science in Criminology Program at Saint Vincent. A minimum GPA of 3.0 is required for acceptance into the program. Graduates of Lycoming who have successfully completed PHIL 318, CJCR 300, and either CJCR 445 or 441 at Lycoming will be afforded six advance placement credits towards the completion of the 30-credit program at Saint Vincent. Any Lycoming student who does not complete PHIL 318 but who successfully completes the Saint Vincent course designated CLS 504 (Ethical Decisions and Dilemmas in Criminal Justice) in the Summer of their undergraduate years, will be eligible for the advance placement credit described above.

Graduates of Lycoming who are accepted into the Master of Science in Criminology Program at Saint Vincent will receive a 10% tuition discount.

### **University of York UK Masters Programs in Archaeology, Environment and Geography**

Faculty Advisor: Dr. Jessica Munson

Lycoming College students have the opportunity to pursue a Master's degree (MA or MSc) through a partnership with the University of York (UK). This partnership offers a direct path to 12-month master's degree programs in several specialized areas of study in Archaeology, Cultural Heritage Management, Conservation, and Museum Studies as well as programs offered in York's Department of Environment and Geography, including Sustainability Studies, Environmental Science, and other related interdisciplinary programs. Available to students who obtain a BA or BS from Lycoming College in any major who meet the University of York's entrance requirements. Admitted students from Lycoming College will receive a 25% tuition fee discount (approx. £6,000) for one year of postgraduate study.

## **Washington University Dual Degree in Engineering**

Faculty Advisor: Dr. Emily Wilson

Lycoming College and Washington University in St. Louis are partnered in a 3+3 Dual Degree Engineering Program, wherein students earn a bachelor's from Lycoming College, a Bachelors from the WashU's McKelvey School of Engineering, and an ABET-accredited Master's from WashU.

As an affiliate member of the Washington University Dual Degree Engineering Program, Lycoming students can earn a foundational liberal arts and sciences education at Lycoming before moving on to pursue two additional degrees (B.S. and M.S.) in engineering from McKelvey Engineering at WashU, all in just 6 years. WashU will admit all Lycoming students who qualify for the program by earning a 3.25 cumulative GPA and 3.25 STEM GPA at the end of the junior or senior year. Admission requirements also include completion of pre-engineering coursework in chemistry, computer science, data science, mathematics, physics, and biology, as well as a number of humanities and social sciences disciplines. Depending on whether a student opts for the 3+3 program or the 4+3 program, applications must be submitted to WashU during either their third or fourth year at Lycoming.

## **Widener Commonwealth University 3+3 Baccalaureate and Juris Doctorate Degree Program**

Faculty Advisor: Dr. Susan Achury Plaza

Lycoming College and Widener University Commonwealth Law School together offer a 3+3 law degree program that provides students the opportunity to earn both a bachelor's degree and a juris doctorate degree in a total of six years.

Students interested in pursuing a law degree at Widener Law Commonwealth must:

- maintain at least a 3.0 grade point average;
- major in either philosophy or gender, sexuality, and women's studies OR have a significant number of advanced placement credits prior to matriculation in order to be able to complete majors with increased numbers of required courses; and
- complete all General Education and major requirements as well as a total of 98 credits by the end of the junior year, except for those requirements that may be fulfilled by a course at Widener; and
- enter Widener with a total of 98 credits completed.

Students complete the final 30 credits toward the 128-credit Lycoming degree requirement during their first year at Widener (with the majority of those credits transcribed as elective credits).

With respect to Widener University Commonwealth Law School entrance requirements, students must also:

- earn a law school admission test score and Lycoming GPA at or above the median of Widener's prior year entering class;

- take the law school admission test no later than February of their junior year; and
- apply to Widener Law Commonwealth by March 31 of their junior year.

## ROTC

**U.S. Army Reserve Officers Training Corps Program (ROTC)** – The program provides an opportunity for Lycoming students to enroll in the Army Reserve Officers' Training Corps (ROTC). Lycoming notes enrollment in and successful completion of the program on student transcripts. Military Science is a four-year program divided into a basic course given for first-year and sophomore students and an advanced course given during the junior and senior years. The Army ROTC Basic Course requires no commitment to the military and comprises four courses at the 100- and 200-level primarily taught at Pennsylvania College of Technology with an option to take the courses at Bucknell University. The Army ROTC Advanced Course requires a military commitment and comprises four courses at the 300- and 400-level primarily taught at Bucknell University. The content and methods of the Advanced Course comprise the minimum curriculum that an individual must complete in order to be commissioned.

The U.S. Army Reserve Officers' Training Corps (ROTC) program is offered to Lycoming College students in cooperation with Bucknell University. For more information, visit <https://www.lycoming.edu/academics/rotc.aspx> or <http://www.lockhaven.edu/rotc/> <https://www.bucknell.edu/azdirectory/rotc>.

## THE HONORS PROGRAM

### The Lycoming Scholars Program

The Lycoming College Scholars Program is a special program designed to meet the needs and aspirations of highly motivated students of superior intellectual ability. Lycoming Scholars satisfy the College's General Education requirements with more challenging Distribution courses than students not in the Lycoming Scholars Program are required to complete. (Substitutions to the General Education requirements for Lycoming Scholars can be made only by successful application to the Committee on Academic Standards with a supporting signature by the Lycoming Scholars Council Director in place of the department chair.) Lycoming Scholars also participate in special interdisciplinary seminars and in an independent study culminating in a senior presentation. Lycoming Scholars may audit a fifth course each semester at no additional cost. In addition, Lycoming Scholars may be exempted from the usual limitations on independent studies by the Individual Studies Committee.

Students are admitted to the program by invitation of the Lycoming Scholars Council, the group which oversees the program. The Council consists of a director and four other faculty members selected by the Provost and Dean of the College and four students elected by current scholars. The guidelines governing selection of new scholars are flexible; academic excellence, intellectual curiosity, and creativity are all taken into account. Students who wish to participate in the Lycoming Scholars Program but are not invited may petition the Lycoming Scholars Council for consideration. Petitioning students should provide the Lycoming Scholars Council with letters of recommendation from Lycoming faculty and a transcript to be sent to the director of the Lycoming Scholars Program.

To remain in the program, students must maintain a cumulative GPA of 3.5 or better. Students who drop below this average will be placed on Lycoming Scholars Program probation for one semester. After one semester, they will be asked to leave the program if their GPA has not returned to 3.5 or higher.

To graduate as a Lycoming Scholar, a student must successfully complete all graduation requirements, as well as five semesters of Lycoming Scholars Seminars, and the two-semester, non-credit Senior Lycoming Scholars Seminar in which they present the results of their required independent study project. They must achieve at least a 3.25 cumulative GPA. In addition, the following General Education requirements must be met. Any accepted transfer course taken pre-matriculation that would satisfy a standard Distribution Requirement will also satisfy Distribution in the Lycoming Scholars program.

## **Departmental Honors**

Honors projects are normally undertaken only in a student's major or program of study and are available only to exceptionally well-qualified students who have a solid background in the area of the project, are capable of considerable self-direction, have an overall GPA of at least 3.00, and a GPA in the major or program in which the honors project is undertaken of at least 3.50. Students with a GPA of 3.0 or above in the major in which the honors project is undertaken may appeal to the Committee on Academic Standards for special permission to undertake an Honors project.

Students with both overall and major or program GPA of 3.50 or higher who are pursuing research-oriented departmental honors projects are strongly encouraged to also apply for the tuition-scholarship earning Haberberger Fellowship Program. The GPA requirement for the Haberberger Fellowship Program may not be appealed. More information about the Haberberger Fellowship Program is available through the Center for Enhanced Academic Experiences, and applications for It are due on March 1st of the junior year.

The prerequisites for registration in an honors program are as follows:

- A faculty member from the department(s) in which the honors project is to be undertaken must agree to be the director and must secure departmental approval for the project.
- The director, in consultation with the student, must form an individual Honors Committee consisting of two faculty members from the department in which the project is to be undertaken, one of whom shall be the director of the project, and one faculty member from each of two other departments related to the subject matter of the study.
- The student must meet with the individual Honors Committee to review the proposed course of study. This meeting generally should take place prior to the student embarking on a substantial portion of the research, critical study, or creative project so that the individual Honors Committee members can provide feedback on the developmental phase of the honors project. The Honors Committee must then certify by their signatures on the application that the project in question is academically legitimate and worthy of pursuit as an honors project, and that the student in question is qualified to pursue the project.
- The project must be approved by the Committee on Individual Studies.



Students successfully complete honors projects by satisfying the following conditions in accordance with guidelines established by the Committee on Individual Studies:

- The student must produce a substantial research paper, critical study, or creative project. If the end product is a creative project, a critical paper analyzing the techniques and principles employed and the nature of the achievement represented in the project shall also be submitted.
- The student must successfully explain and defend the work in a final oral examination given by the Honors Committee.
- The Honors Committee must certify that the student has successfully defended the project, and that the student's achievement is clearly superior to that which would ordinarily be required to earn a grade of "A" in a regular independent studies course.

Except in unusual circumstances, honors projects are expected to involve independent study in two 4-credit courses. There are two ways for a student to complete an honors project. A student may continue a project from an independent study (see Independent Studies) or their major's capstone course and count that course as one of the two semesters of the honors project. A student not continuing an honors project from an independent study or their major's capstone course must complete an application for registration in honors for each semester of course credit. In this circumstance, an incomplete grade is recorded for the first semester of the honors project until the completion of the second semester of honors work.

Successful completion of the honors project will allow the designation of honors in that department to be placed upon the permanent record. A final copy of the honors project shall be submitted to the library for processing and inclusion in the library collection. In the event that the study is not completed successfully or is not deemed worthy of honors, the student shall be reregistered in independent studies and given a final grade for the course.

## **ACADEMIC SUPPORT SERVICES**

### **The Office of Student Success & Academic Services**

The Office of Student Success and Academic Services oversees new student orientation programming, first-year supports, coordination of accessibility services, and academic success programming.

**New Student Orientation** — All new students participate in orientation programming designed to connect students to the multi-faceted experience of campus life and prepare them for academic, social, and personal success. Orientation programming begins in June and includes the completion of required tasks that support key orientation programming such as Warrior Day, remote academic advising, New Student Convocation, 1st Weekend, and Warrior Welcome Week.

**First-Year Supports** — The Associate Provost for Teaching Excellence coordinates the First Year Seminar Program including the FYS Passport Program and FYS College Transition Workshop. The Office also directs the Lycoming Summer Academy program, a scholarship-

earning summer bridge program, and ASP 151 Campus Connections in support of a strong transition to college life and academic expectations.

**Early Assessment Progress Reports** — During the sixth week of the semester, classroom instructors prepare Early Assessment Progress Reports for all classes. In week seven, academic advisors, students, varsity athletic coaches, and the Office of Student Success and Academic Services receive these progress reports and can counsel students having difficulty regarding adjustment strategies. Early Assessment grades are not recorded on the student's permanent record.

**Accessibility Resources** — The College recognizes the importance of supporting and meeting the needs of students with documented disabilities. Students with documented disabilities work directly with the Office of Student Success and Academic Services for coordination of academic accommodations. The Accessibility Resources team determines appropriate accommodations based on documentation provided to the College. Students seeking support should contact [accessibility@lycoming.edu](mailto:accessibility@lycoming.edu) for confidential consultation.

**Academic Success Program** — Students placed on academic probation are enrolled in ASP 153 College Anew. This ½ credit, seven-week course is designed to identify the student's strengths and build upon them for greater academic success. Students placed on academic probation work with the Office of Student Success and Academic Services on self-evaluation and develop an individually-tailored set of strategies for academic improvement.

**Academic Advising** — A hallmark of Lycoming is the direct, personal contact between a student and the College faculty who care about that student's personal, academic, and professional aspirations. The student can draw upon the faculty member's experience to identify campus resources that address social adjustment, workload, and study skills.

Students meet their initial academic advisor during the new student orientation process. Initial advisors assist with course selection by providing accurate information about requirements, programs, and career options. They also refer students to various campus resources.

By the beginning of the junior year, the student must choose a major and select a major advisor from the major department or program. The new major advisor, while serving as a resource, can best advise that student about course selection, graduate school, and career opportunities.

Advisors at Lycoming endeavor to contribute to student development in yet another way. They insist that students assume full responsibility for their decisions and academic progress. By doing so, they help to prepare them for the harder choices and responsibilities of the professional world. Also, Lycoming provides special advising programs for careers in education, medicine, law, and religion. Interested students should register with the appropriate advisory committee immediately after deciding to enter one of these professions (see Pre-Professional Programs).

## **Office of Tutoring Services**

The Office of Tutoring Services coordinates the wide array of academic tutoring services available at Lycoming College. The Tutoring Services public website and SharePoint site provide information about operating hours, tutor availability, and other details.

**Writing Center** — Trained peer tutors help writers improve papers while developing confidence and independence as writers. Writing tutors discuss development, organization, grammar, documentation, and any other writing concerns. Students can schedule appointments or visit during walk-in hours.

**Math Center** — Trained peer tutors help students with quantitative problems in any course. Tutors are available to work one-on-one or in small groups. No appointment needed.

**Subject Tutoring** — Tutoring Services offers one-on-one tutoring support in most courses. Trained peer subject tutors assist students with homework assignments and test preparation. Tutors are available by appointment.

**Study Groups** — Conducted for selected classes, study groups offer students an opportunity to draw on the experiences of successful upper-class students to navigate the academic challenges of courses. Study group facilitators attend class, organize review materials, and lead study sessions outside of class.

**International Student Support** – Tutoring Services collaborates with the International Student Advisor to arrange course-specific, embedded tutoring by request, and other individual academic support as needed. International students can also utilize the Math Center, Writing Center, subject tutoring, study groups, and study skills peer mentors.

## **SPECIAL ACADEMIC OPPORTUNITIES**

**May Term** – This four-week voluntary session is designed to provide students with courses listed in the catalog and experimental and special courses that are not normally available during the fall and spring semesters and summer sessions. Some courses are offered on campus; others are remote, synchronous classes; and some involve travel. Students may take a maximum of 4 credits during May term. Travel courses require an application process coordinated through the Center for Enhanced Academic Experiences. Travel courses are announced at least one year in advance of the course offerings with registration and travel fee payments for these May courses are required during the prior fall semester.

**Summer Term** – This 13-week academic term offers the opportunity for students to complete internships, independent studies, and semester courses. Students may take a maximum of 8 credits per session.

### **Independent Studies**

Independent studies are available to qualified students who wish to engage in and receive academic credit for an academically legitimate course of study for which they could not otherwise receive credit. It may be pursued at an introductory, intermediate, or advanced level

and in any department, whether or not the student is a major in that department. An independent studies project may either duplicate a catalog course or be completely different from any catalog course. In order for a student to be registered in an independent study course, the following conditions must be satisfied:

- 1) An appropriate member of the faculty must agree to supervise the project and must certify by signing the application form that the project involves an amount of legitimate academic work that is appropriate for the amount of academic credit requested and that the student in question is qualified to pursue the project.
- 2) The studies project must be approved by the chair of the department in which the studies project is to be undertaken. In the case of catalog courses, all department members must approve offering the catalog course as an independent studies course.
- 3) After the project is approved by the instructor and the chair of the appropriate department, the studies project must be approved by the appropriate entity. The Registrar's Office approves all independent studies of catalog courses. The Committee on Individual Studies approves all other independent studies.

Participation in independent studies projects which do not duplicate catalog courses is subject to the following:

- Students undertaking independent studies projects must have a GPA of at least 2.50.
- Students may not engage in more than one independent studies project during any given semester.
- Students may not engage in more than two independent studies projects during their academic careers at Lycoming College.
- The Individual Studies Committee may exempt members of the Lycoming College Scholars Program from these two limitations.

As with other academic policies, any other exceptions to these two rules must be approved by the Committee on Academic Standards.

### **Credit-Bearing Internship/Practicum Program**

An internship is a course jointly sponsored by the College and a public or private agency or subdivision of the College in which a student is able to earn college credit by participating in some active capacity as an assistant, aide, or apprentice. Students are encouraged to complete an internship through practica courses available within the curriculum of a variety of academic departments and within the Center for Enhanced Academic Experience's (CEAE) curriculum.

Practica courses are offered in many departments and require 10 to 12 hours of work per week in a business, agency, or organization in addition to classroom time. A maximum of 16 credits can be earned through practica, internships, and/or student teaching.

For a 4-credit internship, at least ten hours per week must be spent in agency duties. Academic requirements include a daily log or journal, a research paper of approximately ten pages or its equivalent, and a reading list of approximately five books or the equivalent. The student and academic supervisor meet weekly during the term of the internship.

The objectives of the internship/practica program are:

- 1) to further the development of a central core of values, strategies, skills, and information through experiences outside the classroom or other campus situations, and
- 2) to facilitate the integration of theory and practice by encouraging students to relate their on-campus academic experiences more directly to society in general and to possible career and other post-baccalaureate objectives in particular.

Students should consult their major advisor and/or career advisor for application requirements for an individual department's practicum course. Students are also encouraged to seek practicum support through the Center for Enhanced Academic Experiences, which offers an annual CEAE 300 Liberal Arts Practicum open to students across majors, including those whose departments do not offer a practicum course. Guidelines for program development, assignment of tasks and academic requirements, such as exams, papers, reports, grades, etc., are established in consultation with a faculty director at Lycoming and an agency supervisor at the place of internship.

Students with diverse majors have participated in a wide variety of internships at places such as business and accounting firms, law offices, hospitals, social service agencies, banks, and Congressional offices.

### **Non-Credit Summer Internships**

While credit-bearing internships and practica typically are offered during the fall or spring academic semester, students can also pursue non-credit internships during the summer months and obtain practical experience while also meeting the enhanced academic experience graduation requirement. Students interested in completing a non-credit summer internship should seek assistance and pre-approval through the Center for Enhanced Academic Experiences. Students approved for these programs enroll in either CEAE 301 or 302. Non-credit summer internships require weekly journal submissions and an exit interview with the supervising career advisor.

### **Alternative Routes to Teacher Certification**

1. Lycoming College offers a **post-baccalaureate teacher certification program** for individuals who already hold a bachelor's degree and are seeking Pennsylvania teacher certification. Designed for candidates whose prior academic preparation did not include an education component, the program provides a structured pathway to certification through coursework and supervised clinical experience aligned with Pennsylvania Department of Education (PDE) requirements. Lycoming College is an approved provider of educator preparation and offers both traditional and experience-based options, allowing candidates to gain the pedagogical knowledge and practical skills necessary for effective classroom teaching.

To enroll, prospective candidates begin by identifying the subject area they wish to teach and applying to Lycoming College's post-baccalaureate certification program. The College evaluates prior coursework to determine program eligibility and any additional requirements. Once admitted, candidates complete required education coursework and

clinical experiences, including student teaching or approved employment-based teaching when applicable. Candidates must also pass the appropriate content-area certification examinations and apply for certification through the Pennsylvania Department of Education's Teacher Information Management System (TIMS), with Lycoming College verifying program completion as the approved provider.

2. Lycoming College offers a Pennsylvania Department of Education (PDE)–approved experience-based teacher certification pathway that allows candidates to complete certification requirements while employed in a full-time or long-term substitute teaching position. Candidates must be at least 18 years of age, demonstrate good moral character, hold a minimum of a bachelor's degree, and—unless seeking certification to teach a world language—be a U.S. citizen or legally authorized to work in the United States, including permanent resident immigrant visa holders. Admission to the experience-based program requires a minimum 3.0 GPA and enrollment in Lycoming College's PDE-approved program, followed by securing appropriate employment in the candidate's content area(s). Candidates must meet all required testing benchmarks, submit an online application through the Teacher Information Management System (TIMS), and have their program enrollment verified in TIMS by the PDE-approved experience-based program provider.

See Education Department listing for more information.

### **Washington Semester**

Lycoming College has an affiliation with American University in Washington, D.C. which allows qualified students to participate in their Washington Semester Program Washington and the Summer Internship Program. Similar to study abroad programs, students enroll in courses at American University across an array of disciplines as well as complete an internship in the Washington, D.C. region. Students interested in this study away program should contact the Center for Enhanced Academic Experiences and apply for this program using the same process utilized for study abroad applications.

### **INTERNATIONAL EXPERIENCES**

Students are encouraged to participate in a variety of international experiences sponsored by Lycoming College, its partners, and approved programs. Opportunities range from short-term travel courses to independent study abroad programs available during the summer, semester, or full academic year. All programs are managed by the Office of Global Education in the Center for Enhanced Academic Experiences (CEAE) in consultation with the College's Study Abroad Committee. More information on available programs can be found on-line at: <https://www.lycoming.edu/study-abroad/study-away-from-lycoming.aspx>.

## **Full Semester or Summer Programs**

Students interested in studying abroad through a college-approved summer, semester, or full year program must achieve a cumulative and major grade point average of 2.50 or higher and be in good standing in terms of student conduct. Participation in all summer, semester, and full year study abroad programs requires an approved study abroad application submitted through the Global Education Office of the CEAE. Students should begin the application process for summer, semester, or full year study abroad programs approximately a year in advance of intended program participation.

Students should note study abroad requirements specific to their intended major and/or minor as identified in the Catalog.

Students who do not meet the academic standards established for independent study abroad may appeal through the CEAE's Global Education Office. Appeals are reviewed by the Study Abroad Committee, which issues a positive or negative recommendation to the Committee on Academic Standards. Following a review of the student's appeal and the Study Abroad Committee's recommendation, a final ruling is issued by the Committee on Academic Standards.

## **Exchange Programs**

Lycoming College holds tuition exchange agreements with the following universities. Space is limited in each program. Students should consult with the Global Education Office to review the language and courses of study available at each institution.

- Hanze University of Applied Sciences, Groningen, Netherlands
- Otto-Friedrich-Universität, Bamberg, Germany
- SIAS International University, Zhengzhou, China
- Universidad Popular Autónoma del Estado de Puebla (UPAEP), Puebla, Mexico
- Université Grenoble Alpes (UGA), Grenoble, France
- Westminster University and Westminster Business School, London, England

Note that Westminster Business School is available only to those students pursuing majors or minors in programs from within Lycoming's Institute for Management Studies.

## **Immersive Language Programs**

The following programs are designed for full language immersion, and all courses are conducted in the language of study.

- Center for Linguistics, Université de Franche-Comté in Besançon, France
- Centre Universitaire d'études Françaises (CUEF), Université Grenoble Alpes in France
- Estudio Sampere in Costa Rica, Ecuador, and Spain
- Freie Universität in Berlin, Germany
- Institute for Field Education (IFE) in Brussels, Belgium; Paris and Strasbourg, France; and Andalucía and Asturias, Spain

## **Affiliate Program**

A full listing of affiliate programs is available through the CEAE's Global Education Office.  
<https://www.lycoming.edu/center-for-enhanced-academic-experiences/global-education.aspx>.

### **Faculty-Led Travel Courses and Lycoming College-Affiliated Archaeological Field Schools**

Lycoming College also offers a variety of faculty-led travel courses. Students interested in participating in faculty-led travel courses, including Lycoming-sponsored archaeological field schools, must complete a common travel course application available in the CEAE. Travel courses require that students be in both good academic and student conduct standing.

Travel course options change yearly and are announced and managed through the CEAE's Global Education Office.

|                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>NOTE: Lycoming College cannot assume responsibility for the health, safety, or welfare of students engaged in or en route to or from any off-campus studies or activities which are not under its exclusive jurisdiction.</b></p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## **CURRICULUM**

Numbers 100-149 Introductory courses and First-Year courses

Numbers 200-249 Intermediate courses and Sophomore level courses

Numbers 300-349 Intermediate courses and Junior level courses

Numbers 400-449 Advanced courses and Senior level courses

Numbers N50-N59\* Non-catalog courses offered on a limited basis

Numbers 160-179 Applied Music, Theatre Practica, and other courses that grant less than 2 credits

Numbers 470-479 Internships

Numbers N80-N89\* Independent Study

Numbers 490-491 Independent Study for Departmental Honors

\*N = course level 1, 2, 3, or 4 as determined by department

## **2D ANIMATION**

Professors: Peterson (Coordinator), Tran (Coordinator)

2D animation is rapidly becoming a required skill set for filmmakers and artists. Many diverse industries—such as business, the entertainment industry, and the legal and medical industries—look to 2D animators to bring ideas to life. This minor is designed for students who are interested in the fields of 2D animation, interactive art, video, and motion graphics.

Required courses are: ART 344 and 413; FILM 215; FVA 120 and 200; and one course from ART 111, 226, or 243 or FVA 220, 300, 310, or 340.

# ACCOUNTING (ACCT)

Associate Professors: Kremer, Moon (Chair)

Assistant Professor: Paulhamus

Instructor: Sunderland

- Major: Accounting
- Tracks: 150 Credit Accounting; 128 Credit Accounting
- Courses required for 150 Hour Accounting: 21
- Courses required for 128 Hour Accounting: 18.5
- Capstone requirement: pass a Standardized Accounting achievement examination
- Minor: Accounting

The purpose of the accounting major is to help prepare the student for a career within the accounting profession. In order to satisfy the needs of an extremely diverse profession, the major in accounting consists of two separate tracks. Track I is a 150-credit program designed to meet the model recommended by the American Institute of Certified Public Accounts and required by the Pennsylvania State Board of Accountancy for those students interested in pursuing a career as a CPA. Track II is a 128-credit program designed for students who are interested in various other career opportunities in accounting, such as industry and government.

Students planning to sit for the Uniform Certified Public Accounting Examination are advised to check with their State Board of Accounting to assure that they have completed all courses required for CPA licensure.

The Department of Accounting is a member of the Institute for Management Studies. For more information, please see the Institute for Management Studies listing.

## Major Requirements

### Core courses required of all majors:

ACCT 110, 223, 225, 235, 236, 320, 344, 345, 436, 440, 441, 443; BUS 228, 238, 244; ECON 110 and 111; MATH 123.

## Track requirements

### 1. Accounting–150 credits:

ACCT 442, 447, 460, and one course from ACCT 438, 439, or 470-479; and one course from SOC or PSY.

### 2. Accounting–128 credits:

One course from ACCT 438, 439, 460, 470-479.

### **Capstone Requirement**

All accounting majors must demonstrate to the Department their expertise in accounting by successfully completing an exit exam during their senior year. The Accounting Department may also require a student to complete a comprehensive project for those areas in which they did not demonstrate proficiency.

### **Minor Requirements**

A minor in the Department of Accounting consists of ACCT 110, 130 or 223, and three courses selected from the following: ACCT 225, 320, 344, 345, 441.

#### **100**

##### **PERSONAL FINANCIAL PLANNING**

Prepares students to make better informed financial decisions in a complicated world. A practical, relatively nontechnical course designed to help the student identify and plan to meet their financial goals.

#### **110**

##### **FINANCIAL ACCOUNTING**

An introductory course in recording, classifying, summarizing, and interpreting the basic business transaction. Emphasizes problems of classification and interpretation of accounts and preparation of financial statements.

#### **130**

##### **ACCOUNTING FOR MANAGERIAL DECISION-MAKING**

An introduction to the various components of managerial accounting. Emphasis is placed on managerial problem-solving techniques and the analysis of the results. Accounting systems, costing procedures, cost-volume profit relationships, managerial control processes, and the use of computers as aids to decision-making are studied. Students gain hands-on experience with various computer applications of managerial accounting. *Prerequisite: ACCT 110.*

#### **223**

##### **COST AND BUDGETARY ACCOUNTING THEORY**

Methods of accounting for material, labor, and factory overhead expenses consumed in manufacturing using job order, process, and standard costing techniques. *Prerequisite: ACCT 110.*

#### **225**

##### **BUDGETING AND FINANCIAL STATEMENT ANALYSIS**

A study of the preparation and use of budgets. Includes study of financial data as a means of analyzing, interpreting, and using financial statements. *Prerequisite: ACCT 110.*

#### **235**

##### **LEGAL PRINCIPLES**

A study of the sources and principles of law in general. Focuses on the application of these principles to the law of contracts, agency, negotiable instruments, and legal associations.

**236**

**LEGAL AND ETHICAL ISSUES FOR ACCOUNTANTS**

A study of the fundamentals of law related to the forms of business, real property, wills, and estates. Emphasizes the accountant's legal liability and the American Institute of Certified Public Accountants Code of Professional Conduct.

**320**

**ACCOUNTING INFORMATION SYSTEMS**

An introduction to design and use of accounting information systems (AIS) and design and implementation of control systems in AIS. *Prerequisite: ACCT 110.*

**344**

**INTERMEDIATE ACCOUNTING THEORY I**

An in-depth examination of the environment within which financial accounting theory exists. An examination of the basic postulates that underlie financial statements and a critique of what financial reporting means. *Prerequisite: ACCT 223 or consent of instructor.*

**345**

**INTERMEDIATE ACCOUNTING THEORY II**

An examination of the various accounting and reporting issues affecting assets. *Prerequisite: ACCT 344 with a minimum grade of C or consent of instructor.*

**436**

**INTERMEDIATE ACCOUNTING THEORY III**

An examination of the various accounting and reporting issues affecting liabilities, stockholder equity, earnings per share, cash flows, and accounting changes. *Prerequisite: ACCT 345 with a minimum grade of C or consent of instructor.*

**438-439**

**PRACTICUM IN ACCOUNTING I-II**

An introduction to the real world of accounting. Students are placed in Managerial and Public Accounting positions in order to effect a synthesis of the students' academic course work and its practical applications. Specifics of the course work arranged between department, student, and sponsor. *May be repeated for credit with consent of instructor when topics are different.*

**440**

**AUDITING THEORY**

A study of the science or art of verifying, analyzing, and interpreting accounts and reports. Emphasizes concepts which will enable students to understand the philosophy and environment of auditing. Special attention is given to the public accounting profession, studying auditing standards, professional ethics, the legal liability inherent in the attest function, the study and evaluation of internal control, the nature of evidence, the growing use of statistical sampling, the impact of electronic data processing, and the basic approach to planning an audit. Finally, various audit reports expressing independent expert opinions on the fairness of financial statements are studied. *Prerequisites: ACCT 344 and MATH 123 or consent of instructor.*

**441****FEDERAL INCOME TAX I**

An analysis of the provisions of federal income tax law as applied to individuals. Gross income, inclusions, exclusion, deductions, losses, business expenses, depreciation, cost recovery, amortization, depletion, employee and self-employed expenses, itemized deductions, at risk rules, and passive activities are studied. *Prerequisite: ACCT 344.*

**442****FEDERAL INCOME TAX II**

An analysis of federal tax law. Tax credits, property transactions, accounting periods and methods, taxation of corporations, partnerships, and S corporations are studied. *Prerequisite: ACCT 441.*

**443****ACCOUNTING FOR BUSINESS COMBINATIONS**

Certain areas of advanced accounting theory, including business combinations and consolidated financial statements. *Prerequisite: ACCT 345. 2 credits.*

**447****ADVANCED ACCOUNTING**

An intensive study of partnerships, foreign currency transactions and translation, segment interim reporting, and fund accounting. *Prerequisite: ACCT 345. 2 credits.*

**460****DATA ANALYTICS IN ACCOUNTING**

Provide students foundational knowledge of data, data analysis techniques, and data ecosystems. Focuses on understanding the use of data analytics, forecasting and predictive techniques, data modeling, and data visualization. Emphasis will be placed on data techniques relevant to the accounting profession—answering business questions, enhancing audit quality, and developing a data-driven mindset as an accounting professional—using Microsoft Excel and advanced data analytics and visualization software. *Prerequisite: ACCT 320, 436, 440 or consent of instructor.*

**470-479****INTERNSHIP**

Interns in accounting typically work off campus under the supervision of a public or private accountant.

**N80-N89****INDEPENDENT STUDY**

Typical examples of recent studies in accounting are: computer program to generate financial statements, educational core for public accountants, inventory control, and church taxation.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

# ACTUARIAL SCIENCE

Assistant Professor: M. Smith (Coordinator)

- Major: Actuarial Science (B.S. Degree)
- Courses required for major: 15 (not including zero or 1 credit courses)
- Math prerequisite (not counted in major): MATH 127
- Non-credit Colloquium: Two Semesters
- Capstone requirement: One course from MATH 441, or 442.

The Actuarial Science major is designed to offer course work within a liberal arts framework to prepare for a career in actuarial science. Students completing this major should be prepared to sit for at least two, and have passed at least one of the examinations of the Society of Actuaries by the time of graduation. Students also obtain some background in accounting, economics, and business which is needed for a career in actuarial science.

## Major Requirements

The Actuarial Science major consists of 15 courses: ACCT 110; CPTR 125; ECON 110 and 111; MATH 128, 129, 130, 234, 238, 325, 332, 333, 434, 441; and MATH 214 or ECON 340. Students are required to pass either Actuarial Exam P or Actuarial Exam FM prior to graduation and are expected to enroll in non-credit colloquium (MATH 449) for two semesters.

The Society of Actuaries gives VEE (Validation by Educational Experience) credit for a grade of at least B- in coursework in the areas of Economics, Applied Statistical Methods, and Corporate Finance. A grade of at least B- in both ECON 110 and 111 is necessary for credit in the area of Economics. Information about credit in the areas of Applied Statistical Methods and Corporate Finance can be obtained from the coordinator for the actuarial science major.

## Capstone Requirement

All majors must successfully pass either Actuarial Exam P or Actuarial Exam FM.

# AMERICAN STUDIES (AMST)

Professors: Leiter (Coordinator), Pearl (Coordinator)

- Major: American Studies
- Courses required for major: 11
- Capstone requirement: AMST 489
- Minors: American Studies, Multiculturalism

The American Studies major offers a comprehensive program in American civilization which introduces students to the complexities underlying the development of America and its contemporary life. The program develops the skills of research, writing, and critical thinking that are central to a well-rounded, liberal arts education. The major requires eleven courses relevant to the interdisciplinary study of American civilization. Two minor tracks are also available in the American Studies program. The American Studies minor requires five courses in similar areas as the major. The Multiculturalism minor requires five courses that concentrate on the issues of ethnic and racial diversity that define American society, art, and history.

Students should design their American Studies major in consultation with a program coordinator, and they must maintain at least a 2.5 GPA in order to complete the independent study requirement. With appropriate faculty approval, some special topics courses (ENGL 115, SOC 320, and so on) may fulfill American Studies requirements. Students pursuing another major or minor in addition to their American Studies major may count no more than three courses for credit toward both concentrations. Students may count no more than one course for credit toward both an American Studies minor and another major or minor.

## Major Requirements

### 1. Three Core Courses:

The primary integrating units of the major, these courses teach students to consider ideas from different points of view and help them to correlate information and methods from various disciplines:

AMST 200 Perspectives on America (first-year or sophomore students)

HIST 449, PSCI 300, or SOC 330— Research Methods (junior or senior year; must be completed before or concurrently with AMST 489)

AMST 489 Independent Study (junior or senior year)

### 2. One course in the American arts:

|          |                                     |
|----------|-------------------------------------|
| FILM 212 | Multicultural America on Screen     |
| MUS 234  | History of Jazz                     |
| MUS N80  | Independent Study in American Music |
| THEA 210 | Modern Drama                        |



**3. Three courses in American humanities, with at least one from history and one from English:**

|          |                                             |
|----------|---------------------------------------------|
| ENGL 222 | American Literature I                       |
| ENGL 223 | American Literature II                      |
| ENGL 229 | African American Literature                 |
| HIST 125 | United States to 1877                       |
| HIST 126 | United States since 1877                    |
| HIST 226 | Era of the American Revolution              |
| HIST 230 | African American History                    |
| HIST 233 | Civil War and Reconstruction                |
| HIST 242 | Vietnam War at Home and Abroad              |
| HIST 324 | Early American Law and Society              |
| HIST 338 | Rights, Reform, and Protest                 |
| HIST 342 | Women and Reform                            |
| HIST 402 | Revel, Riot, and Rebellion in Early America |
| HIST 404 | Modern America                              |
| PHIL 334 | Contemporary Political Philosophy           |

**4. Three courses in American social sciences, with at least one from Political Science and one from Sociology:**

|          |                                                       |
|----------|-------------------------------------------------------|
| ECON 224 | Urban Economics                                       |
| ECON 332 | Government and the Economy                            |
| ECON 335 | Labor Economics                                       |
| PSCI 110 | U.S. Government and Politics                          |
| PSCI 130 | The American Legal System                             |
| PSCI 211 | State and Local Government                            |
| PSCI 220 | Public Policy in America                              |
| PSCI 222 | Political Parties and Interest Groups                 |
| PSCI 224 | Campaigns and Elections                               |
| PSCI 229 | Special Topics in American Politics and Public Policy |
| PSCI 231 | Law in America                                        |
| PSCI 316 | Public Opinion and Polling                            |
| PSCI 322 | The Presidency                                        |
| PSCI 331 | Civil Rights and Liberties                            |
| PSCI 339 | Judicial Politics and Behavior                        |
| SOC 220  | Sociology of Family                                   |
| SOC 310  | Sociology of Health, Illness, and Health Care         |
| SOC 334  | American Immigration                                  |

**5. An additional course numbered 300 or higher from those listed above or an internship**

**Capstone Requirement**

All majors must successfully complete AMST 489.

### **Minor Requirements**

The minor in **American Studies** requires five courses: AMST 200; one course from FILM 212, MUS 234; one course from ENGL 222, 223, 229, HIST 125, 126, 226, 230, 233, 242, 324, 338, 342, 402, 404; one course from ECON 224, 332, 335, PSCI 110, 130, 211, 220, 222, 224, 229, 231, 316, 321, 322, 331, 334; and one additional course numbered 200 or higher from any listed above.

The minor in **Multiculturalism** consists of five courses: AMST 200; SOC 334; and three courses from ECON 224, ENGL 229, FILM 212, HIST 230, HIST 338, MUS 234, and PSCI 331.

### **200**

#### **PERSPECTIVES ON AMERICA**

An analysis of the fundamental nature of American culture, society, and politics and the interdisciplinary means for studying it. The course explores what is distinctively American and introduces students to the range of approaches taken to better understand topics covered in American studies. *Alternate years.*

### **470-479**

#### **INTERNSHIP**

### **N80-N88**

#### **INDEPENDENT STUDY**

### **489**

#### **INDEPENDENT STUDY**

An intensive interdisciplinary research project designed by the student in consultation with a faculty advisor.

### **490-491**

#### **INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

# **ANTHROPOLOGY AND SOCIOLOGY (ANTH, SOC)**

Professor: McCall

Associate Professors: Adams, Munson (Chair)

Assistant Professor: Espy

- Majors: Anthropology, Sociology
- Courses required for Anthropology, Sociology: 10
- Math prerequisite (not counted in major) for Sociology: MATH 123
- Capstone requirement for Anthropology: ANTH 447
- Capstone requirement for Sociology: SOC 430
- Minors: Anthropology, Human Services, Sociology

The Anthropology and Sociology Department offers majors in anthropology and sociology. Regardless of major, students may minor in human services.

## **ANTHROPOLOGY (ANTH)**

### **Major Requirements**

#### **1. Five Core Courses:**

|          |                              |
|----------|------------------------------|
| ANTH 101 | Ancient Bodies, Modern Lives |
| ANTH 102 | Patterns in Prehistory       |
| ANTH 103 | Cultural Anthropology        |
| ANTH 344 | Anthropological Theory       |
| ANTH 447 | Anthropological Research     |

#### **2. Five Elective Courses:**

ANTH electives: two additional courses with an ANTH prefix, numbered 200 or above  
ARCH elective: any additional course with an ARCH prefix, numbered 200 or above, may not be taken as ANTH with the same number

Any two additional courses from: ANTH; ARCH; SOC; BIO 222; MATH 123; or any FRN, GERM, or SPAN course numbered 221 or above.

### **Capstone Requirement**

All majors must successfully complete ANTH 447.

### **Minor Requirements**

A minor in Anthropology requires two courses from ANTH 101, 102, and 103; one ANTH course numbered 300 or above; and two additional ANTH or ARCH courses numbered 200 or above.

**101****ANCIENT BODIES, MODERN LIVES**

Serves as an introduction to Biological/Physical Anthropology by examining the fundamental questions surrounding human biological diversity and the origins of our species. Drawing on fossil evidence and primate studies, this course explores the latest anthropological research related to human evolution, including discussions of the adaptive advantages of bipedalism and neural complexity. Contemporary issues of human population diversity are also considered, including the relationship between environmental conditions and phenotypical variation, the interplay between social/cultural practices and human physiology, and questions related to public health. *Fulfills Global Cultural Diversity Requirement. Not open to juniors or seniors except with consent of instructor.*

**102****PATTERNS IN PREHISTORY**

Serves as an introduction to Archaeology. This course is an overview of world prehistory using the archaeological record to trace human cultural developments across the globe. This course traces the milestones of the human experience from the early beginnings of modern humans to hunter-gatherer developments to the origins of agriculture and urbanization. Students explore particular cultural sequences in specific regions and evaluate commonalities as well as differences between these ancient societies. Students gain insights into what archaeology is and how archaeologists obtain information that leads to reconstructions of past life ways. Through this course, students gain a foundation in understanding past societies and how the past influenced and shaped the diversity of modern societies that exist today. *Fulfills Global Cultural Diversity Requirement. Not open to juniors or seniors except with consent of instructor.*

**103****CULTURAL ANTHROPOLOGY**

Serves as an introduction to Cultural Anthropology. Cultural anthropology seeks to explain the diversity of human societies, while looking for commonalities across them. Serves as a general introduction to the field of cultural anthropology, including an introduction to the history of anthropological research and the practice of ethnography. Topics include kinship, race, globalization, gender, social status, identity, and violence. *Fulfills Global Cultural Diversity Requirement. Not open to juniors or seniors except with consent of instructor.*

**210****TALKING TRASH: ARCHAEOLOGY OF EVERYDAY LIFE**

Examines the material remains and built environments that are the product of people's everyday life. Focusing on the household as a central analytical unit, students investigate the residential spaces and things that people produce and consume in domestic contexts in order to study past demographic patterns, social interactions and status, subsistence practices, divisions of labor, as well as group ideology and communal practices in ancient human societies. Case studies drawn from ethnography and archaeology examine the patterns of everyday life in the ancient Near East, Mediterranean, and the Americas. *Cross-listed as ARCH 210. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**230****ANTHROPOLOGY OF LATIN AMERICA**

Examines the history of anthropology in Latin America, from early concerns with Native American populations in Central and South America to current concerns with cultural plurality, neoliberal economic reforms, and environmental conservation. Topics include European colonization, globalization, gender, and medical anthropology. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**232****ENVIRONMENTAL ANTHROPOLOGY**

Anthropologists examine the interaction between people and the environment from many different perspectives. This course surveys several of these approaches to understanding human/environment interactions with particular emphasis on human adaptation to the environment across cultures and through time, as well as the current concerns with environmental sustainability and the social context of the environmental movement. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**233****ARCHAEOLOGY OF RITUAL**

In-depth cross-cultural study of the archaeological remains of ancient ritual practices. While the meaning of ancient rituals is not directly accessible to us today, archaeologists study the spaces, objects, actors, and material residues of past ritual practices to understand their role and significance in past societies. Case studies drawn from the ancient Near East, Mediterranean, and the Americas. *Cross-listed as ARCH 233 and REL 233. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**310****FOOD AND CULTURE**

Surveys the growing body of scholarship in food studies and the anthropology of food. Food production and consumption are examined in terms of human biology, culture, and social status across time from our evolutionary ancestors to the present day. Topics include systems of food production, the social and cultural context of agricultural settings, the rise of industrial agriculture and fast food, and social movements based on ideas about food, such as the organic and local food movements. *Prerequisite: One 4-credit ANTH course or junior or senior standing. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**311****POWER AND PRESTIGE IN THE PAST**

In-depth analysis of the development and operation of state-level societies from anthropological and archaeological perspectives. Topics include the emergence of social inequality, definitions of state and power, political organization, collective action, and the role of ideology in complex societies. Case studies drawn from the ancient Near East, Mediterranean, and the Americas. *Cross-listed as ARCH 311. Prerequisite: One 4-credit ANTH course or junior or senior standing. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**320****SPECIAL TOPICS IN ANTHROPOLOGY**

Study of selected anthropological problems, theorists, or movements. Sample topics include art and society; ethnography and ethnology; applied anthropology; anthropology of gender, culture and agriculture; and Geographic Information Systems (GIS). *Prerequisite: One 4-credit ANTH course or junior or senior standing. May be repeated for credit with consent of department when topics are different. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**331****MAKING THE MAYA WORLD**

A wide-ranging exploration of ancient Maya civilization and of the various ways archaeologists, anthropologists, linguists, historians, and indigenous communities have examined and manipulated the Maya past. From the thrill of decipherment to painstaking and technical artifact studies, from tropes of long-hidden mysteries rescued from the jungle to New Age appropriations of pre-Columbian rituals, students examine how models drawn from archaeology, anthropology, art history, ethnography, political science, and popular culture have shaped current understandings of the ancient Maya world, and how the Maya world has, at times, resisted easy appropriation and defied expectations. *Cross-listed as ARCH 331. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**334****ECONOMIC ANTHROPOLOGY**

There is a tremendous diversity in how human societies organize themselves for production, distribution, and consumption. Both theoretical and practical, this course is an examination of the ways people organize themselves around these tasks. Students concerned about real-world business problems re-examine desire, decision-making, and the impact of culture on economic behavior, while anthropological theories are considered in terms of their practical utility for understanding observed economic behavior. Topics include the origins of economic systems, ancient economies, colonialism, globalization, and international commerce. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**344****ANTHROPOLOGICAL THEORY**

Addresses the history of theory in anthropology, with a greater emphasis on theories used within cultural anthropology, although theoretical trends in archaeology, anthropological linguistics, and biological/physical anthropology are included to a more limited degree. The course is reading intensive and broad, including work by Franz Boas, Eric Wolf, Clifford Geertz, and Pierre Bourdieu among others. *Prerequisite: One 4-credit ANTH course or junior or senior standing. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**401****FIELD ARCHAEOLOGY**

This field course acquaints students with the basic techniques and procedures used in modern archaeology through intensive hands-on fieldwork. Students gain practical experience in archaeological excavation or survey and assist with data recording and artifact processing. Site visits and lectures relating the local archaeology to its larger cultural context are also usually

included. *Cross-listed as ARCH 401, and as REL 401 for some Mediterranean and Near Eastern digs with approval. Prerequisite: ARCH 200 or consent of instructor. Special fees apply. May Term or Summer Sessions only.*

### **403**

#### **LABORATORY METHODS IN ARCHAEOLOGY**

Acquaints students with the basic methods and techniques used to analyze archaeological materials. Students gain practical experience in the description, inventory, and analysis of artifacts, processing of specimens, and data documentation. Includes lectures, laboratory, and museum visits. *Cross-listed as ARCH 403. Prerequisite: ARCH 200 or consent of instructor. Special fees apply. May Term or Summer Sessions.*

### **447**

#### **ANTHROPOLOGICAL RESEARCH**

Students complete an original quantitative or qualitative research project utilizing one of the many data collection strategies available to anthropologists such as field work, excavation, artifact analysis, content analysis, surveys, qualitative interviews, and participant observation. Topic selection is of individual student's choice. *Prerequisite: ANTH 344.*

### **448**

#### **PRACTICUM IN ANTHROPOLOGY**

Provides students with the opportunity to apply a socio-cultural perspective to any of a number of organizational settings. As the basis for the course, students arrange an internship. At the same time as students are contributing time and talent to the organization in question, they will also be observing, from a socio-cultural perspective, the events, activities, structure, and dynamics of the organization. These experiences are supplemented by academic readings, a regularly scheduled seminar, and the keeping of a detailed field journal. *Prerequisite: Consent of instructor. May be repeated once for credit with consent of instructor when projects are different.*

### **470-479**

#### **INTERNSHIP**

Anthropology internship experiences, such as with the Lycoming County Historical Museum, are available.

### **N80-N89**

#### **INDEPENDENT STUDY**

An opportunity to pursue specific interests and topics not usually covered in regular courses. Through a program of readings and tutorials, the student will have the opportunity to pursue these interests and topics in greater depth than is usually possible in a regular course.

### **490-491**

#### **INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

## **SOCIOLOGY (SOC)**

### **Major Requirements**

#### **1. Six Core Courses:**

|         |                            |
|---------|----------------------------|
| SOC 110 | Contemporary Social Issues |
| SOC 245 | Decoding Social Things     |
| SOC 430 | Sociological Research      |

#### **Two Stratification courses from the following:**

|         |                                   |
|---------|-----------------------------------|
| SOC 240 | Sociology of Race and Ethnicity   |
| SOC 241 | Sociology of Gender and Sexuality |
| SOC 242 | Reproduction of Social Inequality |

#### **One Methods course from the following:**

|         |                                      |
|---------|--------------------------------------|
| SOC 312 | Social Networks                      |
| SOC 325 | Program Evaluation and Grant Writing |
| SOC 330 | Research Methods                     |

#### **2. Four Elective Courses:**

Select four courses from the following list, one of which must be at the 300 level or above.

- SOC electives
- EDUC 215/225 (counts as one course)
- SPLED 230
- EDUC 465 (counts as two courses)
- One from: CJCR 300; ANTH 103, 210, 230, 310, 311, 334, 344; or GSWS 300

Students may not count SOC 222, 325, or 448 for both a Sociology major and Human Services minor.

### **Capstone Requirement**

All majors must successfully complete SOC 430.

### **Minor Requirements**

A minor in **Human Services** requires SOC 222, 325;; SOC 240, or 241, or 242; SOC 448, and a statistics course of at least 3 credits. The program will consider supporting an ASC appeal for other 4-credit internships or practica.

A minor in **Sociology** requires SOC 110, 240 or 241, and three SOC electives, one of which must be 300 or higher.

Students may not count SOC 222, 325, or 448 for both a Sociology minor and Human Services minor.



**110**

**CONTEMPORARY SOCIAL ISSUES**

This introductory course teaches basic sociological concepts and methods as they apply to contemporary social issues. *Fulfills Domestic Cultural Diversity Requirement. Not open to juniors or seniors except with consent of instructor.*

**200**

**SPECIAL TOPICS IN SOCIOLOGY**

Study of selected sociological problems, theorists, or movements. Sample topics include sociology of sport, environmental sociology, art and society, sociology of childhood, and media and culture. *May be repeated for credit with consent of department when topics are different.*

**208**

**FOOD CULTURE & STATUS**

Food is a central part of human life, not only because it sustains our physical wellbeing, but also because it plays a central role in culture, social inequality, and social status. This course explores how what and how we eat is both a product of and shapes social structures and inequalities, with a focus on three main areas: issues around food access and inequality, the role of food in cultural meaning-making, and how food and consumption patterns are a form of cultural capital. By examining health as a social construct, students learn about the institutions that shape food access, culture, and choices, and the interconnected and complex ways that social forces interact with the choices we make about food every single day. *Fulfills Domestic Diversity Requirement.*

**210**

**SOCIOLOGY OF MENTAL HEALTH AND ILLNESS**

An examination of the concepts of mental health and mental illness from a sociological perspective. Major issues addressed include a consideration of the meaning and implications of the term “mental illness,” an examination of the most important sociological and social psychological theories of mental illness and mental health, an examination of the social responses that American culture has traditionally afforded the condition of mental illness, and an analysis of historical and modern methods of treatment. *Alternate years.*

**212**

**CONTAGION**

You are likely familiar with common viral and bacterial contagions, but did you know that many other things can spread contagiously as well, like ideas, behaviors, products, and even emotions? This course covers a variety of types of contagions, what makes something contagious, and the social and structural conditions that promote or hinder the spread of contagions. Students learn about the network perspective and core contagion concepts and processes, specific contagion events in recent history, and how contagion characteristics, social context, and social response all contribute to the spread of contagions. *Fulfills Domestic Cultural Diversity and Global Cultural Diversity Requirement.*

**222**

**INTRODUCTION TO HUMAN SERVICES**

Intended for students interested in learning about, or entering, the human services profession. A

review of the history, the range, and the goals of human services together with a survey of various strategies and approaches to human problems. Includes a community service component. *Not open to juniors or seniors except with consent of instructor.*

**228**

#### AGING AND SOCIETY

Analysis of cross-cultural characteristics of the aged as individuals and as members of groups. Emphasis is placed upon media portrayals as well as such variables as health, housing, socioeconomic status, personal adjustment, retirement, and social participation. Utilizes sociological, social psychological, and anthropological frames of reference in analysis and description of aging and its relationship to the individual and society. *Alternate years.*

**240**

#### SOCIOLOGY OF RACE AND ETHNICITY

Provides a study of racial/ethnic groups within the framework of American cultural values. An analysis includes historical, cultural, and social factors underlying racial/ethnic conflict. The course provides an analysis of the social construction of race/ethnicity and the social implications of those constructions. *Fulfills Domestic Cultural Diversity Requirement.*

**241**

#### SOCIOLOGY OF GENDER AND SEXUALITY

Focuses on cultural constructions of femininities and masculinities across cultures and throughout history. The course provides an analysis of theories of gender/sexuality differences, gender/sexuality as an organizing principle of social interactions, and the gendered/sexualized meaning of social institutions such as education, work, and military. *Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

**242**

#### REPRODUCTION OF SOCIAL INEQUALITY

Despite national ideals of meritocracy, the US demonstrates high levels of social reproduction of class inequality, meaning children tend to end up in similar social positions as their parents when they grow up. This course explores the institutions and processes that reproduce social inequality during childhood and adolescence, with a focus on how class, race, and gender shape experiences within these institutional settings. Students learn how key institutions including family, neighborhoods, and school play a role in creating, maintaining, reproducing, or dismantling inequality early in life, and examine the social processes that maintain, exacerbate, or alleviate stratification. This course challenges students to critically examine the meritocracy of contemporary US society and think about inequality as a complex process that is created, maintained, and reproduced from the earliest years of life. *Fulfills Domestic Diversity Requirement.*

**245**

#### DECODING SOCIAL THINGS

Why do we follow social norms without thinking about them? How do power, culture, and identity shape our everyday choices? This course introduces students to the big ideas of sociology by exploring the hidden patterns, structures, and “rules” that guide social life. We

cover classic and contemporary sociological perspectives to decode the social world—from friendships and families to media, politics, and inequality. Students gain tools for thinking critically about how society works and how it might change.

### **310**

#### **SOCIOLOGY OF HEALTH, ILLNESS, AND HEALTHCARE**

Using the sociological perspective, students explore how social factors such as age, gender, social class, and race/ethnicity influence personal experiences of health, illness, and health care utilization. This course challenges assumptions about health, illness, and health care. Topics may include the social construction of illness and health, a critique of the “sick role,” the meaning and experience of disability, chronic pain and chronic illness, an exploration of global health care systems, and the challenges and opportunities facing both consumers and providers of health care. *Fulfills Global Diversity Requirement.*

### **312**

#### **SOCIAL NETWORKS**

An introduction to network science with a focus on stratification in social science applications. The social networks perspective focuses on connections between individuals and groups to ask questions about how our location in the social world and who we know matters. While the term social networks and related phrases, such as networking, social media, and six degrees of separation, have become mainstream since the early 2000s, the scientific study of networks has been around since the 1930s and the field has since grown tremendously in both the social and natural sciences. This course introduces social network analysis theory and methods, as well as surveys some of the substantive contributions to sociology and social science research pertaining to social inequality. *Prerequisite: One SOC course or consent of instructor.*

### **320**

#### **SPECIAL TOPICS IN SOCIOLOGY**

Study of selected sociological problems, theorists, or movements. Sample topics include sociology of education, environmental sociology, art and society, sociology of childhood, and media and culture. *Prerequisite: SOC 110 or junior or senior standing. May be repeated for credit with consent of department when topics are different. Alternate years.*

### **325**

#### **PROGRAM EVALUATION AND GRANT WRITING**

Introduces a range of basic quantitative and qualitative research methods with emphasis on application of these to the evaluation of social programs. Topics include observational and qualitative methods, survey and interview (structured and unstructured) techniques, using data from records and archives, and data analysis. Students learn about the application of the research process and skills in all phases of assessing a social policy and developing a social program, including needs assessment, implementation analysis, and evaluation of policy or program effectiveness. In addition, a portion of the course covers the process of grant writing in the non-profit arena. The class completes either a community assessment or a program evaluation and prepares a grant application for a local non-profit human service organization. *Prerequisites: One SOC course or consent of instructor.*

**330****RESEARCH METHODS I**

An introduction to sociological research methods. Students examine fundamental concepts in research such as sampling and bias, types of methods, research ethics, and the benefits and limitations of various methodological approaches. *Prerequisites: One SOC course or consent of instructor.*

**334****IMMIGRATION**

A course on US immigration and assimilation that encompasses America's multicultural diversity and covers the historical significance of US immigration and the experience of immigrants from 1492 until the present day. Explores comparisons between when and why groups immigrate as well as their various successes and failures. Facilitates an increased understanding of cultural identity by providing a forum to discuss and better understand cultural differences; investigates the mechanisms and consequences of prejudice, oppression, and discrimination on American minority groups; and explores personal beliefs about human differences. *Prerequisite: SOC 110 or junior or senior standing. Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

**430**

**SOCIOLOGICAL RESEARCH** Building on the research skills acquired during a first course in research methodology, students complete an original quantitative or qualitative research project utilizing one of the many data collection strategies available to sociologists such as field work, content analysis, surveys, qualitative interviews, experimental design, secondary data analysis, network analysis, or program evaluation. Topic selection is of individual student's choice. *Prerequisite: A statistics course of at least 3 credits; SOC 245; and one course from SOC 312, 325, 330 or CJCR 343; or consent of instructor.*

**448****PRACTICUM IN SOCIOLOGY**

Provides students with the opportunity to apply a socio-cultural perspective to any of a number of organizational settings. As the basis for the course, students arrange an internship. At the same time as students are contributing time and talent to the organization in question, they will also be observing, from a socio-cultural perspective, the events, activities, structure, and dynamics of the organization. These experiences are supplemented by academic readings, a regularly scheduled seminar, and the keeping of a detailed field journal. *Prerequisite: Consent of instructor. May be repeated once for credit with consent of instructor when projects are different.*

**470-479****INTERNSHIP**

Interns in sociology typically work off campus with social service agencies under the supervision of administrators.

**N80-N89****INDEPENDENT STUDY**

An opportunity to pursue specific interests and topics not usually covered in regular courses. Through a program of readings and tutorials, the student has the opportunity to pursue these interests and topics in greater depth than is usually possible in a regular course.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

## ARCHAEOLOGY (ARCH)

Professors: Chandler, S. Johnson

Associate Professors: Adams, Munson (Coordinator)

Assistant Professor: Knauth

- Major: Archaeology
- Courses required for major: 12 (not including zero or 1 credit courses)
- Non-credit Colloquium: 1 semester
- Capstone requirement: Practical Experience, ARCH 447 Research Project, and ARCH 448 Colloquium Presentation
- Minor: Archaeology

Archaeology is the study of the human past through material remains. This interdisciplinary major provides students with a strong foundation in the major concepts, methods, and theories of the field, and allows them to focus on past cultures and societies in the Americas and the Mediterranean world (Ancient Near East, Classical Mediterranean, or early Medieval Europe). Students majoring in archaeology can also choose topics and specialty areas of particular interest to them, with opportunities for collaboration with ongoing excavations and other forms of supervised field research. Beyond a career in archaeology, students also translate the skills and knowledge they acquire in archaeology into museum curation, historic preservation, cultural resource management, education, and antiquities trade law enforcement, among many other career pathways.

### Major Requirements

The major consists of twelve courses, at least three of which must be at the 300-level or above, plus a non-credit Colloquium and a Practical Experience, as follows:

#### A. Core courses in Archaeology and Anthropology, plus Archaeology Colloquium:

- ANTH 102    Patterns in Prehistory
- ARCH 105    History from Things
- ARCH 200    Archaeological Principles
- ARCH 427    Archaeological Theory and Method
- ARCH 447    Archaeological Research Design
- ARCH 448    Archaeology Colloquium (non-credit)

#### B. Three Culture-Specific Courses:

Take two courses from the same Culture Area list, one of which must be an ARCH course. Take one additional course from either of the Culture Area lists or ARCH/ANTH/REL 401.

### **Culture Area 1 – Americas (Latin America, Mesoamerica, North America)**

|               |                                                   |
|---------------|---------------------------------------------------|
| ARCH 231      | Mesoamerican Cultures and Society                 |
| ARCH/ANTH 331 | Making the Maya World                             |
| ANTH 230      | Anthropology of Latin America                     |
| ARHI 342      | Art and Politics in Latin America                 |
| ENGL 222      | Early American Literature                         |
| ENGL 229      | African American Literature                       |
| HIST 221      | Latin America                                     |
| HIST 225      | Indigenous Early America                          |
| HIST 226      | Era of the American Revolution                    |
| HIST 230      | African American History                          |
| HIST 233      | Civil War and Reconstruction                      |
| HIST 324      | Early American Law and Society                    |
| HIST 402      | Revel, Riot, and Rebellion in Early America       |
| PSCI 245      | Latin American Politics                           |
| SPAN 311      | Hispanic Culture                                  |
| SPAN 321      | Special Topics in Hispanic Literature and Culture |
| SPAN 426      | Special Topics in Hispanic Literature and Culture |

### **Culture Area 2 - Ancient Near East, Classical Mediterranean, Medieval Europe**

|              |                                                 |
|--------------|-------------------------------------------------|
| ARCH/REL 226 | Archaeology of Ancient Israel and its Neighbors |
| ARCH 227     | Building Mediterranean Empires                  |
| ENGL 220     | British Literature I                            |
| ENGL 311     | Medieval Literature                             |
| ENGL 335     | Chaucer                                         |
| HIST 210     | Ancient Greece and Rome or                      |
| HIST 211     | From Rome to the Vikings                        |
| HIST 212     | Medieval Europe and its Neighbors               |
| HIST 232     | The Rise of Islam                               |
| HIST 334     | Origins of Europe                               |
| HIST 336     | Crusades Conflict and Accommodation             |
| MDVS 200     | Introduction to Medieval Studies                |
| PHIL 201     | Ancient Greek Philosophy                        |
| PHIL 202     | Medieval Philosophy                             |
| REL 113      | Introduction to the Old Testament               |
| REL 114      | Introduction to the New Testament               |
| REL 213      | Medieval Women's Religious Literature           |
| REL 221      | The Hellenistic-Roman World                     |
| REL 228      | History and Culture of the Ancient Near East    |
| REL 333      | Old Testament Women                             |
| REL 337      | Biblical Topics                                 |

**C. Two electives in Comparative Perspectives, at least one of which must be ARCH, from:**

|                   |                                        |
|-------------------|----------------------------------------|
| ANTH 232          | Environmental Anthropology             |
| ANTH 310          | Food and Culture                       |
| ANTH 320          | Special Topics in Anthropology         |
| ANTH 334          | Economic Anthropology                  |
| ARCH/ANTH 210     | Talking Trash                          |
| ARCH/ANTH/REL 233 | Archaeology of Ritual                  |
| ARCH/ANTH 311     | Power and Prestige in the Past         |
| ARCH 220/320      | Special Topics in Archaeology          |
| ARHI 339          | Gender and Sexuality in Art            |
| ARHI 344          | Race and Ethnicity in Art              |
| HIST 329          | Empires and Resistance                 |
| HIST 338          | Rights, Reform, and Protest            |
| HIST 342          | Women and Reform                       |
| PSCI 249          | Special Topics in Comparative Politics |
| SOC 240           | Sociology of Race and Ethnicity        |
| SOC 241           | Sociology of Gender and Sexuality      |

**D. Any two courses from any of the Specialty Areas listed below:**

**Specialty Area 1 – Visual Analysis (Art/Art History)**

|               |                                                          |
|---------------|----------------------------------------------------------|
| ARCH/HIST 470 | Internship                                               |
| ARHI 222      | Introduction to Art History I                            |
| ARHI/ARCH 332 | Ancient Art and Archaeology                              |
| ARHI 335      | From Cabinets of Curiosities to Contemporary Art Museums |
| ART 111       | Drawing                                                  |
| ART 119       | Ceramics I                                               |
| ART 229       | Ceramics II                                              |
| ART 227       | Photography                                              |
| ART 240       | Digital Photography                                      |

Other Art History or Studio Art courses by Academic Standards Committee appeal if not already counted.

**Specialty Area 2 – Language/Linguistics**

|                     |                                 |
|---------------------|---------------------------------|
| ENGL 219            | History of the English Language |
| GRK 102 (or above)  |                                 |
| HEBR 102 (or above) |                                 |
| LAT 102 (or above)  |                                 |
| SPAN 111 (or above) |                                 |



### **Specialty Area 3 – STEM Fields**

|              |                                                        |
|--------------|--------------------------------------------------------|
| ARCH 403     | Laboratory Methods in Archaeology                      |
| ASTR 333     | Ancient Astronomy                                      |
| BIO 222      | Genetics                                               |
| BIO 224      | Ecology                                                |
| BIO 225      | Plant Sciences                                         |
| BIO 338      | Human Anatomy                                          |
| CHEM 219     | Organic and Biochemistry                               |
| CHEM 222/223 | Organic Chemistry I / Organic Chemistry Laboratory I   |
| CHEM 224/225 | Organic Chemistry II / Organic Chemistry Laboratory II |
| CPTR 125     | Introduction to Computer Science                       |
| DSCI 101     | Introduction to Data Science                           |
| ENV 200      | Introduction to Geology                                |
| ENV 215      | Introduction to Geographic Information Systems (GIS)   |
| ENV 220      | Environmental Biology                                  |
| MATH 130     | Modelling with Matrices                                |
| MATH 123     | Introduction to Statistics                             |
| MATH 214     | Multivariable Statistics                               |
| SOC 212      | Contagion                                              |
| SOC 312      | Social Networks                                        |

### **Capstone Requirements**

The capstone experience consists of the following three components:

- 1) **Senior Seminar:** complete ARCH 447, including design and presentation of a substantial independent Research Project using archaeological data.
- 2) **Practical Experience:** participate in an approved archaeological field school, survey, or field research project, or complete a relevant internship. This need not be for credit, but these experiences typically involve at least 140 hours in the field, and students must keep and submit a journal documenting the experience. Optional credit may be earned as ARCH/ANTH/REL 401 Field Archaeology, ARCH/ANTH 403 Laboratory Methods, or ARCH/ANTH/ARHI/ART/HIST 470 Internship.
- 3) **Colloquium Presentation:** give a presentation in ARCH 448, normally based on the seminar research project and/or practical experience, presenting significant independent research relating to archaeology.

### **Minor Requirements**

A minor in Archaeology consists of five courses, including ARCH 105 and 200; one culture-specific Archaeology course ARCH/REL 226, ARCH 227, ARCH 231, or ARCH/ANTH 331; one additional ARCH course; and one additional course from ARCH, ANTH, or ENV 215.

**105**

### **HISTORY FROM THINGS**

An introduction to basic archaeological methods as traditionally and currently practiced in the Mediterranean region, ancient Near East, and Europe, integrated with a diverse series of case studies, to learn how archaeologists reconstruct history from things. Emphasis is placed on the integration and interplay of archaeological, historical, art historical, and scientific approaches, ranging from basic survey and excavation techniques to analysis of contemporary inscriptions and artistic depictions, in conjunction with analysis of architectural features and material culture. A practical lab component provides students with hands-on opportunities to practice some of the techniques most commonly utilized in the field. *Fulfills Global Cultural Diversity Requirement.*

**200**

### **ARCHAEOLOGICAL PRINCIPLES**

An introduction to the major concepts and principles of archaeological research and the techniques used to study the human past through the retrieval, analysis, and interpretation of material remains. Includes a practical laboratory component.

**210**

### **TALKING TRASH: ARCHAEOLOGY OF EVERYDAY LIFE**

Examines the material remains and built environments that are the product of people's everyday life. Focusing on the household as a central analytical unit, students investigate the residential spaces and things that people produce and consume in domestic contexts in order to study past demographic patterns, social interactions and status, subsistence practices, divisions of labor, as well as group ideology and communal practices in ancient human societies. Case studies drawn from ethnography and archaeology examine the patterns of everyday life in the ancient Near East, Mediterranean, and the Americas. *Cross-listed as ANTH 210. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**220**

### **SPECIAL TOPICS IN ARCHAEOLOGY**

Study of selected archaeological topics. *May be repeated for credit with consent of instructor when topics are different. Credit may not be earned for both ARCH 220 and 320 on the same topic.*

**226**

### **ARCHAEOLOGY OF ANCIENT ISRAEL AND ITS NEIGHBORS**

A brief introduction to basic archaeological method as currently practiced in the eastern Mediterranean region and an in-depth study of the typological development of architecture, mortuary practices, artifacts and material culture of ancient Israel and Canaan (the land of the Bible) from representative excavations through different historical periods. Special attention is given to the role of archaeology in reconstructing the world in which biblical literature originated, along with archaeological results that help illuminate or clarify the biblical text. *Cross-listed as REL 226. Fulfills Global Cultural Diversity Requirement. Alternate Years.*

**227**

### **BUILDING MEDITERRANEAN EMPIRES**

From Alexander the Great to Constantine, from Charlemagne to the Crusades, empires were not just “conquered,” they were built – with city planning and infrastructure, public architecture, and establishment of cultural expectations for religion, language, production and trade, patronage, education, law, athletics, art and theatre. Students examine the archaeology, art, and architecture of the Hellenistic, Roman, and Early Medieval eras of the Mediterranean region, to uncover significant trends in the typological development of ancient material remains of various categories within their historical and cultural contexts. An interdisciplinary approach considering a variety of lines of material evidence is used to reveal ancient methods of building and projecting power in these slices of ancient history, and how this affected the lives of ordinary people who lived there. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**231**

### **MESOAMERICAN CULTURES AND SOCIETY**

An overview of the Olmec, Maya, and Aztec societies, and other native peoples of Mexico and Central America, including the chronological development of cultures and related key topics. Emphasis on the variability and interactions among individuals and groups by age, gender, ethnicity, class, and politics during pre- and post-conquest times. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**233**

### **ARCHAEOLOGY OF RITUAL**

In-depth cross-cultural study of the archaeological remains of ancient ritual practices. While the meaning of ancient rituals is not directly accessible to us today, archaeologists study the spaces, objects, actors, and material residues of past ritual practices to understand their role and significance in past societies. Case studies drawn from the ancient Near East, Mediterranean, and the Americas. *Cross-listed as ANTH 233 and REL 233. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**311**

### **POWER AND PRESTIGE IN THE PAST**

In-depth analysis of the development and operation of state-level societies from anthropological and archaeological perspectives. Topics include the emergence of social inequality, definitions of state and power, political organization, collective action, and the role of ideology in complex societies. Case studies drawn from the ancient Near East, Mediterranean, and the Americas. *Cross-listed as ANTH 311. Prerequisite: One 4-credit ANTH course or junior or senior standing. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**320**

### **SPECIAL TOPICS IN ARCHAEOLOGY**

Study of selected archaeological topics, theorists, or methods. Sample topics include household archaeology, archaeology of power, archaeology of ritual, origins of social inequality, and ceramic analysis. *Prerequisite: ARCH 200 or consent of instructor. May be repeated for credit with consent of instructor when topics are different. Credit may not be earned for both ARCH 220 and 320 on the same topic.*

**331****MAKING THE MAYA WORLD**

A wide-ranging exploration of ancient Maya civilization and of the various ways archaeologists, anthropologists, linguists, historians, and indigenous communities have examined and manipulated the Maya past. From the thrill of decipherment to painstaking and technical artifact studies, from tropes of long-hidden mysteries rescued from the jungle to New Age appropriations of pre-Columbian rituals, students examine how models drawn from archaeology, anthropology, art history, ethnography, political science, and popular culture have shaped current understandings of the ancient Maya world, and how the Maya world has, at times, resisted easy appropriation and defied expectations. *Cross-listed as ANTH 331. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**332****ANCIENT ART AND ARCHAEOLOGY**

An exploration of the ancient cultures of the Near East and Mediterranean as elucidated by modern archaeological research, through examination of their art and architecture. *Cross-listed as ARHI 332. Fulfills Global Cultural Diversity Requirement.*

**348****JUNIOR ARCHAEOLOGY COLLOQUIUM**

A forum for senior presentations, faculty and outside speakers relating to archaeology, plus occasional outside workshops and events. This course is a prerequisite for ARCH 448. Students considering study abroad in the fall of their junior year should take ARCH 348 in the fall of their sophomore year if possible. *1-2 hours per week. Pass/Fail. Non-credit seminar.*

**401****FIELD ARCHAEOLOGY**

Participation in an approved archaeological dig, survey, or field research program. Includes instruction in excavation or survey techniques, recording and processing of artifacts, and exposure to the wider results of related excavation and research and the use of archaeology as a tool for elucidating historical and cultural changes. This course acquaints students with the basic techniques and procedures used in modern archaeology through intensive hands-on fieldwork. *Cross-listed as ANTH 401, and as REL 401 for some Mediterranean and Near Eastern digs with approval. Prerequisite: ARCH 200 or consent of instructor. Special fees apply. May Term or Summer Sessions only.*

**403****LABORATORY METHODS IN ARCHAEOLOGY**

Acquaints students with the basic methods and techniques used to analyze archaeological materials. Students gain practical experience in the description, inventory, and analysis of artifacts, processing of specimens, and data documentation. Includes lectures, laboratory, and museum visits. *Cross-listed as ANTH 403. Prerequisite: ARCH 200 or consent of instructor. Special fees apply. May Term or Summer Sessions.*

**421****ARCHAEOLOGICAL FIELD SUPERVISION**

Participation in an archaeological excavation or field school program at the level of assistant supervisor or above. Includes instruction in on-site supervision of daily digging, record-keeping, and interpretation of finds, and/or specialized training in excavation project coordination, data processing, or analysis of specific types of material culture. Research project required.

*Prerequisite: ANTH/ARCH/REL 401 or equivalent experience. Special fees apply. May Term or Summer Sessions only.*

**427****ARCHAEOLOGICAL THEORY AND METHOD**

This seminar acquaints the student with the history of archaeological thinking over the past century. Current archaeological theory is covered in some detail; students learn to identify, examine, and evaluate specific theories. *Prerequisite: ANTH 102, ARCH 200, and one course in ARCH numbered 200 or above; or consent of instructor.*

**447****ARCHAEOLOGICAL RESEARCH DESIGN**

Building on ARCH 427, students design and present a substantial research project that articulates a research question or hypothesis with a logical plan of data collection and analysis, and uses archaeological data to address a specific topic or issue. *Prerequisite: ARCH 427. Corequisite: ARCH 448.*

**448****SENIOR ARCHAEOLOGY COLLOQUIUM**

A forum for senior presentations, faculty and outside speakers relating to archaeology, plus occasional outside workshops and events. *1-2 hours per week. Non-credit seminar. Prerequisite: ARCH 348 or consent of instructor.*

**470-479****INTERNSHIP**

Interns in archaeology usually work in historical museums or art museums under the supervision of a museum director/curator/archaeologist and a member of the faculty. Course can also be designated as ANTH, ARHI, ART, HIST, or REL and taken through the relevant department.

**N80-N89****INDEPENDENT STUDY**

This course represents an opportunity to pursue specific research interests not usually covered in regular courses. Course can also be designated as ANTH, ARHI, ART, HIST, or REL and taken through the relevant department.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

## **ART (ART, ARHI)**

Professor: Tran

Associate Professors: Goodman, Rentsch

Assistant Professors: Moreno-Lee (Chair), Sánchez

- Majors: 3D Animation, Art History, Graphic Design, Painting, Photography, Printmaking, Sculpture, Studio Art
- Courses required for all majors: 11 (not including zero or 1 credit courses)
- Non-credit Colloquium: Every semester as a declared major
- Capstone requirement (Studio Art): Senior exhibit and ART 446 or ARHI 310
- Capstone requirement (3D Animation, Graphic Design, Painting, Photography, Printmaking, Sculpture): Senior exhibit and ART 446
- Capstone requirement (Art History): ARHI 447
- Minors: 3D Animation, Art History, Graphic Design, Painting, Photography, Sculpture

## **STUDIO ART (ART)**

### **3D Animation Major Requirements**

ART 111 Drawing I

ART 113 Introduction to Digital 3D Modeling

ART 213 Introduction to 3D Character Animation

ART 243 Introduction to Digital Art

ART 313 Advanced Topics in 3D Animation

ART 344 Time-Based Digital Media

ART 413 Animation Workshop

ART 446 Studio Research

One additional elective from ART (recommendations: ART 116, 212, 226, or 240) or FVA

200 Digital Film and Video I

Any two ARHI courses numbered 222 or higher

ART 248 Art Colloquium every semester after declaring an Art major

### **Graphic Design Major Requirements**

ART 111 Drawing I

ART 212 Color and Design

ART 240 Digital Photography I

ART 243 Introduction to Digital Art

ART 344 Time-Based Digital Media

ART 442 Special Projects in Graphic Design

ART 446 Studio Research

ART 470 Internship or ART 449 Art Practicum

FVA 200 Digital Film and Video I

Any two ARHI courses numbered 222 or higher

ART 248 Art Colloquium every semester after declaring an Art major

Students are encouraged to take ART 221 Drawing II and ART 340 Digital Photography.

### **Painting Major Requirements**

ARHI 222 Introduction to Art History I

ARHI 223 Introduction to Art History II

ART 111 Drawing I

ART 212 Color and Design

ART 220 Painting I

ART 221 Drawing II

ART 330 Painting II

ART 446 Studio Research

One ARHI course numbered 300 or above

Two additional electives from ART (recommendations: ART 113, 226, 227, 228, 243, 440, or 449)

ART 248 Art Colloquium every semester after declaring an Art major

### **Photography Major Requirements**

ARHI 222 Introduction to Art History I

ARHI 223 Introduction to Art History II

ART 111 Drawing I

ART 227 Photography I

ART 240 Digital Photography I

ART 337 Photography II

ART 340 Digital Photography II

ART 446 Studio research

Two additional electives from ART (recommendations: ART 212, 217, or 243) or FVA 200 Digital Film and Video I

One ARHI course numbered 300 or above

ART 248 Art Colloquium every semester after declaring an Art major

### **Printmaking Major Requirements**

ARHI 222 Introduction to Art History I

ARHI 223 Introduction to Art History II

ART 111 Drawing I

ART 221 Drawing II

ART 228 Printmaking I

ART 338 Printmaking II

ART 446 Studio Research

Three additional electives from ART (recommendations: ART 113, 212, 226, 227, 240, 243, or 449)

One ARHI course numbered 300 or above

ART 248 Art Colloquium every semester after declaring an Art major

### **Sculpture Major Requirements**

ARHI 222 Introduction to Art History I

ARHI 223 Introduction to Art History II

ART 111 Drawing I

ART 116 Three-Dimensional Design

ART 225 Sculpture I

ART 226 The Figure

ART 335 Sculpture II

ART 446 Studio Research

Two additional electives from ART (recommendations: ART 113, 119, 212, 213, 220, 221, 227, 228, 240, 243, or 449) or FVA 200

One ARHI course numbered 300 or above

ART 248 Art Colloquium every semester after declaring an Art major

### **Studio Art Major Requirements**

For students seeking teaching certification in Art.

ARHI 222 Introduction to Art History I

ARHI 223 Introduction to Art History II

ART 111 Drawing I

ART 116 Three-Dimensional Design

ART 119 Ceramics I

ART 212 Color and Design

ART 220 Painting

ART 227 Photography I

ART 228 Printmaking I

ART 243 Introduction to Digital Art

ART 446 Studio Research or ARHI 310 History and Practice of Art Education (for students seeking PK-12 Art certification)

ART 248 Art Colloquium every semester after declaring an Art major

State requirements for certification to teach change regularly. Please check with the Education Department for the most current PA state requirements.



## Capstone Requirements

The senior exhibition, which is the capstone achievement for all art majors, serves to assess students' expertise in their chosen specialty. Art majors produce a significant body of work during the fall semester of their senior year. The work is juried by an outside expert, such as a museum director, gallery owner, artist, or, under certain circumstances, the art faculty of Lycoming College. Selected work that is included demonstrates a technical and conceptual proficiency deemed successful by the art professional who is acting as a juror. Selected work will then be displayed in the senior exhibition and is therefore open to public discourse, scrutiny, interpretation, and enjoyment. Inclusion in the spring senior exhibition is a requirement for all Studio Art majors.

Students in 3D Animation, Graphic Design, Painting, Photography, Printmaking, and Sculpture majors must also complete ART 446. Students in the Studio Art major must complete ART 446 or ARHI 310.

## Minor Requirements

There are five studio art minors offered by the Art Department. Art majors may add any of the minors below provided they are distinct from their major and contain at least two unique courses. Requirements for each follow:

**3D Animation:** ART 113, 213, either 313 or 344, 413, one ARHI courses, and one course from the following: FVA 200 or ART 212, 220, 226, 240, or 243.

**Graphic Design:** ART 111, 212, 240, 243, and 442, and one ARHI course

**Painting:** ART 111, 212, 220, 221, 330, and one ARHI course

**Photography:** ART 212, 227, 240, 337, 340, and one ARHI course

**Sculpture:** ART 111, 116, 225, 226, either 119 or 335, and one ARHI course

## ART (ART)

### 111

#### DRAWING I

An introduction to the fundamentals of the two-dimensional arts, the materials and techniques of drawing, and current concepts and practices.

### 113

#### INTRODUCTION TO DIGITAL 3D MODELING

Introduces students to the concept and practice of digital 3D Modeling. Topics include modeling, texturing, digital-sculpting, lighting, and rendering. Students learn the fundamentals of hard surface and organic modeling.

**116**

**THREE-DIMENSIONAL DESIGN**

An introduction to the broad range of techniques, materials, and processes of three-dimensional art. Investigation of formal, theoretical, and conceptual issues.

**119**

**CERAMICS I**

Pottery design as it relates to function of vessels and the design parameters imposed by the characteristics of clay. The techniques of ceramics are taught to encourage expression rather than to dispense merely a technical body of information.

**127**

**INTRODUCTION TO DIGITAL PHOTOGRAPHY**

Introduction to the techniques and aesthetics of color and digital photography and to basic image correction and archival printing techniques. Students learn imaging techniques with Adobe PhotoShop, work with mega-pixel digital SLR cameras, and print and mat a final portfolio. Emphasis on conceptual and aesthetic aspects of photography. Includes exploration of culture through photography and travel. Mandatory pre-travel class sessions during spring semester will cover basics of Digital photography and PhotoShop. *This course does not count toward the art major. Fulfills the Global Cultural Diversity Requirement when travel is abroad. May term only.*

**212**

**COLOR AND DESIGN**

The creative process, elements, and principles of two-dimensional design and color theory through a variety of handmade and digital processes.

**213**

**INTRODUCTION TO 3D CHARACTER ANIMATION**

Focuses on concepts in 3D Animation and Rigging. Students implement principles of animation to character performance and motion.

**217**

**CELL PHONE PHOTOGRAPHY**

Explores the art of cell phone photography that goes beyond the mundane, using apps to enhance skills and techniques. Students learn how to create sophisticated images with intricate compositions, beautiful lighting, advanced techniques (such as long exposures), and professional post-production tools. Students develop new ways of seeing and enhancing their visual vocabulary by engaging in various photographic practices including portrait, documentary, landscape, and still-life photography. *This course requires a working cell phone with the ability to download apps.*

**220**

**PAINTING I**

Fundamentals of painting through lecture, demonstration and studio experience, and study of historical and current art movements.

**221**

**DRAWING II**

Exploration of a range of materials and concepts, with an emphasis on current approaches to drawing. *Prerequisite: ART 111.*

**225**

**SCULPTURE I**

Exploration of traditional and contemporary approaches to sculpture through a variety of processes, materials, and theory. Emphasis on personal creativity.

**226**

**THE FIGURE**

Study of the structures of the figure, use of the figure as a vehicle for personal expression, and discussion of historical and contemporary theory. Exploration of various materials, including clay and plaster.

**227**

**PHOTOGRAPHY I**

Development of technical skills in the use of photographic equipment (cameras, films, darkroom, printmaker) and competence in the areas of composition, form, light, picture quality, etc.

**228**

**PRINTMAKING I**

Introduction to the techniques of silkscreen, intaglio, monotype, and lithography printing. One edition of at least six prints must be completed in each area.

**229**

**CERAMICS II**

Continuation of Ceramics I. Emphasis on use of the wheel and technical aspects such as glaze making and kiln firing. *Prerequisite: ART 119.*

**240**

**DIGITAL PHOTOGRAPHY I**

Advanced study of the concepts and aesthetics of color photography, digital photography, and archival fine art digital printing. Emphasis is on shooting with digital SLR cameras and the exploration of the creative use of color and light within the photographic medium.

**243**

**INTRODUCTION TO DIGITAL ART**

Introduction to digital art including design, photography, illustration, and video. Covers the fundamentals of vector and raster imaging, typography, color, image compositing, and integration of traditional and digital media.

**248**

**ART COLLOQUIUM**

A non-credit seminar in which faculty, students, and invited professionals discuss and critique specific art and media exhibitions. Required of all Studio Art and Art History majors. *Meets 4-6 times each semester. Pass/Fail. Non-credit seminar.*

**313**

**ADVANCED TOPICS IN 3D ANIMATION**

Builds on the foundation of 3D character performance and other advanced topics such as simulations, motion capture, and real-time rendering. *Prerequisite: ART 213 or consent of instructor.*

**330**

**PAINTING II**

Experimentation with various media, subject matter and techniques, with reference to historical and current artistic movements. *Prerequisite: ART 220.*

**335**

**SCULPTURE II**

Advanced study of materials, technical processes, and concepts in sculpture, using a variety of materials, including casting, metal, foundry, and mixed-media installation. Discussion of historical and contemporary theory. *Prerequisites: ART 225 and either ART 116 or 226.*

**337**

**PHOTOGRAPHY II**

An extension of the skills developed in Photography I (ART 227) by continued growth in technical expertise including instruction in medium and large format cameras, studio photography, proficiency in black and white fine art printing, and exploration of photo art techniques. Emphasis on conceptual and aesthetic aspects of photography. *Prerequisite: ART 227 or permission of instructor.*

**338**

**PRINTMAKING II**

Continuation of Printmaking I (ART 228). Emphasis on multi-plate and viscosity printing. *Prerequisite: ART 228.*

**340**

**DIGITAL PHOTOGRAPHY II**

Studio course emphasizing critical analysis and development of a personal photographic portfolio and long-term projects, utilizing editing, sequencing, storytelling, and design. Studio photography using professional lighting equipment, medium format digital cameras, and large format printing. Emphasis on advanced digital post-production tools. *Prerequisite: ART 240 or consent of instructor.*

**344**

**TIME-BASED DIGITAL MEDIA**

Studio course using industry-standard software to create time-based media for artistic and commercial purposes. Content includes 2D digital animation, principles of animation, motion graphic animation, audio and video. *Prerequisite: ART 243 or consent of instructor.*

**413**

**ANIMATION WORKSHOP**

Focuses on the planning and execution of an animation production while working on a personal semester-long animated project. Topics include animation pre-production, production and post-production. *Prerequisite: ART 313 or consent of instructor.*

**440**

**PAINTING III**

Continued studio experience for advanced students with emphasis on personal direction and with reference to individual artists and art movements. *Prerequisite: ART 330.*

**441**

**DRAWING III**

Advanced drawing techniques and materials, with emphasis on a thesis presentation. *Prerequisite: ART 221.*

**442**

**SPECIAL PROJECT IN GRAPHIC DESIGN**

Concentrated research and creation of a series of projects in graphic design involving typography, illustration, photography, and branding, using industry-standard software. *Prerequisite: ART 243 or consent of instructor.*

**446**

**STUDIO RESEARCH**

Artistic research based on student-designed conceptual and formal interest in any studio art discipline. This is the capstone course for art majors in the 3D Animation, Graphic Design, Painting, Photography, Printmaking, and Sculpture tracks. Students produce a coherent body of artwork to be entered in the Annual Juried Senior Exhibition. Majors in the Generalist track are not required to take this course, but they are very strongly encouraged to take it to prepare their submissions for the Annual Juried Senior Exhibition. *Fall Semester only.*

**449**

**ART PRACTICUM**

Seminar of 150 hours of professional internship experience in graphic design, web design, photography, museum studies, audio, or video with companies, non-profit organizations, and museums. *Students must apply directly to the Art Department to arrange job placement before pre-registration to be eligible for this course. This course may be repeated once for credit when placements are different.*

**470-479****INTERNSHIP**

Internship experience in graphic design or commercial photography with companies and organizations. *Students must apply directly to the Art Department to arrange job placement before pre-registration to be eligible for this course.*

**N80-N89****INDEPENDENT STUDY**

This course represents an opportunity to pursue specific interests not usually covered in regular courses.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS****ART HISTORY (ARHI)**

The Art History major consists of courses in art history, studio art, and related disciplines. Students considering graduate school are encouraged to study a foreign language at the advanced level.

Art History majors are required to take the art colloquium each semester.

**Required of all students:**

- ARHI 222 Introduction to Art History I
- ARHI 223 Introduction to Art History II
- ARHI 447 Art History Research
- ART 248 Art Colloquium

**Choose any four additional 300-level ARHI courses.**

**Choose any two 100- or 200-level courses carrying the ART prefix.**

**Two Additional Courses outside the Art Department:**

Students must take at least two additional courses 200-level or above in the areas of Archaeology, Anthropology, Film Studies, History, Literature, Modern or Ancient Languages, Philosophy, Psychology, Religion, Sociology, or Theater, to be selected with their advisors.

**Capstone Requirement**

All majors must successfully complete ARHI 447.

**Minor Requirements**

A minor in Art History consists of ARHI 222, 223, three ARHI courses numbered 300 or higher, and one studio art course

For Studio Art majors, except those in the Graphic Design track, a minor in Art History consists of ARHI 222, 223, four ARHI courses numbered 300 or higher, and one studio art course.

## **222**

### **INTRODUCTION TO ART HISTORY I**

Offers an introductory overview of the diverse history of art and architecture internationally from the paleolithic era to the fourteenth century with an emphasis on the meaning of art in society. We study how art functioned in ancient civilizations, how objects and buildings expressed religious beliefs and customs, how art was created and experienced, how power was invested in images, and how these images affect us today. This course lays the groundwork for more advanced art history courses by introducing the skill of visual analysis and other interpretative tools of art historical research. *Fulfills Global Cultural Diversity Requirement.*

## **223**

### **INTRODUCTION TO ART HISTORY II**

Offers a global approach to the introduction of the history of art from the fourteenth century to the present, focusing on the functions and meanings of art in society. Emphasizes global interactions and the interrelationships between art, politics, and culture as we discover how issues expressed in the visual arts might provide insights into our world and how art affects us today. This course lays the groundwork for more advanced art history courses by introducing the skill of visual analysis and other interpretative tools of art historical research. *Fulfills Global Cultural Diversity Requirement.*

## **310**

### **HISTORY AND PRACTICE OF ART EDUCATION**

Essential topics in teaching art, including philosophy of art, lesson planning, and teaching methods. Observation of art classes in elementary and secondary schools in the greater Williamsport area. *Required of art majors in the PK-12 certification program.*

## **320**

### **VISUAL MEDIA IN THE DIGITAL AGE**

The historical study of new media, with emphasis on video and interactive art forms, in relationship to the development of television, the World Wide Web, and social networks. *Cross-listed as FVA 322. Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

## **331**

### **RECENT DEVELOPMENTS IN ART**

The roots of current trends in art, taking into account trans-national and global issues; historical references; news media; and identities of gender, ethnicity and region. *Fulfills Global Cultural Diversity Requirement.*

## **332**

### **ANCIENT ART AND ARCHAEOLOGY**

An exploration of the ancient cultures of the Near East and Mediterranean as elucidated by modern archaeological research, through examination of their art and architecture. *Cross-listed as ARCH 332. Fulfills Global Cultural Diversity Requirement.*

**334****ART OF THE RENAISSANCE**

Examines art produced in Western Europe from 1300–1600 in an expanded global context. Renaissance art is understood through the lens of its connections to Latin America, Africa, Asia, and the Middle East during this early period of colonization and global expansion. Students explore the ways artworks reflected shifts in social and political structures and increased internationalism that resulted in the exchange of people, objects, ideas, and materials. Students analyze images through the lens of cultural encounter and conflict in a variety of global contexts. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**335****FROM CABINETS OF CURIOSITIES TO CONTEMPORARY ART MUSEUMS**

Focuses on art museums, tracing their origins to sixteenth-century European cabinets of curiosities. While these collections of cultural artifacts, natural specimens, and works of art were assembled to stimulate the imagination as well as reflect the collector's wealth and their desire to categorize and "curate the world," they also represent a complex interplay of identity, imperialism, and colonial exploitation. Students examine the social role these cabinets played, how their legacy continued in the creation of modern art museums, and explore contemporary issues relating to museum collections today. *Prerequisite: ENGL 106.*

**336****ART OF THE BAROQUE**

Explores the Baroque style of art produced during the 17<sup>th</sup> and 18<sup>th</sup> centuries in a global perspective, focusing on its manifestations in Europe, Africa, Asia, and the Americas. Key issues discussed include the role of Baroque art in early modern politics, religion, and global trade; the relationship between cartography, collecting, and art during the period; the shifting role of the artist and artisan; and the use of art as a tool of cultural domination. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**339****GENDER AND SEXUALITY IN ART**

Gender and sexuality are often vital components of artistic practice that drive modes of expression and shape identities. This course examines the presence of these issues in art through case studies from the nineteenth century to the present-day in relation to constructions of gender and sexualities in their particular historical contexts. Students will be given the tools to recognize and challenge encoded assumptions regarding gender and sexuality in visual culture and the ways they often intersect with key issues of race and class. *Fulfills either Domestic or Global Cultural Diversity Requirement.*

**340****PERFORMANCE ART HISTORY**

Surveys the history and theory of performance art from the early twentieth century to the present. Informed by an understanding of the historical circumstances that led artists to push the boundaries of aesthetic expression, students explore the emergence and influence of radically experimental and interdisciplinary performance art practices within a global context. Students study modern and contemporary artists whose practices address gendered, racialized, and



laboring bodies. Key topics may include the body politic, institutional critique, surveillance, re-enactment, and sensorial visualities. *Fulfills Global Cultural Diversity requirements. Prerequisite: ENGL 106.*

### **342**

#### **ART AND POLITICS IN LATIN AMERICA**

Explores some of the most pivotal works of recent Latin American art. Students examine the ways artworks were created in tandem with, and often in direct response to, key moments of revolution, dictatorship, uneven development, and social upheaval in the region from the 1930s to today. Major issues under discussion include the shift from traditional to experimental methods of art making; creativity under conditions of violence; the intersection of art with issues of gender, race, ethnicity, and class; colonialism's historic and contemporary impact on society and representations; borders, diasporas, and immigration; and the potential for art to create positive change. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

### **344**

#### **RACE AND ETHNICITY IN US-AMERICAN ART**

Examines contemporary works by Black, Indigenous, Latinx, and Asian American artists that complicate traditional narratives of US-American history and disrupt the notion of a singular "American" identity. Issues under discussion include art as a tool of visibility and resistance; patriotism, nationalism, xenophobia and their representations; monuments, memorials, and their controversies; histories of racism in US-American visual and popular culture; borders, im/migrations, and diasporas; the remixing of cultural traditions; hybridity, otherness, and issues of personal and collective identities. *Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

### **345**

#### **ART AND ENVIRONMENT**

Explores the relationship between art and the environment from artworks that shaped environmental perspectives during the nineteenth century to more recent approaches by contemporary artists who interrogate climate injustice. Students consider nineteenth-century American landscape traditions that emerged in the context of US expansionism and critically reflect on the ways artists have participated in the historical misrepresentation of landscapes. Key topics may include the Land Art movement in the 1960s, Indigenous artists' resistance to resource extraction, and artists as activists who advocate for social and environmental justice. *Fulfills Domestic Cultural Diversity requirements. Prerequisite: ENGL 106.*

### **347**

#### **HISTORY OF PHOTOGRAPHY**

A historical survey of photography from its beginning as a commercial and scientific medium, emphasizing its emergence as a fine art, and including current practices within multimedia contexts. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**360****SPECIAL TOPICS IN ART HISTORY**

A study of selected artists or art historical issues, themes, or periods. *May be repeated for credit with consent of department when topics are different.*

**447****ART HISTORICAL METHODS AND RESEARCH**

This capstone focuses on the history and practice of interpreting art objects so that students may better position themselves as art historians. Students investigate a diverse range of theories, methodologies, and ethical debates that have come to shape the discipline of art history today.

Students produce their own substantial research project on a topic of their choosing that culminates in an advanced research paper and formal presentation to the Department.

*Prerequisite: ART 222 or 223 or consent of instructor.*

## ASTRONOMY AND PHYSICS (ASTR, PHYS)

Professors: Fisher (Chair), Kulp

Assistant Professors: Morris, Wilson

- Majors: Astronomy, Astrophysics, Biophysics, Computational Physics, Applied and Engineering Physics, Physics
- Courses required for Physics: 13 (B.A.) (not including zero or 1 credit courses)
- Courses required for Applied and Engineering Physics, Computational Physics, and Physics: 17 (B.S.) (not including zero or 1 credit courses)
- Courses required for Biophysics: 16 (B.S.) (not including zero or 1 credit courses)
- Courses required for Astronomy: 12 (B.A.) (not including zero or 1 credit courses)
- Courses required for Astrophysics: 16 (B.S.) (not including zero or 1 credit courses)
- Math prerequisite (not counted in major): MATH 127
- Non-credit Colloquium: 4 semesters
- Capstone requirement: ASTR or PHYS 448 (or research experience plus an additional course with departmental approval)
- Minors: Astronomy, Computational Physics, Physics

The department offers six majors in astronomy, applied and engineering physics, astrophysics, biophysics, computational physics, and physics.

### ASTRONOMY (ASTR)

The Department of Astronomy and Physics does not offer a B.S. degree in astronomy, but we do offer a B.S. degree in astrophysics. Students interested in a B.S. degree in astronomy should consider pursuing the astrophysics major.

The B.A. degree in astronomy requires courses in astronomy, physics, chemistry, and mathematics. The astronomy major prepares students for careers in industry, formal and informal education, and government agencies.

### Major Requirements

|              |                                                        |
|--------------|--------------------------------------------------------|
| ASTR 111     | Fundamentals of Astronomy                              |
| ASTR 211     | Data Mining the Astronomical Archives                  |
| ASTR 448     | Research topics                                        |
| CHEM 122/123 | General Chemistry I and General Chemistry Laboratory I |
| MATH 128     | Calculus with Analytic Geometry I                      |
| MATH 129     | Calculus with Analytic Geometry II                     |
| PHYS 225     | Fundamentals of Physics I                              |
| PHYS 226     | Fundamentals of Physics II                             |
| PHYS 227     | Modern Physics                                         |

One course from the following:

|               |                            |
|---------------|----------------------------|
| ASTR/PHYS 340 | The Invisible Universe     |
| ASTR 360      | Observational Astronomy    |
| PHYS 445      | Experimental Data Analysis |

Complete two additional astronomy courses numbered 212 or higher.

Astronomy majors are also required to successfully complete four semesters of ASTR 349/449 (non-credit colloquia).

Students interested in teacher certification should refer to the Department of Education listing.

### **Capstone Requirement**

All majors must successfully complete ASTR 448. This requirement may also be satisfied by doing an individual studies or honors project where the results would be presented at a departmental colloquium. The project pursued for ASTR 448 must be relevant to the student's concentration. Students who have successfully completed a summer REU, RUG, or equivalent research experience may request departmental approval to substitute off-campus experience plus an additional advanced astronomy or physics course not already required by the major in place of ASTR 448.

### **Minor Requirements**

A minor in astronomy consists of ASTR 111 211, and PHYS 225 plus any two additional courses selected from PHYS 226 or ASTR courses numbered 200 or higher.

## **000**

### **LABORATORY TEACHING METHODS**

Provides practical experience in laboratory teaching. Students in this course are paired with a faculty mentor and help supervise labs; deliver pre-lab lectures; and assist in ordering chemicals, supplies, and equipment and in preparing laboratory experiments. Students complete a project that integrates the physical science education literature, classroom instruction materials, laboratory safety, and proper storage and disposal of materials and equipment used. In the appropriate situation, a student may substitute planetarium show preparation and presentation for laboratory exercises. *Cross-listed as PHYS 000. Open to junior physics and astronomy majors pursuing certification in education, with consent of instructor. Non-credit course.*

## **101**

### **PRINCIPLES OF ASTRONOMY**

A broad summary of the current view of the universe, from the solar system to distant galaxies. Describes the instruments and techniques used by astronomers, today and in the past, to develop concepts about the nature of the universe and its contents. *Credit may not be earned for both ASTR 101 and ASTR 105, 106, or 111.*

## 105

### SOLAR SYSTEM ASTRONOMY

An introduction to solar system astronomy for the non-major. The course begins with a study of the sky and the motions of major objects including the Sun, Moon, and planets. From there, the historical development of astronomy leads to our modern-day understanding of our Solar System. The laws of planetary motion, the structure of the Solar System, and the formation of the solar system are discussed alongside an exploration of individual planets and their satellites, asteroids, and the other bodies in our Solar System. The course concludes with a look outwards towards our still new and rapidly expanding knowledge of exoplanets, hundreds of which have been discovered within recent decades. Three hours of lecture and two hours of laboratory per week. *Credit may not be earned for both ASTR 105 and ASTR 101 or ASTR 111.*

## 106

### STARS AND GALAXIES

An introduction to stellar and galactic astronomy for students not majoring in astronomy, astrophysics, or physics. Starts with the instruments and techniques used by astronomers to determine the physical properties of stars and galaxies. Then considers the energy sources that power stars and how stars change their structure as they tap various energy sources. Describes the different types of galaxies, and how our ideas of galaxy formation have changed over time. Concludes with the expansion of the universe, its origin in the Big Bang, and its possible future development. *Credit may not be earned for both ASTR 106 and ASTR 101 -or ASTR 111.*

## 111

### FUNDAMENTALS OF ASTRONOMY

An introduction to the nature of the physical universe including its contents (from our solar system to distant galaxies), its history, and the physical processes occurring in it. The course is quantitative, utilizing algebra, as well as trigonometric, logarithmic, and exponential functions. This course is designed for students considering majoring in one of the natural sciences or mathematics. *Credit may not be earned for both ASTR 111 and ASTR 101, 105, or 106. Four hours of lecture and one three-hour laboratory per week. Prerequisite: MATH placement of level 4, credit for or concurrent enrollment in MATH 127, or consent of instructor.*

## 211

### DATA-MINING THE ASTRONOMICAL ARCHIVES

The astronomical datasets of the 21st century are rich with information that confirm centuries-old theories and provide the foundation for new ones. This course will take a deep dive into the modern databases, such as the NASA Exoplanet Archive, the Gaia Space Telescope, JWST, the Hubble Space Telescope, LIGO, and more that inform our understanding of populations of astronomical objects. Students will use real, open-source data to verify the theories they learned in previous courses about binaries, clusters, moving groups, exoplanets, and gravitational waves. After working with these databases throughout the semester, the course will culminate with a dataset-based project investigating a novel question about stellar systems. *Prerequisite: ASTR 111 and prerequisite or corequisite: PHYS 225.*

**230****PLANETARIUM TECHNIQUES**

A methods course covering major aspects of planetarium programming, operation, and maintenance. Students are required to prepare and present a planetarium show. Upon successfully completing the course, students are eligible to become planetarium assistants.

*Three hours of lecture and demonstration and three hours of practical training per week.*

*Prerequisite: A grade of C or better in ASTR 101 or 111. Alternate years.*

**243****PLANETARY SCIENCE**

A comparative survey of the various classes of natural objects that orbit the sun, including the major planets, their satellites, the minor planets, and comets. Topics include fundamental orbital mechanics, geological processes that shape surface features, internal structures, the role of spacecraft in the exploration of the solar system, and clues to the origin and dynamic evolution of the Solar System. *Four hours of lecture per week. Prerequisites: A grade of C or better in ASTR 111.*

**333****ANCIENT ASTRONOMY**

An examination of the history which informs modern astronomy. Course covers topics such as the celestial sphere and other ancient astronomical concepts still in use, how ancient civilizations used constellations to navigate and predict seasons, and the connection between ancient experimental science and philosophy. Students will practice naked-eye night-sky observing throughout the semester. *Prerequisite: ASTR 111. Prerequisite or corequisite: PHYS225; or permission of instructor. Fulfills Global Cultural Diversity requirement*

**340****THE INVISIBLE UNIVERSE**

The astrophysics of celestial objects that emit thermal and non-thermal radiation outside the visible portion of the electromagnetic spectrum. Traces the development of observational techniques at radio, infrared, ultraviolet, x-ray, and gamma-ray wavelengths. Includes cosmic microwave background radiation, pulsars, quasars, gamma-ray bursters, magnetars, and active galactic nuclei. *Cross-listed as PHYS 340. Four hours of lecture and three hours of laboratory per week. Prerequisites: ASTR 111 and PHYS 226.*

**345****SPECIAL TOPICS IN ASTROPHYSICS**

A study of selected topics in astrophysics. *May be repeated for credit with consent of department when topics are different. Alternate years. Prerequisites: ASTR 111 and PHYS 226.*

**360****OBSERVATIONAL ASTRONOMY**

While humanity has observed the sky for thousands of years, recent technological advances have allowed modern astronomers to transform the way we see the cosmos. Students explore the various observational techniques used by astronomers, including optical

imaging, spectroscopy, multiwavelength observations, and multimessenger astronomy. Students use on-campus telescopes to plan, acquire, and analyze their own observational data and engage with and analyze data from modern research-grade observatories. Four hours of lecture, three hours of laboratory per week. *Prerequisite: ASTR 211.*

### **365**

#### **GALACTIC AND EXTRAGALACTIC ASTRONOMY**

In the 1920s, Edwin Hubble found the first concrete evidence that we live in a universe full of billions of galaxies far beyond the Milky Way. Now, astronomers are able to observe galaxies as they were towards the beginning of the Universe to learn about how they change and evolve over time. Students explore properties of the Milky Way, types of galaxies that exist beyond the Milky Way, and how astronomers study them by analyzing data from large scale surveys. *Prerequisite: ASTR 211.*

### **444**

#### **COSMOLOGY**

How can astronomers describe the universe as a whole? What does it mean for the universe to be expanding? What are dark energy and dark matter and where do they fit into our overall picture of the universe? This course will focus on answering these questions and providing students with a quantitative and qualitative framework for describing the fundamental properties of our universe. Additionally, students learn about cutting-edge work being done in the field and how to interpret it. *Prerequisite: PHYS 227*

### **445**

#### **STELLAR EVOLUTION**

The physical principles governing the internal structure and external appearance of stars. Mechanisms of energy generation and transport within stars. The evolution of stars from initial formation to final stages. The creation of chemical elements by nucleosynthesis. *Four hours of lecture per week. Prerequisites: ASTR 111 and PHYS 226. Alternate years.*

### **448**

#### **SENIOR RESEARCH SEMINAR**

Students participate in a research project under the guidance of a faculty member in the department. In weekly meetings, they share reports from the literature and report on their own work. Topics range from abstract theoretical to selected practical experimental investigations. *Cross-listed as PHYS 448. May be taken a second time with consent of department.*

### **349, 449**

#### **ASTRONOMY AND PHYSICS COLLOQUIA**

This non-credit but required course for juniors and seniors majoring in astronomy and physics offers students a chance to meet and hear active scientists in astronomy, physics, and related scientific areas talk about their own research or professional activities. In addition, majors in astronomy and physics must present two lectures, one given during the junior year and one given

during the senior year, on the results of a literature survey or their individual research. Four semesters required during the junior and senior years. *Cross-listed as PHYS 349 and 449. One hour per week. Pass/Fail except when the student gives a lecture. Non-credit course.*

#### **470-479**

##### **INTERNSHIP**

#### **N80-N89**

##### **INDEPENDENT STUDY**

Independent studies may be undertaken in most areas of astronomy.

#### **490-491**

##### **INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

## **ASTROPHYSICS**

The B.S. degree in astrophysics requires courses in astronomy, physics, and mathematics. A major in astrophysics prepares students for graduate study in astrophysics and careers in industry, formal and informal education, and government agencies.

|               |                                       |
|---------------|---------------------------------------|
| ASTR 111      | Fundamentals of Astronomy             |
| ASTR 211      | Data Mining the Astronomical Archives |
| ASTR/PHYS 448 | Research Topics                       |
| MATH 128      | Calculus with Analytic Geometry I     |
| MATH 129      | Calculus with Analytic Geometry II    |
| PHYS 225      | Fundamentals of Physics I             |
| PHYS 226      | Fundamentals of Physics II            |
| PHYS 227      | Modern Physics                        |
| PHYS 331      | Classical Mechanics                   |
| PHYS 332      | Electromagnetism                      |

One course from ASTR 243 or higher.

One course from ASTR 345 or higher.

Two courses from the following:

|          |                                 |
|----------|---------------------------------|
| MATH 231 | Differential Equations          |
| MATH 238 | Multivariable Calculus          |
| PHYS 336 | Mathematical Methods of Physics |

One course from the following:

|          |                            |
|----------|----------------------------|
| ASTR 360 | Observational Astronomy    |
| PHYS 345 | Experimental Physics       |
| PHYS 445 | Experimental Data Analysis |



One course from the following:

|          |                                          |
|----------|------------------------------------------|
| PHYS 320 | Mathematical Modeling and Simulation     |
| PHYS 330 | Applied Machine Learning                 |
| PHYS 337 | Thermodynamics and Statistical Mechanics |
| PHYS 341 | Electronics                              |
| PHYS 347 | Special Topics in Complex Systems        |
| PHYS 435 | Nonlinear and Complex Systems            |
| PHYS 439 | Introduction to Quantum Mechanics        |
| PHYS 447 | Nuclear and Particle Physics             |

Astrophysics majors are also required to successfully complete two semesters of ASTR/PHYS 349 and two semesters of ASTR/PHYS 449 (non-credit colloquia).

### **Capstone Requirement**

All majors must successfully complete ASTR/PHYS 448. This requirement may also be satisfied by completing an individual studies or honors project and presenting the results at a departmental colloquium. Students who have successfully completed a summer NSF-sponsored Research Experience for Undergraduates, or equivalent research experience may request departmental approval to substitute off-campus experience plus an additional advanced astronomy or physics course not already required by the astrophysics major in place of ASTR/PHYS 448.

## **APPLIED AND ENGINEERING PHYSICS**

The B.S. degree in applied and engineering physics requires courses in physics, chemistry, computer science and mathematics. A major in applied and engineering physics prepares students for graduate programs in applied physics and engineering and careers in industries such as engineering and related professions.

### **Major Requirements**

|              |                                                        |
|--------------|--------------------------------------------------------|
| CHEM 122/123 | General Chemistry I and General Chemistry Laboratory I |
| CPTR 125     | Introduction to Computer Science                       |
| MATH 128     | Calculus with Analytic Geometry I                      |
| MATH 129     | Calculus with Analytic Geometry II                     |
| PHYS 225     | Fundamentals of Physics I                              |
| PHYS 226     | Fundamentals of Physics II                             |
| PHYS 227     | Modern Physics                                         |
| PHYS 331     | Classical Mechanics                                    |
| PHYS 332     | Electromagnetism                                       |
| PHYS 337     | Thermodynamics and Statistical Mechanics               |
| PHYS 341     | Electronics                                            |
| PHYS 345     | Experimental Physics                                   |
| PHYS 448     | Senior Research Seminar                                |

One course from the following:

|              |                                                          |
|--------------|----------------------------------------------------------|
| CHEM 124/125 | General Chemistry II and General Chemistry Laboratory II |
|--------------|----------------------------------------------------------|

CHEM/PHYS 439     Introduction to Quantum Mechanics

Two courses from the following:

|          |                                 |
|----------|---------------------------------|
| MATH 231 | Differential Equations          |
| MATH 238 | Multivariable Calculus          |
| PHYS 336 | Mathematical Methods of Physics |

One course from the following:

CPTR 200 or higher  
MATH 200 or higher  
PHYS 300 or higher

Applied and engineering physics majors are also required to successfully complete two semesters of ASTR/PHYS 349 and two semesters of ASTR/PHYS 449 (non-credit colloquia).

### **Capstone Requirement**

All majors must successfully complete PHYS 448. This requirement may also be satisfied by completing an individual studies or honors project and presenting the results at a departmental colloquium. Students who have successfully completed a summer NSF-sponsored Research Experience for Undergraduates, or equivalent research experience may request departmental approval to substitute off-campus experience plus an additional advanced astronomy or physics course not already required by the applied and engineering physics major in place of ASTR/PHYS 448.

## **BIOPHYSICS**

The B.S. degree in biophysics requires courses in biology, physics, chemistry, and mathematics. The Biophysics major prepares students for careers in biophysics, biomedical engineering, medical physics, and other industries where biology and physics interface.

### **Major Requirements:**

|              |                                                          |
|--------------|----------------------------------------------------------|
| BIO 110      | Introduction to Biology I                                |
| BIO 111      | Introduction to Biology II                               |
| BIO 343      | Biomechanics                                             |
| CHEM 122/123 | General Chemistry I and General Chemistry Laboratory I   |
| CHEM 124/125 | General Chemistry II and General Chemistry Laboratory II |
| MATH 128     | Calculus with Analytic Geometry I                        |
| MATH 129     | Calculus with Analytic Geometry II                       |
| PHYS 225     | Fundamentals of Physics I                                |
| PHYS 226     | Fundamentals of Physics II                               |
| PHYS 227     | Modern Physics                                           |
| PHYS 337     | Thermodynamics                                           |
| PHYS 448     | Senior Research Seminar                                  |

One course from the following:

|              |                          |
|--------------|--------------------------|
| CHEM 219     | Organic and Biochemistry |
| CHEM 222/223 | Organic Chemistry        |

One course from the following:

|          |                  |
|----------|------------------|
| PHYS 341 | Electronics      |
| PHYS 332 | Electromagnetism |

Two courses from the following:

|               |                                                   |
|---------------|---------------------------------------------------|
| BIO 323       | Human Physiology                                  |
| BIO 324       | Medical Microbiology                              |
| BIO 325       | Microbial Ecology                                 |
| BIO 338       | Human Anatomy                                     |
| BIO 436       | Evolution                                         |
| BIO 437       | Molecular Biology                                 |
| BIOCH 444     | Biochemistry I                                    |
| BIOCH 445     | Biochemistry II                                   |
| CHEM 224/225  | Organic Chemistry II and Organic Chemistry Lab II |
| CHEM/PHYS 439 | Introduction to Quantum Mechanics                 |
| PHYS 331      | Classical Mechanics                               |
| PHYS 345      | Experimental Physics                              |
| PHYS 435      | Nonlinear and Complex Systems                     |

Biophysics majors are also required to successfully complete two semesters of ASTR/PHYS 349 and two semesters of ASTR/PHYS 449 (non-credit colloquia).

### **Capstone Requirement**

All majors must successfully complete PHYS 448. This requirement may also be satisfied by doing an individual studies or honors project and presenting the results at a departmental colloquium. Students who have successfully completed a summer REU, RUG, or equivalent research experience may request departmental approval to substitute that experience plus an additional advanced astronomy or physics course not already required by the major in place of PHYS 448. Note that if the student has already counted two astronomy courses toward a biophysics major, then the extra course in place of PHYS 448 must be a physics course.

## **COMPUTATIONAL PHYSICS**

The B.S. degree in computational physics requires courses in physics, computer science, and mathematics. The Computational Physics major prepares students for graduate study in physics, computational physics, and related fields. This major also prepares students for careers in software engineering, data analysis, mathematical modeling and simulation, and fields which blend the need for both physics and computer programming.

## Major Requirements

|               |                                    |
|---------------|------------------------------------|
| CPTR 125      | Introduction to Computer Science   |
| CPTR 246      | Principles of Advanced Programming |
| CPTR 247      | Data Structures                    |
| MATH 128      | Calculus with Analytic Geometry I  |
| MATH 129      | Calculus with Analytic Geometry II |
| PHYS 225      | Fundamentals of Physics I          |
| PHYS 226      | Fundamentals of Physics II         |
| PHYS 227      | Modern Physics                     |
| PHYS 331      | Classical Mechanics                |
| PHYS 332      | Electromagnetism                   |
| PHYS/CHEM 439 | Introduction to Quantum Mechanics  |
| PHYS 448      | Senior Research Seminar            |

Two courses from the following:

|          |                                         |
|----------|-----------------------------------------|
| PHYS 320 | Mathematical Modeling and Simulation    |
| PHYS 330 | Applied Machine Learning                |
| PHYS 346 | Special Topics in Computational Physics |
| PHYS 445 | Experimental Data Analysis              |

Two courses from the following:

|          |                                 |
|----------|---------------------------------|
| MATH 231 | Differential Equations          |
| MATH 238 | Multivariable Calculus          |
| PHYS 336 | Mathematical Methods of Physics |

One course from the following:

|          |                                          |
|----------|------------------------------------------|
| ASTR 211 | Data Mining                              |
| CPTR 339 | Introduction to Database Systems         |
| CPTR 340 | Artificial Intelligence                  |
| MATH 342 | Topics in Numerical Analysis             |
| MATH 442 | Topics in Numerical Analysis             |
| PHYS 320 | Mathematical Modeling and Simulation     |
| PHYS 330 | Applied Machine Learning                 |
| PHYS 337 | Thermodynamics and Statistical Mechanics |
| PHYS 346 | Special Topics in Computational Physics  |
| PHYS 347 | Topics in Complex Systems                |
| PHYS 435 | Nonlinear and Complex Systems            |
| PHYS 445 | Experimental Data Analysis               |

Computational Physics majors are also required to successfully complete two semesters of ASTR/PHYS 349 and two semesters of ASTR/PHYS 449 (non-credit colloquia).

### **Capstone Requirement**

All majors must successfully complete PHYS 448. This requirement may also be satisfied by completing an individual studies or honors project and presenting the results at a departmental colloquium. Students who have successfully completed a summer NSF-sponsored Research Experience for Undergraduates, or equivalent research experience may request departmental approval to substitute off-campus experience plus an additional advanced physics course not already required by the Computational Physics major in place of PHYS 448.

### **Minor Requirements**

A minor in computational physics requires the completion of the following courses: CPTR 125, 246, PHYS 225, 226, and one additional PHYS course numbered 227 or higher.

## **PHYSICS (PHYS)**

### **The B.A. Degree**

The B.A. degree in physics requires courses in physics, chemistry, and mathematics. This major prepares students for careers in education, engineering, and other technical positions in government and industry.

### **Major Requirements**

|              |                                                        |
|--------------|--------------------------------------------------------|
| CHEM 122/123 | General Chemistry I and General Chemistry Laboratory I |
| MATH 128     | Calculus with Analytic Geometry I                      |
| MATH 129     | Calculus with Analytic Geometry II                     |
| PHYS 225     | Fundamentals of Physics I                              |
| PHYS 226     | Fundamentals of Physics II                             |
| PHYS 227     | Modern Physics                                         |
| PHYS 331     | Classical Mechanics                                    |
| PHYS 332     | Electromagnetism                                       |
| PHYS 345     | Experimental Physics                                   |
| PHYS 445     | Experimental Data Analysis                             |
| PHYS 448     | Senior Research Seminar                                |

One course from the following:

|               |                                                          |
|---------------|----------------------------------------------------------|
| CHEM 124/125  | General Chemistry II and General Chemistry Laboratory II |
| CHEM/PHYS 439 | Introduction to Quantum Mechanics                        |

One course from the following:

|          |                                 |
|----------|---------------------------------|
| MATH 238 | Multivariable Calculus          |
| PHYS 336 | Mathematical Methods of Physics |

Physics majors are also required to successfully complete two semesters of ASTR/PHYS 349 and two semesters of ASTR/PHYS 449 (non-credit colloquia).

## The B.S. Degree

The B.S. degree in physics requires courses in physics, chemistry, computer science, and mathematics. This major prepares students for graduate study in physics and related fields. This major also prepares students for careers in engineering, physics, teaching, and other technical positions in government and industry.

## Major Requirements

|              |                                                        |
|--------------|--------------------------------------------------------|
| CHEM 122/123 | General Chemistry I and General Chemistry Laboratory I |
| CPTR 125     | Introduction to Computer Science                       |
| MATH 128     | Calculus with Analytic Geometry I                      |
| MATH 129     | Calculus with Analytic Geometry II                     |
| PHYS 225     | Fundamentals of Physics I                              |
| PHYS 226     | Fundamentals of Physics II                             |
| PHYS 227     | Modern Physics                                         |
| PHYS 331     | Classical Mechanics                                    |
| PHYS 332     | Electromagnetism                                       |
| PHYS 448     | Senior Research Seminar                                |

One course from the following:

|               |                                                          |
|---------------|----------------------------------------------------------|
| CHEM 124/125  | General Chemistry II and General Chemistry Laboratory II |
| CHEM/PHYS 439 | Introduction to Quantum Mechanics                        |

Two courses from the following:

|          |                                 |
|----------|---------------------------------|
| MATH 231 | Differential Equations          |
| MATH 238 | Multivariable Calculus          |
| PHYS 336 | Mathematical Methods of Physics |

One course from the following:

|          |                            |
|----------|----------------------------|
| PHYS 345 | Experimental Physics       |
| PHYS 445 | Experimental Data Analysis |

Three additional courses from any of the following:

ASTR 243 or higher  
CPTR 200 or higher  
MATH 200 or higher  
PHYS 300 or higher

Physics majors are also required to successfully complete two semesters of ASTR/PHYS 349 and two semesters of ASTR/PHYS 449 (non-credit colloquia).

Students interested in teacher certification should refer to the Department of Education listing.

### **Capstone Requirement**

All majors must successfully complete PHYS 448. This requirement may also be satisfied by doing an individual studies or honors project and presenting the results at a departmental colloquium. Students who have successfully completed a summer REU, RUG, or equivalent research experience may request departmental approval to substitute that experience plus an additional advanced astronomy or physics course not already required by the major in place of PHYS 448. Note that if the student has already counted two astronomy courses toward a physics major, then the extra course in place of PHYS 448 must be a physics course.

### **Minor Requirements**

A minor in physics requires completion of the following courses: PHYS 225, 226, 227, 331, and 332.

### **000**

#### **LABORATORY TEACHING METHODS**

Provides students with practical experience in laboratory teaching. Students in this course are paired with a faculty mentor and help supervise labs; deliver pre-lab lectures; and assist in ordering chemicals, supplies, and equipment and in preparing laboratory experiments. Students complete a project that integrates the physical science education literature, classroom instruction materials, laboratory safety, and proper storage and disposal of materials and equipment used. *Cross-listed as ASTR 000. Open to junior physics and astronomy majors pursuing certification in education, with consent of instructor. Non-credit course.*

### **105**

#### **PHYSICS PHOR EVERYONE**

An introduction to physics for non-majors. The course will focus on developing a conceptual understanding of motion electricity, magnetism, and light, along with selected topics from modern physics. This course does not count towards the physics major. *Four hours of lecture and one two-hour laboratory per week. Prerequisites: MATH 100 or Math placement of level 2 or higher.*

### **108**

#### **GREAT IDEAS OF THE PHYSICAL UNIVERSE**

An introduction to several major concepts of physics which have developed over the past several centuries, relating them to their broad implications. The emphasis is on a descriptive rather than a mathematical discussion of topics which range from early Greek concepts of science to present-day methods and techniques used to describe the physical universe. Many distinctions and similarities between science and other areas of human endeavor are studied to demonstrate the beauty, simplicity, harmony, and grandeur of some of the basic laws which govern the universe. *Three hours of lecture and two hours of laboratory per week. Fulfills Global Cultural Diversity Requirement. Alternate years.*

### **225**

#### **FUNDAMENTALS OF PHYSICS I**

A calculus-based introduction to physics designed for majors in the natural sciences and mathematics. Topics include classical mechanics, thermodynamics, and mechanical waves.

*Five hours of lecture and recitation and one three-hour laboratory per week. Prerequisite or corequisite: MATH 128.*

## **226**

### **FUNDAMENTALS OF PHYSICS II**

A calculus-based introduction to physics designed for majors in the natural sciences and mathematics. Topics include electromagnetism, circuits, optics, and topics from 20<sup>th</sup> century physics such as quantum physics and special relativity. *Five hours of lecture and recitation and one three-hour laboratory per week. Prerequisite: PHYS 225. Prerequisite or corequisite: MATH 129.*

## **227**

### **MODERN PHYSICS**

Thorough investigation of changes in the classical understanding of space and time together with those of energy and matter that led to the time development of relativistic and quantum mechanical theories. Topics include introduction to special relativity, blackbody radiation, the postulation of the photon and quantization, atomic spectra, interactions of matter and energy, Bohr model of the atom, concepts of symmetry, and development and applications of the Schrödinger equation. Four hours of lecture per week. *Prerequisites: MATH 129 and a grade of C or better in PHYS 226.*

## **320**

### **MATHEMATICAL MODELING AND SIMULATION**

An introduction to mathematical modeling of complex systems using the programming languages Python and NetLogo. Topics may include numerical techniques of integration and differentiation, symbolic manipulation of equations, developing equation-based models, analytical and numerical solutions of systems of differential equations, and the development and analysis of agent-based models. Students model systems from a wide range of areas in the natural and social sciences. *Prerequisite: PHYS 331. Alternate years.*

## **330**

### **APPLIED MACHINE LEARNING**

An introduction to machine learning and the Python programming language. Topics include the principles of machine learning and the training and analysis of supervised and unsupervised machine learning models developed using Python libraries. Application of models on a diverse set of real-world data sets is emphasized over theoretical content. *Prerequisite: CPTR 125 or PHYS 226 or instructor permission. Alternate years.*

## **331**

### **CLASSICAL MECHANICS**

An analytical approach to classical mechanics. Topics include kinematics and dynamics of single particles and systems of particles, gravitation and other central forces, moving reference frames, and Lagrangian and Hamiltonian formulations of mechanics. *Prerequisites: MATH 129 and a grade of C or better in PHYS 225. Alternate years.*



**332****ELECTROMAGNETISM**

A theoretical treatment of classical electromagnetism. Topics include electrostatics, magnetostatics, electric and magnetic potentials, electric and magnetic properties of matter, Maxwell's equations, the electromagnetic field, and the propagation of electromagnetic radiation. *Prerequisites: MATH 129 and a grade of C or better in PHYS 226. Alternate years.*

**336****MATHEMATICAL METHODS OF PHYSICS**

Solution of ordinary linear differential equations using power series and Laplace transforms, nonlinear differential and coupled differential equations, Fourier analysis using both trigonometric and complex exponential functions, complex variables, eigenvalue problems, infinite dimensional vector spaces, partial differential equations, boundary value problem solutions to the wave equation, heat flow equation, and Laplace's equation. *Prerequisite: MATH 129.*

**337****THERMODYNAMICS AND STATISTICAL MECHANICS**

Presents classical thermodynamics, showing that the macroscopic properties of a system can be specified without knowledge of the microscopic properties of the constituents of the system. Also develops statistical mechanics, showing that these same macroscopic properties are determined by the microscopic properties. *Prerequisites: PHYS 226 and MATH 129. Alternate years.*

**339****CONDENSED MATTER PHYSICS**

Structural topics include ordinary crystalline structures, liquid crystals, quasi-crystals, and nanostructures. Property-related topics include periodic potentials, band structure, electromagnetic and thermal properties, superconductivity, and aspects of surface physics. *Prerequisites: PHYS 332 and MATH 129 or consent of instructor. Alternate years.*

**340****THE INVISIBLE UNIVERSE**

The astrophysics of celestial objects that emit thermal and non-thermal radiation outside the visible portion of the electromagnetic spectrum. Traces the development of observational techniques at radio, infrared, ultraviolet, x-ray, and gamma-ray wavelengths. Includes cosmic microwave background radiation, pulsars, quasars, gamma-ray bursters, magnetars, and active galactic nuclei. *Cross-listed as ASTR 340. Four hours of lecture and three hours of laboratory per week. Prerequisites: ASTR 111 and PHYS 226. Alternate years.*

**341****ELECTRONICS**

DC and AC circuit analysis, semiconductor physics, active devices such as PN junctions, transistors, operational amplifiers, and integrated circuits. Basics of digital electronics and vacuum tube technologies. *Three lectures and three hours of laboratory per week. Prerequisites: PHYS 225 and MATH 128. Alternate years.*

**345**

**EXPERIMENTAL PHYSICS**

An introduction to laboratory techniques beyond those covered in introductory physics. Students receive instruction in laboratory techniques, data analysis, written and oral presentation of data, and the use of computers for collecting and analyzing data. Experiments focus on the fields of classical mechanics, electromagnetism, and thermodynamics. *Two hours of lecture and three hours of laboratory per week. Prerequisite: PHYS 226. Alternate years.*

**346**

**SPECIAL TOPICS IN COMPUTATIONAL PHYSICS**

A study in the selected methodologies used in modeling physical systems. *Alternate years. May be repeated for credit with consent of department when topics are different. Prerequisites: PHYS 226 and CPTR 125 or consent of the instructor.*

**347**

**SPECIAL TOPICS IN COMPLEX SYSTEMS**

A study of selected methodologies in the analysis and modeling of complex adaptive systems from the natural and social sciences. *May be repeated for credit with consent of department when topics are different. Alternate years. Prerequisites: PHYS 225 or CPTR 125 or consent of the instructor.*

**435**

**NONLINEAR AND COMPLEX SYSTEMS**

Students learn how to develop and analyze nonlinear mathematical models of complex systems from the physical, biological, and social sciences. Topics include equation-based and agent-based modeling, bifurcation theory, limit cycles, chaos, fractals, and time series analysis. *Prerequisites: PHYS 225 and MATH 129 or consent of instructor. Alternate years.*

**439**

**INTRODUCTION TO QUANTUM MECHANICS**

Introduction to the basic concepts and principles of quantum theory. Uses the Schrödinger wave equation approach to present solutions to the free particle, the simple harmonic oscillator, the hydrogen atom, and other central force problems. Topics also include operator formalism, eigenstates, eigenvalues, the uncertainty principles, stationary states, representation of wave functions by eigenstate expansions, and the Heisenberg matrix approach. *Cross-listed as CHEM 439. Four hours of lecture. Prerequisites: MATH 231 and either PHYS 227 or CHEM 331. Alternate years.*

**445**

**EXPERIMENTAL DATA ANALYSIS**

An emphasis on computer-aided analysis of experimental data. Topics include uncertainty propagation, random numbers, numerical differentiation and integration, Fourier transforms, time series analysis, nonlinear time series analysis, regression, and machine learning. Students receive instruction on experimental design, laboratory techniques, and written and oral presentation of data. Experiments cover a range of topics including classical mechanics, electromagnetism, thermodynamics, and modern physics.

*Three hours of lecture and two hours of laboratory per week. Prerequisite: PHYS 226. Alternate years.*

**447**

**NUCLEAR AND PARTICLE PHYSICS**

Considers properties of nuclei, nuclear models, radioactivity, nuclear reactions (including fission and fusion), and properties of elementary particles. Includes the interactions of nuclear particles with matter and the detection of nuclear particles. Reveals how observed phenomena lead to theories on the nature of fundamental interactions, how these forces act at the smallest measurable distances, and what is expected to occur at even smaller distances. *Prerequisites: PHYS 226, MATH 129, and either PHYS 338 or CHEM 122/123. Alternate years.*

**448**

**SENIOR RESEARCH SEMINAR**

Students participate in a research project under the guidance of a faculty member in the department. In weekly meetings, they share reports from the literature and report on their own work. Topics range from abstract theoretical to selected practical experimental investigations. *Cross-listed as ASTR 448. Prerequisite: Permission of instructor. May be taken a second time with consent of department.*

**349, 449**

**ASTRONOMY AND PHYSICS COLLOQUIA**

This non-credit but required course for juniors and seniors majoring in astronomy and physics offers students a chance to meet and hear active scientists in astronomy, physics, and related scientific areas talk about their own research or professional activities. In addition, majors in astronomy and physics must present two lectures, one given during the junior year and one given during the senior year, on the results of a literature survey or their individual research. Four semesters required during the junior and senior years. *Cross-listed as ASTR 349 and 449. One hour per week. Pass/Fail except when the student gives a lecture. Non-credit course.*

**470-479**

**INTERNSHIP**

Interns in physics work off campus under the supervision of professional physicists employed by local industries or hospitals.

**N80-N89**

**INDEPENDENT STUDY**

Independent studies may be undertaken in most areas of physics.

**490-491**

**INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

# BIOLOGY (BIO)

Professor: Newman

Associate Professors: Broussard

Assistant Professors: Andrew (Chair), McClelland, Morrison, O'Donnell, Rieck

Lecturer: Kaunert

- Majors: Biology, Biomedical Sciences, Cell and Molecular Biology, Ecology
- Courses required for all majors: 13 (B.A.), 16 (B.S.) (not including zero or 1 credit courses)
- Non-credit Colloquium: 4 semesters
- Capstone requirement: Practical Experience, Presentation in Colloquium, and Department Exit Examination
- Minor: Biology

The Department of Biology offers four majors that can each be completed as Bachelor of Arts or Bachelor of Sciences degrees. The Department also offers a minor in Biology and contributes to the interdisciplinary minors in Environmental Science and Neuroscience.

Students may not double major in any combination of Biochemistry, Biology, Biomedical Sciences, Cell and Molecular Biology, or Ecology.

## Major Requirements

### The B.A. Degree

The major in biology requires courses in biology, chemistry, and mathematics. The required courses are below. Declared Biology majors may substitute BIO 106 for BIO 110 and BIO 107 for BIO 111 with written consent of the department chair and ASC approval

#### Core courses:

|              |                                        |
|--------------|----------------------------------------|
| BIO 110      | Introduction to Biology I              |
| BIO 111      | Introduction to Biology II             |
| BIO 222      | Genetics                               |
| BIO 224      | Ecology                                |
| BIO 225      | Plant Sciences                         |
| BIO 323      | Human Physiology                       |
| BIO 324      | Medical Microbiology                   |
| CHEM 122/123 | General Chemistry I and Laboratory I   |
| CHEM 124/125 | General Chemistry II and Laboratory II |

#### One course from the following:

|              |                                      |
|--------------|--------------------------------------|
| CHEM 219     | Organic and Biochemistry             |
| CHEM 222/223 | Organic Chemistry I and Laboratory I |

**Two courses from the following:**

|                                        |                                    |
|----------------------------------------|------------------------------------|
| CPTR 125                               | Introduction to Computer Science   |
| Any CPTR course numbered 246 or higher |                                    |
| MATH 109                               | Applied Elementary Calculus        |
| MATH 115                               | Applied Discrete Mathematics       |
| MATH 123                               | Introduction to Statistics         |
| MATH 127                               | Precalculus Mathematics            |
| MATH 128                               | Calculus with Analytic Geometry I  |
| MATH 129                               | Calculus with Analytic Geometry II |
| Any MATH course numbered 200 or higher |                                    |

One additional BIO course numbered 201 or higher.

Biology majors are also required to complete four semesters of BIO 349/449 Colloquium. Enrollment in student teaching and/or other similar off-campus academic experiences will be accepted by the department in lieu of that semester's colloquium requirement.

**The B.S. Degree**

To qualify for the B.S. degree, Biology majors must complete the major described above and three additional courses chosen in any combination from the following: BIO 201 or higher (including BIO 400 and/or 470); BIOCH 444, 445; CHEM 224/225 or higher; ENV 445; NEURO 210, 211; PHYS 225 or higher;; or MATH 127, 128, 129, or any MATH course numbered 200 or higher.

**Capstone Requirements**

In order to graduate, all biology majors must demonstrate to the Department their command of biology by meeting the following three criteria.

**1. Practical Experience:** All students must complete at least one of the experiences in the following list: Internship, Practicum, BIO 447, Relevant Summer Experience, Independent Studies, Honors, Medical Laboratory Science Internship, Medical Technology Internship, Teaching Semester, Biology Laboratory Assistant, Biology-related volunteer work.

(Summer experiences, Biology-related volunteer work, or working as a lab assistant must be approved by the Department in order to be used to meet this requirement.)

**2. Research & Presentation Component:** All junior and senior majors are required to successfully complete Biology Colloquia (BIO 349/449) during all their semesters on campus. During their final year, students will research a biological topic and make an oral presentation at the Biology Colloquium. This will demonstrate information literacy in the biological sciences.

**3. Assessment:** All majors are required to pass a Biology Department Exit Exam.

Students may not double major in any combination of Biochemistry, Biology, Biomedical Sciences, Cell and Molecular Biology, or Ecology.

### **Certification in Secondary Education**

A Biology major interested in becoming certified at the secondary level to teach Biology and/or General Science. The student should, as early as possible, consult the current Department of Education Teacher Education Handbook and should make their plans known to their advisor and the Chair of the Education Department so the required courses can be scheduled before the Professional Semester. Please check with the Education Department for the most current PA State requirements.

### **Cooperative Programs**

Lycoming College has several affiliations with cooperative programs relevant to majors offered by the Biology department. These programs are described in the Academic Program section of the catalog under Cooperative Programs. Some programs may have accelerated timelines that would preclude a student from being able to fully complete their major. In these instances, students must make an appeal to the Academic Standards Committee, in consultation with their academic advisor, to approve exceptions to the major. Students interested in these programs should contact the program director as soon as possible.

### **Minor Requirements**

A minor in biology consists of two courses from BIO 222, 224, 225, 323, or 324; and two additional BIO courses numbered 200 or higher.

### **Clean Water Institute**

This institute is designed to provide a forum for the natural resource heritage of North Central Pennsylvania, the Susquehanna River and its major tributaries (Pine, Loyalsock, Lycoming, and Muncy Creeks). The institute provides a service not only to Lycoming College students, through coordination of Environmental internships, and independent study/honors projects, but also the community. This may include seminars or workshops on environmental issues as well as monitoring assistance to watershed groups.

### **000**

#### **SEMINAR IN BIOLOGICAL EDUCATION**

Each student planning to teach Biology in secondary schools attends a series of seven seminars, conducted prior to student teaching, during the spring semester of the junior year. These seminars are conducted by members of the biology faculty. In addition to pertinent teaching issues, students are also exposed to procedures for laboratory set up and maintenance and safety procedures for students and materials in a laboratory. Special arrangements will be made for non-degree students. *Non-credit course.*

### **103**

#### **VIRUSES, PANDEMICS AND SOCIETY**

Human societies faced global pandemics long before recorded history. The COVID-19 pandemic highlighted the importance of understanding the biological and social impacts of any new pathogen. This course explores how viruses and bacteria infect host species including humans, how they cause disease, how they spread, and how they may be contained and even eradicated. We examine how past pandemics like the black plague, Smallpox, HIV, Ebolavirus, Influenza

virus, SARS, and Zika virus changed societies across time and around the world. *Four hours of lecture per week. Fulfills Global Diversity requirement.*

#### **104**

##### **A PIECE OF YOUR MIND**

Why does music sound good? What causes you to dream? What role does proper nutrition play in the function of your nervous system, and why do some foods make you feel happy? How do common pharmaceuticals affect your brain? How do you make memories and learn new things? This course gives a brief introduction to the science of the human brain. Topics covered include basic brain anatomy and function, how your brain's sensory systems allow you to appreciate art and music, the science of sleep, the brain's role in emotional experiences, the strengths and weaknesses of the human brain in decision making, and what the science of learning and memory can teach you about building effective study habits. *Four hours of lecture per week. This course does not count towards the biology or neuroscience major.*

#### **106**

##### **CELLS, GENES, AND SOCIETY**

Investigates the roles that cellular phenomena, genes, and biotechnology play in everyday life. The primary goal of this course is to improve recognition and understanding of the implications of biology in health care, agriculture, law, bioethics, and business. *Credit may not be earned for both BIO 106 and 110. Three hours of lecture and one two-hour laboratory per week.*

#### **107**

##### **HUMAN BIOLOGY**

A brief survey of human anatomy and physiology, which includes study of the complementary nature of form and function, as well as study of the levels of biological organization within the body. Provides the background to read, comprehend, and appreciate current articles on this subject in the popular press. Students learn the names, structure, and general functions of the major organs of the body. Animal dissection is optional. *Credit may not be earned for both BIO 107 and 111. Four hours of lecture and one three-hour laboratory per week.*

#### **108**

##### **PUBLIC HEALTH**

The health of human populations around the world has improved dramatically over the past 150 years due to improvements in nutrition, water treatment and sanitation, worker and transportation safety, infectious disease prevention and treatment, as well as other medical innovations, including systems for the delivery medical care. This course explores the science behind global public health successes and current challenges through case studies and evaluation of proposed public health policies. *Four hours of lecture per week.*

#### **109**

##### **NATURAL HISTORY OF DINOSAURS**

Explores the origin, evolution, and extinction of dinosaurs with emphasis on paleobiology and paleoecology of the Mesozoic Era. This course covers fundamental paleontological and evolutionary principles, dinosaur anatomy and behavior, physiology, dinosaur-bird relationships, diversity, and the history of dinosaur paleontology. *Three hours of lecture and one three-hour laboratory per week.*

**110****INTRODUCTION TO BIOLOGY I**

An introduction to the study of biology designed for students planning to major in the sciences. Major topics include a survey of biochemistry, cell biology, genetics, development, and evolution. *Credit may not be earned for both BIO 106 and 110. Four hours of lecture and one three-hour laboratory per week.*

**111****INTRODUCTION TO BIOLOGY II**

An introduction to the study of biology designed for students planning to major in the sciences. Major topics include a survey of eukaryotic diversity, mammalian anatomy and physiology, animal behavior, ecology, and evolution. *Prior completion of BIO 110 is recommended, but not required. Credit may not be earned for both BIO 107 and 111. Four hours of lecture and one three-hour laboratory per week.*

**115****MEDICAL TERMINOLOGY**

An introduction to the language of medicine. This course focuses on the structure and meaning of medical terms. Students learn to analyze and understand medical terminology related to human anatomy, physiology, pathology, and treatment. Emphasis is placed on word roots, prefixes, suffixes, and proper pronunciation and usage. This course is designed to prepare students for careers in healthcare and health related fields and provide a strong foundation for effective communication in clinical, academic, and professional settings. *2 credits.*

**116****FIRST AID AND CPR**

Provides hands-on introduction to the skills needed to respond effectively to common medical emergencies. Topics include basic first aid, adult and pediatric CPR, the proper use of AEDs, and injury prevention. Scenario-based simulations provide students the opportunity to practice and assess their skills. Students take the certification exams for First Aid and CPR through nationally recognized organizations, such as the American Red Cross or American Heart Association. This course is open to all students but is designed for students pursuing careers in healthcare, education, or exercise science related fields. *2 credits.*

**200****THE 4<sup>TH</sup> AND 5<sup>TH</sup> KINGDOMS**

While food, oxygen, and medicines are all necessary for human existence, the importance of plants and fungi are often ignored by our society. Plants and fungi play an essential role in our planet's ecology and are central in human cultural evolution. Covers the ways plants and fungi work, how humans have used plant and fungal products for their benefit and pleasure throughout history, and how different phytochemicals can influence human health. Also examines human impacts on plant and fungal biodiversity, how we have altered the environment in our quest for food and the perfect American lawn, and the impacts of genetic engineering. *Four hours of lecture and one two-hour laboratory per week. This course does not count toward the biology major.*



**201****INTRODUCTION TO BIRDWATCHING AND ORNITHOLOGY**

Birds are fascinating and beautiful creatures that have evolved to survive on almost every part of our earth. They are the only direct living descendants of dinosaurs. In this course, students learn to observe, identify and describe birds in their natural habitats. Students examine bird anatomy, physiology, behavior, ecology, and evolution, as well as issues in bird conservation, including bird migration and human impacts on bird habitat. Mixed lecture, laboratory, and fieldwork. May term course only.

**222****GENETICS**

A general consideration of the principles governing inheritance, including the study of heredity; genes and their expression, regulation, and evolution; the structure, replication, and variation of DNA; technology associated with modern genetic analyses. This class offers an intensive overview of the foundations and modern advances in genetics as well as an introduction to modern genetic laboratory techniques. *Four hours of lecture and one two-hour laboratory per week. Prerequisites: BIO 110 and 111.*

**224****ECOLOGY**

The study of the principles of ecology with emphasis on how the biotic and abiotic components of the environment interact to determine the distribution of plant and animal populations and the structure of communities. Course material covers additional topics in population genetics, landscape ecology, and biological conservation. Included are field studies of local habitats as well as laboratory experimentation. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 and 111, or ENV 220. Alternate years.*

**225****PLANT SCIENCES**

A survey of the structure, development, function, ecology, taxonomic divisions, and human uses of plants. The course includes four general topic areas: form, including plant cellular structure, plant morphology and plant anatomy; function, concentrating on photosynthesis and plant nutrition; distinctions between different plant divisions and plant identification techniques; and human uses of plants and historical implications of several different plants and fungi. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 and 111. Alternate years.*

**230****NUTRITION: METABOLISM AND HEALTH**

A study of protein, carbohydrate, and lipid metabolic pathways in the human body, as well as the integrated function of vitamins and minerals. Other topics may include nutrient absorption, how a deficiency or excess of these macro- and micronutrients influences health, how metabolism is altered in various disease states, and the impact of alcohol. *Four hours of lecture per week. Prerequisites: BIO 107 or 111; CHEM 122/123; or consent of instructor.*

**322****NEUROGENETICS**

An examination of the role that genetics plays in the development, function, and health of the nervous system. Topics include the role of classical genetics in elucidating molecular mechanisms of nervous system function and human neurological diseases. Includes recent advances in genomics and large-scale population studies that have facilitated a rapidly-increasing understanding of genetic brain abnormalities. The laboratory portion of the course will illustrate both classical and cutting-edge genetic analyses of behavior in multiple experimental systems. *Three hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 and 111, or consent of instructor; Bio 222 is also recommended.*

**323****HUMAN PHYSIOLOGY**

The mechanisms and functions of systems, including the autonomic, endocrine, digestive, cardiovascular, respiratory, renal, nervous, and reproductive systems. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 and 111.*

**324****MEDICAL MICROBIOLOGY**

An examination of medically important microbes including bacteria, viruses, fungi, and parasites and their interactions with human hosts. The course includes the fundamentals of microbiology such as microbial cell biology, physiology, genomics, and pathogenesis as well as current issues in public health, such as emerging infectious diseases and evolution of antibiotic-resistance. The laboratory component of the course provides hands-on experience in fundamental microbiological techniques as well as the use of various diagnostic tools to detect, identify, and characterize infectious agents. *Four hours of lecture and one three-hour laboratory period per week. Prerequisite: BIO 110 and 111.*

**325****MICROBIAL ECOLOGY**

An examination of the interaction of microorganisms with biotic and abiotic components of the environment. Topics addressed include microbial diversity and community structure, symbiosis, biogeochemical cycles, bioremediation, wastewater treatment and disinfection, and how microbes adapt to and affect different environments on the earth. Laboratory experiments include fundamental microbiology techniques as well as environmental sampling, metagenomic microbiome analysis, and biochemical analyses relevant to biogeochemical cycles. *Four hours of lecture and one three-hour laboratory period per week. Prerequisite: BIO 110 and 111.*

**328****AQUATIC BIOLOGY**

A field-oriented course focused on freshwater ecosystems. Course material examines the physical and chemical characteristics of water that influence aquatic habitats and organisms. Several local field trips and lab activities focus on the collection and identification of aquatic macroinvertebrates in addition to the taxonomic study of fish and a variety of field methods for characterizing aquatic habitats. *Alternate years. Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 and 111.*

**329**

**TROPICAL MARINE BIOLOGY**

A field-oriented course where students study the creatures of the fringing reefs, barrier reefs, lagoons, turtlegrass beds, and mangrove swamps at a tropical marine laboratory. Studies include survey of plankton, invertebrates, and fish as well as the physical and chemical characteristics that influence their distribution. *Prerequisites: BIO 110 and 111. Alternate May terms.*

**333**

**MEDICINAL AND POISONOUS PLANTS**

An overview of plants, fungi and bacteria that produce physiologically active substances important to humans and animals because of their toxic and/or medicinal qualities. Major themes include types of phytochemicals and their generalized actions, and a survey of organisms known to make metabolically active chemicals. The organismal survey includes toxicity symptoms and known mechanisms of how toxic/medicinal chemicals interfere with physiological functions of organisms consuming them. The course utilizes a problem-solving approach. Laboratory topics include plant classification and identification of common medicinal or poisonous plants. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 and 111 or consent of instructor.*

**334**

**INVERTEBRATE ZOOLOGY**

Comparative study of the invertebrate phyla with emphasis on phylogeny, physiology, morphology, and ecology. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 and 111. Alternate years.*

**336**

**VERTEBRATE BIOLOGY**

A biological survey of vertebrates including aspects of morphology, physiology, behavior, ecology, and evolution. Issues of conservation and biodiversity are also addressed. Laboratories will focus on the field biology of Pennsylvania vertebrates and on dissections to emphasize comparative anatomy. *Four hours of lecture and one four-hour laboratory per week. Prerequisites: BIO 110 and 111. Alternate years.*

**338**

**HUMAN ANATOMY**

A comprehensive overview of the structural, functional, and developmental anatomy of the human body achieved through lectures and dissection studies. Particular consideration is given to the bony structures, musculature, neuroanatomy, and the relationships of the various structures to one another. Students learn the general form, location, function, and relationships of these features and acquire a vocabulary essential for future studies. This course provides a detailed knowledge of the body systems and integrates a basic understanding of embryology and surface anatomy with the study of the human cadaver. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 and 111.*

**342****ANIMAL BEHAVIOR**

A study of causation, function, evolution, and biological significance of animal behaviors in their normal environment and social contexts. *Three hours of lecture and one two-hour laboratory per week. Prerequisites: BIO 110 and 111. Alternate years.*

**343****COMPARATIVE BIOMECHANICS**

A comparative study of how biological organisms deal with the physical challenges of their internal and external environment. Using humans, other animals, and plants as examples, the course addresses biological materials and their properties, movements including walking, running, jumping, swimming, and flying, as well as dynamic behaviors such as feeding and breathing. Labs use high-speed videography and digital image analysis to assess animal movement and develop skills complementary to animal behavior, bio-inspired design, and kinesiology. Math and physics are key components of this course. *Prerequisite: BIO 110 and 111; and math level 3 or higher or completion of MATH 100; or consent of instructor. Alternate years.*

**346****VIROLOGY**

An introduction to the study of viruses. The course covers virus structure and replication, diseases caused by viruses, modern treatments of viral infections, and viral vaccines produced by recombinant DNA and other technologies. Also includes a description of how viruses are used as tools for genetic engineering and for studying cellular processes like signal transduction, regulation of expression, and oncogenesis (cancer). *Four hours of lecture per week. Prerequisites: BIO 110 and 111 or consent of instructor. Alternate years.*

**347****IMMUNOLOGY**

An introduction to how pathogens cause disease and how host organisms defend against infectious and autoimmune diseases. Relationships between antigens, antibodies, and T cells are explored. Other topics include immediate and delayed hypersensitivities, autoimmune disease mechanisms, immunohaematology, hybridoma technology, the chemistry and function of complement, and organ transplantation and prevention of rejection by manipulating the immune system. Laboratory experiments include agglutination, immunoprecipitations, ELISA assays, immunofluorescence, microscopy, Western blotting. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 and 111. Alternate years.*

**400****BIOLOGY PRACTICUM**

A work-oriented experience for junior or senior biology majors jointly sponsored by the Department and a public or private agency. The practicum is designed to integrate classroom theory with field or laboratory practice. In addition to attendance at a weekly seminar, students spend 10-12 hours per week at the sponsoring agency. *May be repeated once for credit with consent of instructor when topics are different.*

**432**

**GENOME ANALYSIS**

An examination of the genomes of humans, other animals, plants, and microbes to identify characteristics unique to specific groups as well as genomic features shared by multiple groups. Emphasizes the application of this information in the fields of medicine, environmental biology, and evolution. The laboratory integrates experiments at the lab bench with a substantial bioinformatics component. *Three hours of lecture and one three-hour laboratory per week.*

*Prerequisites: BIO 110, 111, and 222. Alternate years.*

**435**

**CELL BIOLOGY**

An intensive study of the cell as the basic unit of life. Topics include origins of cellular life, biochemistry of the cell, enzymatic reactions, cellular membranes, intracellular communication, the cell cycle, the cytoskeleton and cell motility, protein sorting, distribution, and secretion. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 and 111 and one semester of organic chemistry. Alternate years.*

**436**

**EVOLUTION**

A study of the mechanics of evolutionary change and its role within populations. Topics typically covered include macroevolution, microevolution, natural selection, adaptation, neutral theory, population genetics, speciation, and extinction. Interactive lectures, readings from the primary literature, laboratory and field investigations, and simulation exercises will be used to actively explore the principles of evolutionary change and its consequences. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110, 111, or consent of instructor. Alternate years.*

**437**

**MOLECULAR BIOLOGY**

An in-depth analysis of fundamental cellular information flow processes with particular emphasis on how these processes have been applied in the laboratory, resulting in technologies such as DNA cloning and sequencing, the Polymerase Chain Reaction (PCR), genetic testing, gene therapy, synthetic biology, and CRISPR/Cas9 genome editing. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110, 111, and 222. Alternate years.*

**446**

**PLANT PHYSIOLOGICAL ECOLOGY**

A study of plant resource acquisition in the face of competing neighbors and the quickly changing global environment. The course focuses on how differences in the environment affect plant water use, carbon dioxide acquisition, light capture, and nutrient uptake. *Three hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110, 111, and 225. Alternate years.*

**447**

#### **CELL AND MOLECULAR BIOLOGY RESEARCH METHODS**

This course focuses on the culture and methods of biology research. Students meet twice per week to learn experimental design, good record keeping, ordering/preparation of materials, equipment maintenance, and analyses of primary biology literature. Each student designs and conducts a lab project that can be supervised by any member of the biology faculty. Each student prepares a research proposal, an oral presentation, poster presentation, and a research journal-style paper. *Two one-hour seminars and six to eight hours of laboratory work per week.*  
*Prerequisites: BIO 110, 111, at least two other biology courses, and consent of instructor. May be repeated once for credit with consent of instructor.*

**349, 449**

#### **BIOLOGY COLLOQUIUM**

This course offers the student a chance to become familiar with research in the biological sciences using techniques such as meeting and talking with active researchers, reading and critically analyzing the current literature, and discussing the ideas and methods shaping biology. Biology majors with junior and senior standing are required to complete colloquium during all semesters on campus except for semesters when student teaching or participating in an equivalent off-campus academic experience such as Study Abroad. *One hour per week.*  
*Prerequisite: Biology majors with junior or senior class standing. Pass/Fail. Non-credit course.*

**470-479**

#### **INTERNSHIP**

Recent internships have taken place at the Department of Environmental Protection, waste water treatment facilities, nursing homes, and Susquehanna Health System.

**N80-N89**

#### **INDEPENDENT STUDY**

Departmental studies are experimentally oriented and may entail either lab or field work.

**490-491**

#### **INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

Examples of recent honors projects have involved stream analysis, mouse developmental neuroscience studies, analysis of muscle cell gene expression, discovery of novel bacterial species, and vertebrate paleontology.

## BIOMEDICAL SCIENCES

### The B.A. Degree

The B.A. degree in Biomedical Sciences requires 13 courses from a combination of biology, chemistry, and mathematics, with elective courses from a variety of disciplines. This major provides a rigorous grounding in biomedical sciences for students planning careers in allied health fields such as nursing, genetic counseling, occupational therapy, or who wish to combine their biomedical training with other areas of study, such as psychology, education, public health, or business. This major prepares students for careers in the healthcare industry, education, or other technical disciplines related to healthcare. Different healthcare disciplines require specific training and prerequisite coursework, so the courses chosen as electives in this major should be discussed with your major and pre-health advisor(s).

### Major Requirements

|              |                                     |
|--------------|-------------------------------------|
| BIO 110      | Introduction to Biology I           |
| BIO 111      | Introduction to Biology II          |
| BIO 222      | Genetics                            |
| BIO 323      | Human Physiology                    |
| BIO 338      | Human Anatomy                       |
| CHEM 122/123 | General Chemistry I and Laboratory  |
| CHEM 124/125 | General Chemistry II and Laboratory |
| MATH 123     | Statistics                          |

### One of the following:

|              |                                    |
|--------------|------------------------------------|
| CHEM 222/223 | Organic Chemistry I and Laboratory |
| CHEM 219     | Organic and Biochemistry           |

### Four courses from at least two different prefixes, at least two of which must be numbered 300 or higher, chosen from the following:

|              |                                     |
|--------------|-------------------------------------|
| ANTH 101     | Ancient Bodies, Modern Lives        |
| BIO 108      | Public Health                       |
| BIO 322      | Neurogenetics                       |
| BIO 324      | Medical Microbiology                |
| BIO 333      | Medicinal and Poisonous Plants      |
| BIO 336      | Vertebrate Biology                  |
| BIO 342      | Animal Behavior                     |
| BIO 343      | Biomechanics                        |
| BIO 347      | Immunology                          |
| BIO 432      | Genome Analysis                     |
| BIO 435      | Cell Biology                        |
| BIO 437      | Molecular Biology                   |
| BIOCH 444    | Biochemistry I                      |
| BIOCH 445    | Biochemistry II                     |
| CHEM 224/225 | Organic Chemistry II and Laboratory |
| CHEM 232     | Quantitative Chemical Analysis      |

|           |                                              |
|-----------|----------------------------------------------|
| CHEM 443  | Instrumental Analysis                        |
| MATH 128  | Calculus I                                   |
| NEURO 210 | Introduction to Neuroscience I               |
| NEURO 211 | Introduction to Neuroscience II              |
| PHIL 219  | Philosophical Issues in Health Care          |
| PHYS 225  | Fundamentals of Physics I                    |
| PSY 206   | Brain and Behavior                           |
| PSY 217   | Lifespan Development                         |
| PSY 239   | Applied Behavioral Analysis                  |
| PSY 242   | Drugs Behavior and Society                   |
| PSY 315   | Clinical Neuroscience                        |
| PSY 342   | Health Psychology                            |
| SOC 210   | Sociology of Mental Health and Illness       |
| SOC 212   | Contagion                                    |
| SOC 228   | Aging and Society                            |
| SOC 310   | Sociology of Health, Illness, and Healthcare |

### **The B.S. Degree**

The B.S. degree in biomedical sciences requires 16 courses from a combination of biology, biochemistry, chemistry, mathematics, and physics with elective courses from a variety of disciplines. This major is more intensive than the B.A., requires 16 courses, and is intended to prepare students for careers at the highest levels of healthcare and biomedical research, including medical school, physician assistant, physical therapy, veterinary medicine, Doctor of Pharmacy, and Ph.D. level graduate biomedical research programs. Different healthcare disciplines require specific levels of training and prerequisite coursework, so the courses you choose as electives in this major should be chosen in consultation with your major and pre-health advisor(s).

### **Major Requirements**

|              |                                     |
|--------------|-------------------------------------|
| BIO 110      | Introduction to Biology I           |
| BIO 111      | Introduction to Biology II          |
| BIO 222      | Genetics                            |
| BIO 323      | Human Physiology                    |
| BIO 324      | Medical Microbiology                |
| BIO 338      | Human Anatomy                       |
| BIO 347      | Immunology                          |
| BIOCH 444    | Biochemistry I                      |
| CHEM 122/123 | General Chemistry I and Laboratory  |
| CHEM 124/125 | General Chemistry II and Laboratory |
| CHEM 222/223 | Organic Chemistry I and Laboratory  |
| CHEM 224/225 | Organic Chemistry II and Laboratory |
| MATH 128     | Calculus I                          |
| PHYS 225     | Fundamentals of Physics I           |



**Two courses from the following:**

|           |                                              |
|-----------|----------------------------------------------|
| ANTH 101  | Ancient Bodies, Modern Lives                 |
| BIO 108   | Public Health                                |
| BIO 322   | Neurogenetics                                |
| BIO 333   | Medicinal and Poisonous Plants               |
| BIO 336   | Vertebrate Biology                           |
| BIO 342   | Animal Behavior                              |
| BIO 343   | Biomechanics                                 |
| BIO 432   | Genome Analysis                              |
| BIO 435   | Cell Biology                                 |
| BIO 437   | Molecular Biology                            |
| BIOCH 445 | Biochemistry II                              |
| CHEM 232  | Quantitative Chemical Analysis               |
| CHEM 443  | Instrumental Analysis                        |
| MATH 123  | Statistics                                   |
| MATH 129  | Calculus II                                  |
| NEURO 210 | Introduction to Neuroscience I               |
| NEURO 211 | Introduction to Neuroscience II              |
| PHIL 219  | Philosophical Issues in Health Care          |
| PHYS 226  | Fundamentals of Physics II                   |
| PSY 206   | Brain and Behavior                           |
| PSY 217   | Lifespan Development                         |
| PSY 239   | Applied Behavioral Analysis                  |
| PSY 242   | Drugs Behavior and Society                   |
| PSY 315   | Clinical Neuroscience                        |
| PSY 342   | Health Psychology                            |
| SOC 210   | Sociology of Mental Health and Illness       |
| SOC 212   | Contagion                                    |
| SOC 228   | Aging and Society                            |
| SOC 310   | Sociology of Health, Illness, and Healthcare |

Biomedical Sciences majors for both the B.A. and B.S. degrees are also required to successfully complete four semesters of BIO 349/449 (non-credit colloquium) and complete a capstone experience described below.

**Capstone Requirements**

Biomedical Sciences majors must choose one of the options below and deliver a presentation of their experience in BIO colloquium. Research or shadowing experiences must have a clear focus on biomedical research or practice as determined by the program coordinator(s). Finally, all majors are required to pass the Biology Department Exit Exam.

- BIO 447 Cell and Molecular Biology Research Methods
- CHEM/BIOCH 449 Information, Communication, and Ethics
- Lycoming College Independent Study or Honors Project
- Clinical internship or research experience (includes NSF REU or NIH SIP programs or their equivalents)

- Medical Laboratory Science/Medical Technology Internship
- Significant clinical shadowing experience(s) with documentation of at least 100 hours.

Students may not double major in any combination of Biochemistry, Biology, Biomedical Sciences, Cell and Molecular Biology, or Ecology.

### **Cooperative Programs**

Lycoming College has several affiliations with cooperative programs relevant to Biomedical Sciences majors. These programs are described in the Academic Program section of the catalog under Cooperative Programs. Some programs may have accelerated timelines that would preclude a student from being able to fully complete the Biomedical Sciences major. In these instances, students must make an appeal to the Academic Standards Committee, in consultation with their academic advisor, to approve exceptions to the major. Students interested in these programs should contact the program director as soon as possible.

## **CELL AND MOLECULAR BIOLOGY**

### **Major Requirements**

#### **The B.A. Degree**

The major in Cell and Molecular Biology requires courses in biology, chemistry, and mathematics. The required courses are below. Declared Cell and Molecular Biology majors may substitute BIO 106 for BIO 110 and BIO 107 for BIO 111 with written consent of the department chair and ASC approval.

#### **Core courses:**

|              |                                        |
|--------------|----------------------------------------|
| BIO 110      | Introduction to Biology I              |
| BIO 111      | Introduction to Biology II             |
| BIO 222      | Genetics                               |
| BIO 435      | Cell Biology                           |
| CHEM 122/123 | General Chemistry I and Laboratory I   |
| CHEM 124/125 | General Chemistry II and Laboratory II |

#### **One course from the following:**

|         |                   |
|---------|-------------------|
| BIO 432 | Genome Analysis   |
| BIO 437 | Molecular Biology |

#### **One course from the following:**

|              |                                      |
|--------------|--------------------------------------|
| CHEM 219     | Organic and Biochemistry             |
| CHEM 222/223 | Organic Chemistry I and Laboratory I |

#### **Two courses from the following:**

CPTR 125     Introduction to Computer Science  
Any CPTR course numbered 246 or higher

MATH 109 Applied Elementary Calculus  
MATH 115 Applied Discrete Mathematics  
MATH 123 Introduction to Statistics  
MATH 127 Precalculus Mathematics  
MATH 128 Calculus with Analytic Geometry I  
MATH 129 Calculus with Analytic Geometry II  
Any MATH course numbered 200 or higher

**One course from the following:**

BIO 322 Neurogenetics  
BIO 347 Immunology  
BIO 432 Genome Analysis  
BIO 437 Molecular Biology  
BIO 447 Cell & Molecular Biology Research Methods  
BIOCH 444 Biochemistry I  
BIOCH 445 Biochemistry II  
NEURO 210 Introduction to Neuroscience I

**One course from the following:**

BIO 201 Introduction to Birdwatching and Ornithology  
BIO 224 Ecology  
BIO 325 Microbial Ecology  
BIO 328 Aquatic Biology  
BIO 329 Tropical Marine Biology  
BIO 333 Medicinal & Poisonous Plants  
BIO 342 Animal Behavior  
BIO 343 Comparative Biomechanics  
BIO 436 Evolution  
BIO 446 Plant Physiological Ecology  
ENV 215 Introduction to Geographic Information Systems (GIS)

**One course from the following:**

BIO 225 Plant Science  
BIO 230 Nutrition: Metabolism & Health  
BIO 323 Human Physiology  
BIO 324 Medical Microbiology  
BIO 334 Invertebrate Zoology  
BIO 336 Vertebrate Biology  
BIO 338 Human Anatomy  
BIO 346 Virology  
NEURO 211 Introduction to Neuroscience II

Cell and Molecular Biology majors are required to complete four semesters of BIO 349/449 Colloquium. Enrollment in student teaching and/or other similar off-campus academic experiences will be accepted by the department in lieu of that semester's colloquium requirement.

## The B.S. Degree

To qualify for the B.S. degree, Cell and Molecular Biology majors must complete the major described above and three additional courses chosen in any combination from the following: BIO 222 or higher; BIOCH 444, 445; CHEM 224/225 or higher; ENV 445; NEURO 210, 211; PHYS 225 or higher; or MATH 127, 128, 129, or any MATH course numbered 200 or higher.

## Capstone Requirements

In order to graduate, all Cell and Molecular Biology majors must demonstrate to the Biology Department their command of biology by meeting the following three criteria.

**1. Practical Experience:** All students must complete at least one of the experiences in the following list: Internship, Practicum, BIO 447, Relevant Summer Experience, Independent Studies, Honors, Medical Laboratory Science Internship, Medical Technology Internship, Teaching Semester, Biology Laboratory Assistant, Biology-related volunteer work. (Summer experiences, Biology-related volunteer work, or working as a lab assistant must be approved by the Department in order to be used to meet this requirement.)

**2. Research & Presentation Component:** All junior and senior majors are required to successfully complete Biology Colloquia (BIO 349/449) during all their semesters on campus. During their final year, students will research a biological topic and make an oral presentation at the Biology Colloquium. This will demonstrate information literacy in cell and molecular biology.

**3. Assessment:** All majors are required to pass a Biology Department Exit Exam.

Students may not double major in any combination of Biochemistry, Biology, Biomedical Sciences, Cell and Molecular Biology, or Ecology.

## ECOLOGY

### Major Requirements

#### The B.A. Degree

The major in Ecology requires courses in biology, chemistry, and mathematics. The required courses are below. Declared Ecology majors may substitute BIO 106 for BIO 110 and BIO 107 for BIO 111 with written consent of the department chair and ASC approval.

#### Core courses:

|         |                            |
|---------|----------------------------|
| BIO 110 | Introduction to Biology I  |
| BIO 111 | Introduction to Biology II |
| BIO 224 | Ecology                    |
| BIO 225 | Plant Sciences             |

CHEM 122/123      General Chemistry I and Laboratory I  
CHEM 124/125      General Chemistry II and Laboratory II

**One course from the following:**

BIO 334      Invertebrate Zoology  
BIO 336      Vertebrate Biology

**One course from the following:**

CHEM 219      Organic and Biochemistry  
CHEM 222/223      Organic Chemistry I and Laboratory I

**Two courses from the following:**

CPTR 125      Introduction to Computer Science  
Any CPTR course numbered 246 or higher  
MATH 109      Applied Elementary Calculus  
MATH 115      Applied Discrete Mathematics  
MATH 123      Introduction to Statistics  
MATH 127      Precalculus Mathematics  
MATH 128      Calculus with Analytic Geometry I  
MATH 129      Calculus with Analytic Geometry II  
Any MATH course numbered 200 or higher

**One course from the following:**

BIO 222      Genetics  
BIO 322      Neurogenetics  
BIO 347      Immunology  
BIO 432      Genome Analysis  
BIO 435      Cell Biology  
BIO 437      Molecular Biology  
BIO 447      Cell & Molecular Biology Research Methods  
BIOCH 444      Biochemistry I  
BIOCH 445      Biochemistry II  
NEURO 210      Introduction to Neuroscience I

**Two courses from the following:**

BIO 201      Introduction to Birdwatching and Ornithology  
BIO 325      Microbial Ecology  
BIO 328      Aquatic Biology  
BIO 329      Tropical Marine Biology  
BIO 333      Medicinal & Poisonous Plants  
BIO 342      Animal Behavior  
BIO 343      Comparative Biomechanics  
BIO 436      Evolution  
BIO 446      Plant Physiological Ecology  
ENV 215      Introduction to Geographic Information Systems (GIS)

Ecology majors are required to complete four semesters of BIO 349/449 Colloquium. Enrollment in student teaching and/or other similar off-campus academic experiences will be accepted by the department in lieu of that semester's colloquium requirement.

### **The B.S. Degree**

To qualify for the B.S. degree, Ecology majors must complete the major described above and pass three additional courses chosen in any combination from the following: BIO 201 or higher; BIOCH 444, 445; CHEM 224/225 or higher; ENV 445; NEURO 210, 211; PHYS 225 or higher; or MATH 127, 128, 129, or any MATH course numbered 200 or higher.

### **Capstone Requirements**

In order to graduate, all Ecology majors must demonstrate to the Biology Department their command of biology by meeting the following three criteria.

**1. Practical Experience:** All students must complete at least one of the experiences in the following list: Internship, Practicum, BIO 447, Relevant Summer Experience, Independent Studies, Honors, Teaching Semester, Biology Laboratory Assistant, Biology-related volunteer work. (Summer experiences, Biology-related volunteer work, or working as a lab assistant must be approved by the Department in order to be used to meet this requirement.)

**2. Research & Presentation Component:** All junior and senior majors are required to successfully complete Biology Colloquia (BIO 349/449) during all their semesters on campus. During their final year, students will research a biological topic and make an oral presentation at the Biology Colloquium. This will demonstrate information literacy in ecology.

**3. Assessment:** All majors are required to pass a Biology Department Exit Exam.

Students may not double major in any combination of Biochemistry, Biology, Biomedical Sciences, Cell and Molecular Biology, or Ecology.

## BUSINESS ADMINISTRATION (BUS)

Associate Professors: Grassmueck, Irwin, Zajack (Chair)

Assistant Professor: Han

- Major: Business Administration, Finance, Mathematical Finance
- Courses required for major: 12
- Capstone requirement for Business Administration: Assessment Examination or Praxis Examination for Business Education and one business course numbered 400 or above
- Capstone requirement for Finance: BUS 438 and Assessment Examination
- Capstone requirement for Mathematical Finance: BUS 438
- Minor: Business Administration

The major in Business Administration is designed to educate students about business and management functions in for profit, non-profit, and public organizations. The program provides well-balanced preparation for a wide variety of professions and careers, including banking, financial services, small business management, marketing, sales, advertising, retailing, management, supervision, investments, human resources management, organization development, entrepreneurship, and management information systems. The major is also appropriate for students who plan to attend graduate school in business or related fields, such as law or public administration. Students may not double major in business administration and finance.

The Department of Business Administration is a member of the Institute for Management Studies. For more information, see the Institute for Management Studies listing.

## BUSINESS (BUS)

### Major Requirements

**Business Administration major:** Students must complete the following courses: ACCT 110 and either ACCT 130, 223, or 235; BUS 228, 238, 244; ECON 110; ECON 111 or SPLED 230; one BUS or ENTR course numbered 400 or higher except BUS 439; and four additional courses from the following: BUS courses numbered 300 or higher; CMS 324, 332; EDUC 465; or ENTR courses numbered 300 or higher.

\*ACCT 235, EDUC 465, and SPLED 230 are recommended only for students pursuing a teaching certificate in Business. SPLED 230 and EDUC 465 are intended for students who are interested in obtaining their teaching certification for related fields (e.g., school psychology, counseling). Additionally, these students should plan to complete ENTR 315 as one of their 300-level elective courses.

**Finance major:** Students must complete ACCT 110; one course from ACCT 130, 223, or 225; BUS 228, 238, 244, 438; ECON 110, 111; and four courses from the following list, of which at least three must have a BUS prefix: ACCT 225, 344, 441; BUS 311, 337, 339, 349; ECON 220.

### **Capstone Requirement**

To earn a degree in business administration, students must successfully complete an outcomes assessment exam or the Business Education Praxis Exam during their senior year as determined by the Department. Students who fail must re-take and pass the assessment.

### **Minor Requirements**

A minor in Business Administration consists of BUS 228, 238, 244, and two additional BUS courses at the 200 level or above. ACCT 110, CMS 332 or 324 may be substituted for one BUS elective.

### **Internships**

Through BUS 439, Business Practicum, the department facilitates a wide variety of internships with businesses, government agencies, and nonprofit organizations. In addition, the department is a member of the Institute for Management Studies, which also facilitates internships, including full-time internships during the summer.

### **228**

#### **MARKETING PRINCIPLES**

A study of the methods used by business and nonprofit organizations to design, price, promote, and distribute their products and services. Topics include new product development, advertising, retailing, consumer behavior, marketing strategy, ethical issues in marketing, and others.

### **238**

#### **FUNDAMENTALS OF FINANCIAL MANAGEMENT**

A study of the fundamental theory, tools, and methods of financial management for a business owner. Topics include the time value of money, analysis of financial statements, capital budgeting, cost of capital, and capital structure. *Prerequisites: Either Math placement of level 2 or higher or one Math course beyond MATH 100.*

### **244**

#### **MANAGEMENT AND ORGANIZATIONAL BEHAVIOR**

A study of the complex character of organizational life and the discipline and process of management. Topics include the evolution and scope of organizations and management, planning, organizing, leading, and controlling. Emphasis is placed on the importance of managing in a global environment, understanding the ethical implications of managerial decisions, and appreciating work place diversity. *Fulfills Domestic Cultural Diversity Requirement.*

### **300**

#### **BUSINESS AND SOCIETY**

Explores the intersection of business and society, with an emphasis on how society shapes business decisions, how business decisions shape society, and the evolution of these relationships over time. This class explores alternative viewpoints and aims to instill an appreciation of the role of business and entrepreneurship in society. It emphasizes critical thinking skills by



exposing students to different perspectives. Students explore the social foundations of business and entrepreneurship, as well as their economic meaning and implications. Key themes include the economics of enterprise, the importance of institutions, the roles of risk and uncertainty, the causes of profit, the process of decision making, the sovereignty of consumers, the effects of competition, and inequality of wealth and income. *Fulfills Domestic Cultural Diversity Requirement.*

### **309**

#### **ORGANIZATIONAL THEORY**

Explores how we think about organizations by examining the theoretical underpinnings of our understanding of organizations and organizational life, beginning with a historical survey of early theorists and moving on to explore the major theoretical lenses of current research. Explores the roles of technology, the organizational environment, social structure, and power in organizations through a variety of viewpoints including general systems theory, contingency theory, social construction, institutional theory, culture, storytelling, and discourse analysis.

### **310**

#### **HUMAN RESOURCES MANAGEMENT**

A study of the human resources function in organizations. The course introduces the roles and functions of the human resources department and how managers engage in human resource activities at work. Explores the functions of selection, training and development, compensation, retention, performance appraisal, promotion, employment law, and the modern-day importance of strategic human resource management. *Prerequisites: BUS 244 or consent of instructor. Fulfills Domestic Cultural Diversity Requirement.*

### **311**

#### **INVESTMENT THEORY**

Focuses on financial theory and empirical evidence that are used for investment decisions. A sound investment decision requires in-depth knowledge of the financial markets and empirical knowledge. This class is devoted to understanding investment principles and investors' attitudes. Students learn how financial thinking has evolved since the turn of the 20th century by studying the great thinkers in the field of finance. The majority of the class is devoted to understanding the past and developing an investment policy based on individual risk preferences based on the knowledge and skills from class.

### **314**

#### **BUSINESS WRITING**

Explores the principles of business writing through critical analysis, with special focus on mechanics, organization, clarity, conciseness, tone, and correctness. Students learn to develop, organize, and express ideas in various formats, including emails, business letters, memoranda, reports and proposals. Emphasis is placed on identifying the appropriate target audience and using the style appropriate both for the audience and the material to be communicated. *Prerequisites: ENGL 106 or consent of instructor.*

**315****PRIVATELY OWNED BUSINESS MANAGEMENT**

Explores how to manage a privately-owned firm from developing the business idea, managing day-to-day issues, and exit strategies and succession planning. Students examine how to adapt tools developed for publicly-owned firms to create effective strategies for private firms including small and family-owned businesses. Topics include general management issues such as developing and supporting organizational culture, employment best practices, and using budgets as planning tools. *Cross-listed as ENTR 315. Prerequisites: ENTR 200; or BUS 228, 238, and 244; or consent of instructor.*

**316****MANAGERIAL RESEARCH METHODS**

Examines the objective process of collecting and analyzing data to aid managerial decision making. Students learn how to review, apply, and conduct organizational research. Topics include the scientific method, sampling, data collection, observations and interviews, survey construction, and experimental design. Students learn how statistics are used to analyze organizational data. *Prerequisite: BUS 244.*

**318****FINANCIAL ECONOMICS**

A rigorous study of the theoretical foundations of modern financial economics. The course covers the central themes of modern finance including individual investment decisions under uncertainty, investors' attitude towards risk, capital allocation, portfolio selection, capital market equilibrium and asset valuation, option pricing, and the potential application of these themes. This class provides students with a structure for thinking about investment theory and the framework for addressing investment problems in a systematic manner. Students acquire a clear understanding of the major theories concerning portfolio decisions and their application for the valuation of securities.

**320****SOCIAL ENTREPRENEURSHIP**

Focuses on creating a business to solve a social problem with the intent of achieving both a social impact and financial sustainability. The course views social entrepreneurship as a distinct alternative to public sector initiatives, especially in its approach to pervasive problems in society. Students build on principles learned in ENTR 200 and apply them and additional strategies to impacting social issues. *Cross-listed as ENTR 320. Prerequisites: ENTR 200; or BUS 228, 238, and 244; or consent of instructor.*

**321****CONSUMER BEHAVIOR**

Examine how consumers think, feel, and act, and how these insights inform effective marketing strategies. Topics may include game theory, judgment and decision-making, and satisfaction, explored through the lenses of economics, psychology, and managerial practice. Students learn to collect and analyze consumer data, understand the impact of digital platforms and AI in marketing, and apply insights gained from the analysis to real-world strategy. The course prepares students to design marketing plans that drive value and become more informed

consumers and strategic business leaders. *Prerequisites: BUS 228; and Math placement of level 2 or higher or completion of MATH 100; or consent of instructor.*

### **322**

#### **MARKETING ANALYTICS**

Introduces students to the essential role of analytics in modern marketing, where insights derived from data help identify high-value customers, tailor solutions to their needs, and refine strategies to enhance retention and respond to competition. Through a combination of conceptual foundations and hands-on applications, students learn to use analytical tools to transform raw data into actionable marketing insights. *Prerequisites: BUS 228; math placement level 3 or higher, or credit for a statistics course of at least 3 credits, or concurrent enrollment in MATH 123 and IMS 100 or demonstrated proficiency in MS Excel; or consent of instructor.*

### **323**

#### **SMART MARKET: AI, GAME THEORY, AND MARKET DESIGN**

While framed around the emerging role of artificial intelligence in marketing, this course focuses primarily on the strategic principles of game theory and market design and how these frameworks shape competitive interactions, pricing, and consumer engagement. Students will learn how AI tools can be applied to design more efficient markets, predict competitor moves, optimize advertising auctions, and personalize customer experiences. *Prerequisites: BUS 228 or consent of instructor. Math placement of level 2 or higher.*

### **325**

#### **DIGITAL MARKETING**

With the rapid shift of advertising dollars away from traditional media to digital platforms, it is becoming increasingly important for entrepreneurs and marketing graduates to be well-versed in digital marketing fundamentals. Through readings, papers, videos, case studies, and hands-on projects, students come away with an understanding of successful digital marketing strategies, user generated content, search, social media and networks, mobile, and web analytics. Students also complete a hands-on project to build a marketing plan for a local business. Students exit the course with a solid understanding of digital marketing tactics, tools, and resources available for ongoing education. *Cross-listed as ENTR 325. Prerequisites: ENTR 200, BUS 228, or consent of instructor.*

### **331**

#### **DECISION MAKING**

An exploration of the judgments and decisions underlying human behavior, including both individual and situational influences on the choices we make daily. Students learn how to apply theories of judgment and decision-making within the context of the workplace. The world of professional sports is one workplace where judgments, decisions, and organizational performance are easily observable. Decisions by team management, coaches, and players are explored as examples, as we examine the trend toward data-driven decision making in organizations.

**333**

### **GLOBAL BUSINESS STRATEGIES**

A study of the basic concepts and theories pertaining to today's global economy, business environment, and markets. Topics include international business environment, foreign political systems, world cultures, global economic integration, operation of the international monetary system, and ethical issues involving global business. Also covers multinational corporations, national trade policies, foreign direct investment, and regional trading areas. *Prerequisites: BUS 228, 238, and 244 or consent of instructor. Fulfills Global Cultural Diversity Requirement.*

**337**

### **SECURITY VALUATION AND PORTFOLIO THEORY**

An introduction to the valuation of securities and quantitative portfolio theory, practice, optimization, and management. It addresses investor choice, market opportunities, and optimal portfolio selection. It examines security covariance and return models, performance analysis, and return attribution. A detailed examination of portfolio management and capital market theory including a review of material on efficient markets, the basic Markowitz portfolio model and the capital asset pricing model. These concepts are addressed in terms of international diversification and the evaluation of portfolio performance. *Prerequisite: BUS 238.*

**339**

### **CORPORATE FINANCE AND INVESTMENT BANKING**

An intensive study of issues and applications of financial management in corporate finance. Topics include advanced capital budgeting, cash flow estimation and risk analysis, capital structure and leverage, dividend policy, international finance, and basic investment banking. *Prerequisites: ACCT 110 and BUS 238 or consent of instructor.*

**342**

### **MARKETING RESEARCH**

The study of the principles and practices of marketing research. The focus is on the development and application of marketing research methods. Topics covered include selection of a research design, data collection, analysis, and report writing. Both quantitative and qualitative methods are covered. Focuses on an applied project. *Prerequisites: BUS 228 or consent of instructor.*

**347**

### **SPECIAL TOPICS IN MARKETING**

Examines social controversies involving marketing as portrayed in books, popular writings, political debates, and films (e.g., marketing of junk-foods, prescription drugs, or violent video games). Analyzes specialized marketing practices, such as financial services marketing, nonprofit marketing, internet marketing, or sports and recreational marketing. *Prerequisites: BUS 228 or consent of instructor. May be repeated once for credit with departmental approval when topics are different.*

**348**

### **SPECIAL TOPICS IN MANAGEMENT**

Examines social controversies involving management as portrayed in books, popular writings, political writings, and films (e.g., the effects of plant closings and global competition on local

communities). Analyzes specialized management practices, such as social entrepreneurship, environmentally sustainable business practices, or public administration. *Prerequisites: BUS 244 or consent of instructor. May be repeated once for credit with consent of department when topics are different.*

**349**

#### SPECIAL TOPICS IN FINANCE

Examines social controversies involving finance as portrayed in books, popular writings, political debates, and films (e.g., Enron and other corporate financial scandals, the destabilizing effects of hedge funds, and programmed trading). Analyzes specialized financial practices, such as public finance or investment banking. *Prerequisites: BUS 238 or consent of instructor. May be repeated once for credit with consent of department when topics are different.*

**400**

#### APPLIED ENTREPRENEURSHIP

Integrates all core coursework into an intensive application in entrepreneurship. The course revolves around entrepreneur, venture capital, and support service (legal, etc.) guest lecturers both on campus and at the entrepreneur's place of business. In addition, the course requires advanced case studies, advanced simulations, and hands on projects focused on starting or growing an enterprise along with corporate venturing. When possible, students work with an entrepreneur to help in advanced planning to launch or grow the business. *Cross-listed as ENTR 400. Prerequisites: ENTR 200, 210, and 220; or ENTR 200, BUS 228, 238, and 244; or consent of instructor.*

**424**

#### LEADERSHIP IN THEORY AND PRACTICE

Designed to provide insight into the practical application of foundational theories of leadership. Students explore scholarly approaches to the topic and think critically about the workplace implications of major theories. This course investigates approaches to leadership that encourage and empower followers to act in accordance with their purpose and personal values. Particular attention is paid to how leaders can create circumstances in which followers are intrinsically motivated to perform at their best. *Prerequisites: BUS 228, 238, and 244.*

**429**

#### MARKETING STRATEGY

A study of the methods used by business and nonprofit organizations to analyze and select target markets and then to develop strategies for gaining and maintaining these customers. Topics include competitive strategy, market segmentation, product positioning, promotional design, and marketing-related financial analysis. Addresses case studies and the development of a detailed marketing plan. *Prerequisites: BUS 228, 238, and 244 or consent of instructor.*

**438**

#### FINANCIAL MODELING

Introduces students to mathematical, programming, and statistical tools used in the real-world analysis and modeling of financial data. These tools are applied to model asset returns, measure risk, construct optimized portfolios, value securities and to develop advanced capital budgeting

tools using Microsoft Excel and other software if necessary. Students build probability models for asset returns, apply statistical techniques to evaluate if asset returns are normally distributed, use Monte Carlo simulation, construct efficient portfolios, and use other tools to evaluate financial models. *Prerequisites: BUS 228, 238, and 244.*

#### **439**

##### **BUSINESS PRACTICUM**

Provides students with practical work experience with local companies and organizations. Students work 10-12 hours per week for their sponsor organizations, in addition to attending a weekly seminar on management topics relevant to their work assignments. Since enrollment is limited by the available number of positions, students must apply directly to the Business Department before preregistration to be eligible for the course. *May be repeated once for credit with consent of instructor when topics are different.*

#### **441**

##### **BUSINESS STRATEGY**

An intensive study of the entrepreneurial function of business enterprises designed to build skills in conducting strategic analysis and strategic development in a variety of industries and competitive situations. Students examine industry structure, functional strategies, competitive challenges of a global marketplace, and sources of sustainable competitive advantage. Designed to integrate the knowledge and skills gained from previous coursework in business and related fields. *Prerequisites: BUS 228, 238, and 244 or consent of instructor. Juniors and Seniors only.*

#### **470-479**

##### **INTERNSHIP**

*Prerequisites: BUS 228, 238, and 244 or consent of instructor.*

#### **N80-N89**

##### **INDEPENDENT STUDY**

*Prerequisites: BUS 228, 238, and 244 or consent of instructor.*

#### **490-491**

##### **INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

*Prerequisites: BUS 228, 238, and 244 or consent of instructor.*

## **MATHEMATICAL FINANCE**

The Mathematical Finance major offers integrated coursework that explores the relationship between theoretical and applied mathematics and the ever-evolving world of finance. The major equips students with a solid foundation in mathematics and finance that can be applied successfully to complex financial models and mathematical modeling of financial markets. The major consists of courses in mathematics, finance, and computer programming.

## Major Requirements

All students majoring in Mathematical Finance must complete a total of 12 courses.

### Foundation Courses (required):

|          |                                      |
|----------|--------------------------------------|
| BUS 238  | Fundamentals of Financial Management |
| CPTR 125 | Intro to Computer Science            |
| MATH 128 | Calculus I                           |

### Advanced Courses (required):

|          |                                         |
|----------|-----------------------------------------|
| BUS 311  | Investment Theory                       |
| BUS 337  | Security Valuation and Portfolio Theory |
| BUS 438  | Financial Modeling                      |
| CPTR 246 | Advanced Programming                    |
| CPTR 247 | Data Structures                         |
| MATH 129 | Calculus II                             |
| MATH 130 | Matrix Algebra                          |
| MATH 325 | Theory of Interest with Applications    |

### Mathematical Finance Electives (select one):

|          |                                            |
|----------|--------------------------------------------|
| ACCT 110 | Financial Accounting                       |
| ACCT 130 | Managerial Accounting                      |
| ACCT 225 | Budgeting and Financial Statement Analysis |
| BUS 339  | Corporate Finance and Investment Banking   |
| BUS 360  | International Finance                      |
| ECON 110 | Principles of Macroeconomics               |
| ECON 111 | Principles of Microeconomics               |
| ECON 220 | Money and Banking                          |
| ECON 310 | Intermediate Macroeconomics                |
| ECON 311 | Intermediate Microeconomics                |
| ECON 337 | Public Finance                             |
| ECON 340 | Econometrics                               |
| MATH 214 | Multivariate Statistics                    |
| MATH 231 | Differential Equations                     |
| MATH 332 | Mathematical Statistics I                  |
| MATH 333 | Mathematical Statistics II                 |
| MATH 338 | Operations Research                        |
| PHYS 336 | Mathematical Methods of Physics            |

### Capstone Requirement

Majors are required to pass BUS 438.

## **CHEMISTRY AND BIOCHEMISTRY (CHEM, BIOCH)**

Associate Professors: Bendorf, Mahler, Saunders (Chair)

Assistant Professor: Ramsey

- Majors: Chemistry, Biochemistry
- Courses required for Chemistry major: 13 (B.A.), 16 (B.S.) (not including zero or 1 credit courses)
- Courses required for the Biochemistry major: 16 (B.S.) (not including zero or 1 credit courses)
- Math prerequisite (not counted in major): MATH 127
- Capstone requirement for Chemistry: Departmental Proficiency Examination and CHEM 449 or the Professional Semester
- Capstone requirement for Biochemistry: Departmental Proficiency Examination and BIO 447, BIOCH 449, or the Professional Semester
- Minor: Chemistry

The Department of Chemistry and Biochemistry offers both B.A. and B.S. degree programs and is approved by the American Chemical Society (ACS) to certify those students whose programs meet or exceed requirements established by the ACS.

Students may not double major in Biochemistry and Chemistry or double major in Biochemistry and Biology.

### **ACS Certification**

The American Chemical Society (ACS) certifies degrees in Chemistry and Biochemistry. To earn certification, the ACS requires that students complete the following courses: CHEM 222/223, 224/225, 232, 330, 333, BIOCH 444, PHYS 225, 226, and MATH 128, one additional course chosen from MATH 123, 129, or 130, and three courses chosen from CHEM 331, 440, 442, 443, 446, or BIOCH 445.

## **CHEMISTRY (CHEM)**

### **Major Requirements**

#### **The B.A. Degree**

To earn the B.A. degree in Chemistry, a student must complete CHEM 122/123, 124/125, 222/223, 224/225, 232, 330, 331, 333; PHYS 225, 226; MATH 128, 129; and the Capstone experience.

#### **The B.S. Degree**

To earn the B.S. degree in Chemistry, a student must complete the thirteen course major described above as well as three 4-credit courses in chemistry or biochemistry chosen from CHEM 439, 440, 442, 443, or 446; BIOCH 444 or 445. One course from the following list may



be substituted for one of the chemistry or biochemistry courses listed above: CHEM 400, 470, 480, or 490; PHYS 331 or above; BIO 222 or above; MATH 123, 130, 214, 216, 231, 238, 332; or CPTR 125.

### **Certification in Secondary Education**

A Chemistry major interested in becoming certified in secondary education in Chemistry and/or General Science/Chemistry should, as early as possible, consult the current Department of Education Teacher Education Handbook and make their plans known to their advisor and the Chair of the Education Department so the required courses can be scheduled for the Professional Semester. Successful completion of the Professional Semester (EDUC 461, 462, 465, and SPLED 447) also satisfies the Chemistry Capstone experience. Please check with the Education Department for the most current PA State requirements.

### **Capstone Requirements**

All chemistry majors must demonstrate to the Department their command of chemistry by: 1) passing a Chemistry Department proficiency exam and 2) completing CHEM 449 or the Professional Semester (EDUC 461, 462, 465, and SPLED 447).

### **Minor Requirements**

A minor in chemistry requires completion of CHEM 122/123, 124/125, 222/223, 224/225, and two CHEM courses numbered 232 or higher. One BIOCH course may be substituted for any CHEM course 232 or higher in the minor.

## **000**

### **LABORATORY TEACHING METHODS**

Provides students with practical experience in laboratory teaching. Students in this course are paired with a faculty mentor and help supervise labs, deliver pre-lab lectures, and assist in ordering chemicals and prepping laboratory experiments. Students complete a project that integrates the chemical education literature, classroom instruction materials, laboratory safety and chemical procurement, storage, and disposal. *Intended for chemistry and biochemistry majors pursuing certification in education. Prerequisite: CHEM 124 and 125. Non-credit course.*

## **100**

### **CHEMISTRY IN CONTEXT**

Intended for the non-major, this course explores real-world societal issues that have important chemical components. Topics may include air and water quality, the ozone layer, global warming, energy, acid rain, nuclear power, pharmaceuticals, and nutrition. The chemistry knowledge associated with the issues is built on a need-to-know basis. *Three hours of lecture and one two-hour laboratory per week. Not open for credit to students who have received credit for CHEM 122.*

## **101**

### **INVESTIGATING CHEMISTRY**

Intended for the non-major, this course introduces the fundamental concepts of chemistry through the perspective of forensic science. Case studies based upon actual crimes and an

investigative laboratory experience will be used to illustrate the importance of chemistry to forensics as well as everyday life. *Three hours of lecture and one two-hour laboratory per week. Not open for credit to students who have received credit for CHEM 122.*

## **102**

### **CHEMISTRY OF FOOD AND COOKING**

Intended for the non-major, this course introduces students to chemical principles, with an emphasis on organic chemistry. Topics covered include: the chemical composition of food, the chemistry of nutrition, and the physical and chemical changes that occur during cooking. *Three hours of lecture and one two-hour laboratory per week. Not open for credit to students who have received credit for CHEM 122.*

## **122**

### **GENERAL CHEMISTRY I**

A quantitative introduction to the concepts and models of chemistry. Topics include stoichiometry, atomic and molecular structure, nomenclature, bonding, thermochemistry, gases, solutions, and chemical reactions. This course is designed for students who plan to major in one of the sciences. *Three hours of lecture and one hour of discussion per week. Prerequisite: MATH placement of level 3 or 4, credit for MATH 100, or consent of department. Corequisite: CHEM 123. Three credits.*

## **123**

### **GENERAL CHEMISTRY LABORATORY I**

An introduction to methods of separation, purification, and identification of compounds according to their physical properties. *Three hours per week. Prerequisite: MATH placement of level 3 or 4, credit for MATH 100, or consent of department. Corequisite: CHEM 122. One credit.*

## **124**

### **GENERAL CHEMISTRY II**

A continuation of CHEM 122, with emphasis placed on the foundations of analytical, inorganic, and physical chemistry. Topics include kinetics, equilibria, acid-base theory, electrochemistry, thermodynamics, nuclear chemistry, coordination chemistry, and descriptive inorganic chemistry of selected elements. *Three hours of lecture and one hour of discussion. Prerequisite: A grade of C- or better in CHEM 122 and 123, or consent of instructor. Corequisite: CHEM 125. Three credits.*

## **125**

### **GENERAL CHEMISTRY LABORATORY II**

A continuation of CHEM 123, addressing aspects of quantitative and qualitative inorganic analysis. *Three hours per week. Prerequisite: A grade of C- or better in CHEM 122 and 123, or consent of instructor. Corequisite: CHEM 124. One credit.*

**130****THE CHEMISTRY OF ENERGY**

Intended for the non-major, this course uses fundamental concepts of chemistry and thermodynamics to examine sources and uses of energy and their historical, economic, and social impacts. Topics covered include fossil fuels, nuclear fission and fusion, alternative and renewable energy sources, pollution, and climate change. *Three hours of lecture and one two-hour laboratory per week. Not open for credit to students who have received credit for CHEM 122. Prerequisite: MATH placement of level 2, 3, 4, or credit for MATH 100.*

**219****ORGANIC AND BIOCHEMISTRY**

An introduction to the compounds of carbon in both organic and biochemistry. Topics include the nomenclature, structure, bonding, and spectroscopy of biologically relevant organic functional groups. Additional discussion includes biochemistry of monomeric lipids, amino acids, carbohydrates, and nucleic acids along with their corresponding biopolymers. The lab introduces students to organic synthesis, infrared and mass spectroscopies with an emphasis on environmental applications. *Three hours of lecture, one hour of recitation, and one three-hour laboratory per week. Not open for credit to students who have received credit for CHEM 222. This course does not count toward the chemistry major. Prerequisite: CHEM 124 and 125.*

**222****ORGANIC CHEMISTRY I**

An introduction to the chemistry of the compounds of carbon. Topics include structure and bonding, nomenclature, conformational analysis, stereochemistry, substitution and elimination chemistry, alkenes, alkynes, IR spectroscopy, and organic synthesis. *Four hours of lecture per week. Prerequisites: CHEM 124 and 125. Corequisite: CHEM 223. Three credits.*

**223****ORGANIC CHEMISTRY LABORATORY I**

Introduces techniques for the synthesis, purification, and characterization of organic compounds. *Four hours per week. Prerequisite: CHEM 124 and 125. Corequisite: CHEM 222. One credit.*

**224****ORGANIC CHEMISTRY II**

A continuation of CHEM 222 with emphasis on the synthesis and characterization of organic compounds. Topics include the chemistry of alcohols, dienes, arenes, and carbonyl compounds, NMR spectroscopy, mass spectrometry, and radical chemistry. *Four hours of lecture per week. Prerequisite: A grade of C- or better in CHEM 222 and 223. Corequisite: CHEM 225. Three credits.*

**225****ORGANIC CHEMISTRY LABORATORY II**

A continuation of CHEM 223, with an emphasis on multi-step syntheses, mechanistic studies and characterization of organic compounds using a variety of spectroscopic techniques. *Four hours per week. Prerequisite: A grade of C- or better in CHEM 222 and 223. Corequisite: CHEM 224. One credit.*

**232****QUANTITATIVE CHEMICAL ANALYSIS**

A quantitative introduction to chemical analysis by chemical and instrumental methods. Topics include statistics, data analysis, titration, gravimetric analysis, and equilibrium, as well as an introduction to the fundamentals of spectroscopy, separation science, and electrochemistry. Emphasis is placed on oral methods for reporting of experimental results. *Three hours of lecture and two three-hour laboratory periods per week. Prerequisite: CHEM 124 and 125 or consent of instructor.*

**330****PHYSICAL CHEMISTRY I**

A study of energy and time in chemistry and its reactions, including thermodynamics, phases and physical transformations of pure substances and mixtures, equilibrium, electrochemistry, rates of reactions, and kinetics. The laboratory includes thermodynamics and kinetics experiments, as well as student projects. *Three hours of lecture and one four-hour laboratory per week. Prerequisites: CHEM 124, CHEM 125, and MATH 128; Corequisite: PHYS 225 or consent of instructor.*

**331****PHYSICAL CHEMISTRY II**

A continuation of CHEM 330 with emphasis on motion and structure in chemistry and its reactions. Topics include molecular motion and reaction dynamics, gas laws, statistical thermodynamics, quantum mechanics, atomic and molecular structure, and their relation to spectroscopy. The laboratory includes thermodynamics, kinetics, and quantum mechanics experiments. *Three hours of lecture and one four-hour laboratory per week. Prerequisite: CHEM 330 and MATH 129; Corequisite: PHYS 226.*

**333****ADVANCED INORGANIC CHEMISTRY**

A study of modern theories of atomic and molecular structure and their relationship to the chemistry of selected elements and their compounds. *Three hours of lecture and one four-hour laboratory per week. Prerequisites: CHEM 224 and 225 or consent of instructor. CHEM 330 preferred, but not required.*

**400****CHEMISTRY PRACTICUM**

A work-oriented experience for junior or senior chemistry or biochemistry majors jointly sponsored by the Department and a public or private agency. The practicum is designed to integrate classroom theory with laboratory practice. In addition to attendance at a weekly class meeting, students spend 10-12 hours per week at the sponsoring agency.

**439****INTRODUCTION TO QUANTUM MECHANICS**

Introduction to the basic concepts and principles of quantum theory. Uses the Schrödinger wave equation approach to present solutions to the free particle, the simple harmonic oscillator, the

hydrogen atom, and other central force problems. Topics also include operator formalism, eigenstates, eigenvalues, the uncertainty principles, stationary states, representation of wave functions by eigenstate expansions, and the Heisenberg matrix approach. *Cross-listed as PHYS 439. Four hours of lecture. Prerequisites: MATH 231 and either PHYS 226 or CHEM 331.*

#### **440**

##### **ADVANCED ORGANIC CHEMISTRY**

Theory and application of modern synthetic organic chemistry. Topics may include oxidation-reduction processes, carbon-carbon bond forming reactions, functional group transformations, and multi-step syntheses of natural products (antibiotics, antitumor agents, and antiviral agents). *Three hours of lecture and one four-hour laboratory per week. Prerequisite: CHEM 224 and 225.*

#### **442**

##### **SPECTROSCOPY AND MOLECULAR STRUCTURE**

Theory and application of the identification of organic compounds. With special emphasis on the utilization of spectroscopic techniques ( $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR, IR, UV-VIS, and MS). *Three hours of lecture and one four-hour laboratory per week. Prerequisite: CHEM 224 and 225.*

#### **443**

##### **INSTRUMENTAL ANALYSIS**

An introduction to the operation and function of modern chemical instrumentation. Topics include instrumentation for molecular, vibrational, and atomic spectroscopy; pressure- and electrically-driven separation science; as well as potentiometric and voltammetric electrochemical techniques. *Three hours of lecture and one four-hour laboratory per week. Prerequisites: CHEM 232 and 330 or consent of instructor.*

#### **446**

##### **ORGANOMETALLIC CHEMISTRY**

An introduction to the chemistry of compounds containing metal-carbon bonds. Topics include structure and bonding, reactions and mechanisms, spectroscopy, and applications to organic synthesis. Emphasizes the use of organometallic compounds as catalysts in industrial processes. *Three hours of lecture and one four-hour laboratory per week. Prerequisite: CHEM 224 and 225.*

#### **448**

##### **CHEMISTRY COLLOQUIUM**

A seminar in which faculty, students, and invited professional chemists discuss their research activities. Colloquium presentations by students are part of the course requirements for Chemistry Research Methods, Internship, and Honors. *Attendance at Chemistry Colloquium is voluntary. Non-credit course.*

#### **449**

##### **INFORMATION, COMMUNICATION, AND ETHICS**

Focuses on the communication of chemistry and biochemistry to technical and general audiences. Students explore techniques for searching the chemical and biochemical literature,

evaluate search results, and present the results from literature or experimental studies in multiple formats. Ethical issues related to the conduct and reporting of research are addressed. Majors should enroll in this capstone course in either the junior or senior year. *Cross-listed as BIOCH 449. Prior or concurrent research or internship experience is highly recommended, but not required. Four hours of lecture per week. Prerequisite: CHEM 224 and 225. Corequisite: CHEM 330.*

#### **470-479**

##### **INTERNSHIP**

The student ordinarily works under supervision in an industrial laboratory and submits a written report on the project.

#### **N80-N89**

##### **INDEPENDENT STUDY**

The student ordinarily works on a laboratory research project and writes a thesis on the work.

#### **490-491**

##### **INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

The student ordinarily works on a laboratory research project with emphasis on showing initiative and making a scholarly contribution. A thesis is written.

## **BIOCHEMISTRY (BIOCH)**

### **Major Requirements**

To earn the B.S. degree in Biochemistry, a student must complete CHEM 122/123, 124/125, 222/223, 224/225, 330; BIO 110, 111, 222; BIOCH 444, 445; MATH 128; one course chosen from MATH 123, MATH 129, or CPTR 125; PHYS 225; the Department's Biochemistry Proficiency Examination; either BIOCH 449, BIO 447, or the Professional Semester; and two additional courses from the list below.

|          |                                      |
|----------|--------------------------------------|
| BIO 230  | Nutrition: Metabolism & Health       |
| BIO 323  | Human Physiology                     |
| BIO 324  | Medical Microbiology                 |
| BIO 338  | Human Anatomy                        |
| BIO 346  | Virology                             |
| BIO 347  | Immunology                           |
| BIO 435  | Cell Biology                         |
| BIO 437  | Molecular Biology                    |
| CHEM 232 | Quantitative Chemical Analysis       |
| CHEM 331 | Physical Chemistry II                |
| CHEM 333 | Inorganic Chemistry                  |
| CHEM 440 | Advanced Organic Chemistry           |
| CHEM 442 | Spectroscopy and Molecular Structure |

### **Certification in Secondary Education**

A Biochemistry major interested in becoming certified in secondary education in Chemistry and/or General Science/Chemistry should, as early as possible, consult the current Department of Education Teacher Education Handbook and make their plans known to their advisor and the Chair of the Education Department so the required courses can be scheduled for the Professional Semester. Successful completion of the Professional Semester (EDUC 461, 462, 465, and SPLED 447) also satisfies the Biochemistry Capstone experience. Please check with the Education Department for the most current PA State requirements.

### **Capstone Requirements**

All Biochemistry majors must demonstrate to the Department their command of biochemistry by: 1) passing a Biochemistry Proficiency Exam and 2) completing either BIOCH 449, BIO 447, or the Professional Semester (EDUC 461, 462, 465, and SPLED 447).

### **444**

#### **BIOCHEMISTRY I**

An introduction to the structures and properties of amino acids, lipids, carbohydrates, and their biopolymers. The kinetics and mechanisms of enzyme catalyzed reactions will be discussed, with emphasis on bioenergetics and the metabolism of carbohydrates and lipids. *Four hours of lecture and one four-hour laboratory per week. Prerequisite: CHEM 224 and 225 or consent of instructor.*

### **445**

#### **BIOCHEMISTRY II**

A continuation of BIOCH 444 with emphasis on metabolic pathways such the catabolism and synthesis of carbohydrates, lipids, and amino acids, as well as the associated electron transport pathways. Regulation and integration of metabolism are addressed. *Four hours of lecture and one four-hour laboratory per week. Prerequisite: BIOCH 444.*

### **449**

#### **INFORMATION, COMMUNICATION, AND ETHICS**

Focuses on the communication of chemistry and biochemistry to technical and general audiences. Students explore techniques for searching the chemical and biochemical literature, evaluate search results, and present the results from literature or experimental studies in multiple formats. Ethical issues related to the conduct and reporting of research are addressed. Majors should enroll in this capstone course in either the junior or senior year. *Cross-listed as CHEM 449. Prior or concurrent research or internship experience is highly recommended, but not required. Four hours of lecture per week. Prerequisite: CHEM 224 and 225. Corequisite: CHEM 330.*

### **470-479**

#### **INTERNSHIP**

The student ordinarily works under supervision in an industrial laboratory and submits a written report on the project.

**N80-N89****INDEPENDENT STUDY**

The student ordinarily works on a laboratory research project and writes a thesis on the work.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

The student ordinarily works on a laboratory research project with emphasis on showing initiative and making a scholarly contribution. A thesis is written.



## CLASSICAL STUDIES

Professor: S. Johnson (Coordinator)

Assistant Professor: Young (Coordinator)

The interdisciplinary minor in Classical Studies allows students to pursue an in-depth study of the history, art, literature, and thought of the ancient Greek and Roman world.

### **The minor requires 3 core courses:**

|          |                          |
|----------|--------------------------|
| ENGL 225 | Classical Literature     |
| HIST 210 | Ancient Greece and Rome  |
| PHIL 201 | Ancient Greek Philosophy |

### **Plus 2 electives chosen from the following:**

|                           |                                 |
|---------------------------|---------------------------------|
| ARHI 222                  | Introduction to Art History I   |
| GRK 221 <u>or</u> GRK 222 | Readings in New Testament Greek |
| LAT 221 <u>or</u> LAT 222 | Latin Readings and Culture      |
| REL 221                   | The Hellenistic-Roman World     |
| THEA 332                  | Theater History I               |

# CENTER FOR ENHANCED ACADEMIC EXPERIENCE (CEAE)

Associate Professor: Cagle

Instructors: A. Kurtz, Patterson

Enhanced Academic Experiences (EAEs) are designed to promote intellectual, professional, and personal development for students to prepare for life after Lycoming. While each student is required to complete at least one EAE, students are encouraged to pursue and complete multiple EAEs, which prepare, launch, and sustain graduates into careers of significance and lives of meaning. A full listing of EAEs is found in the GENERAL EDUCATION REQUIREMENTS section of the catalog. Students and academic advisors with questions about EAEs can contact the Center for Enhanced Academic Experiences (CEAE) in the Krapf Gateway Center.

In addition to supporting the wide array of EAEs across the curriculum, the CEAE offers the following courses to fulfill the General Education EAE requirement:

- The completion of CEAE 200, 201, and 220 satisfies the EAE requirement.
- CEAE 202, 300, 301, and 302 all individually satisfy the EAE requirement.

## 200

### BACKPACK TO BRIEFCASE

Although a liberal arts education stresses a wide array of skill development, including written communication, oral communication, information literacy, and critical thinking, students often find it challenging to identify and articulate how their skills can be applied in a professional environment. This course helps students successfully transition into practica, internships, service learning programs, and the workplace by providing guidance in professional skill development. This course examines the practical application of presentation of self within professional settings, utilizing prominent behavioral theories such as trait and factor theory and social learning theory. *Prerequisite: sophomore status or higher. 2 credits.*

## 201

### BRIEFCASE TO SUCCESSFUL CAREER

The transition from student to professional involves more than earning a degree and obtaining a job. In order to be successful in a chosen profession, students must learn how to acclimate to and navigate the environment in which they are working. This course focuses on practical applications of academic concepts such as code-switching, while providing students the opportunity to participate in experiences associated with academic and social mobility. *Prerequisite: sophomore status or higher. 2 credits.*

## 202

### TRAVEL PROGRAM FIELD EXPERIENCE

This travel field experience course is offered in conjunction with paired full-semester, four-credit travel program course offerings and is open only to students who apply and are accepted to the paired travel program. *Prerequisite: successful travel course application through the CEAE and completion of the paired four-credit semester-based course. May term only. One credit.*

**205****TRAVEL PREPARATION SEMINAR**

This seminar provides essential preparation for students participating in faculty-led travel courses or field programs. Through guided discussions and practical workshops, students explore key topics such as cultural awareness, health and safety, group dynamics, responsible travel practices, and expectations specific to their program. The seminar also supports students in building the skills needed to engage thoughtfully and confidently in field-based experiences.

*Corequisite: relevant travel course. Pass/fail.*

**220****CIVIC ENGAGEMENT**

Integrates academic coursework with embedded service learning and provides opportunities to examine community needs, the importance of civic engagement and the impact of social inequality on individuals, organizations, and institutions. Students are required to complete a minimum of 60 hours of service at a pre-approved site, engaging in direct or indirect service with a population in need, and in doing so, contributing to the betterment of the local community.

**300****LIBERAL ARTS PRACTICUM**

Liberal Arts Practicum is designed for students to gain practical experience related to their field of study through an internship placement with a sponsoring organization. In addition to the 10-12 hours per week spent interning with the sponsoring organizations, students attend a weekly seminar in which readings, discussion, and assignments are focused on the role of a liberal arts education in the 21st century economy and the development of transferable professional skills for a wide array of career paths. Students apply for internship placement with the CEAE during the advising period. *Prerequisite: successful completion of the CEAE practicum application.*

**301****PRE-APPROVED NON-CREDIT SUMMER INTERNSHIP**

Students who wish to fulfill an enhanced academic experience through a non-credit internship option must apply to the CEAE for pre-approval of their proposed placement. The pre-approved non-credit summer internship should include a minimum of approximately 200 hours of work, a clear set of internship responsibilities and expected outcomes, an evaluation by the site supervisor, and journal assignments and exit interview with a member of the CEAE's career advising team.

*Prerequisite: non-credit internship application approval by the CEAE. Pass/fail. Fulfills EAE requirement. Summer only. Non-credit course.*

**302****LYCOMING-ESTABLISHED NON-CREDIT SUMMER INTERNSHIP**

Students who are accepted to the Lycoming-Established internship programs within the Clean Water Institute, Paradigm Program, or the Williamsport Internship Summer Experience must enroll in this course as part of their internship requirements. Students interested in pursuing one of these established programs can seek application information from the CEAE. *Prerequisite: successful application to the internship program. Pass/fail. Fulfills EAE requirement. Summer only. Non-credit course.*

# COMMUNICATION AND MEDIA STUDIES (CMS)

Assistant Professors: B. Brigandi, Capo (Chair)

Instructors: D. Brigandi, Guistina

- Major: Communication and Media Studies
- Courses required for major: 12
- Capstone requirement: CMS 400 or 440
- Minor: Communication and Media Studies

The major in Communication and Media Studies with a liberal arts base is the perfect choice for students interested in corporate communication, advertising, public relations, management and financial communication, marketing communication, and media relations.

The program in Communication and Media Studies explores the way media interacts with society and prepares students for careers as publicists, social media managers, advertising specialists, creative directors, entertainment and sports professionals, news analysts, event managers, and for new roles on emerging platforms in digital communication. A strong grounding in theory merges with an emphasis on real-world, hands-on experiences to develop successful graduates who are nimble thinkers ready to take on complex issues faced by organizations, brands, and individuals in today's dynamic media landscape.

## Major Requirements

All students majoring in Communication and Media Studies must complete a total of 12 courses, distributed as follows:

### Core Communication and Media Studies Courses

|         |                         |
|---------|-------------------------|
| CMS 200 | Media and Communication |
| CMS 324 | Public Relations        |
| CMS 332 | Advertising             |
| CMS 440 | Capstone Project        |

### Communication and Media Studies Specialization Courses (select five)

|         |                                           |
|---------|-------------------------------------------|
| CMS 211 | Public Speaking                           |
| CMS 221 | Event Management                          |
| CMS 222 | Entertainment Industry Promotion          |
| CMS 327 | Sports and the Media                      |
| CMS 330 | Topics in Communication and Media Studies |
| CMS 340 | Trends                                    |
| CMS 349 | Political Communication                   |
| CMS 400 | Communication and Media Studies Practicum |

CMS 330 may be repeated for this requirement when topics are different.

**Digital Media Course (select one)**

|         |                                                 |
|---------|-------------------------------------------------|
| ART 240 | Digital Photography I                           |
| ART 243 | Introduction to Digital Art                     |
| FVA 100 | Seeing in Motion: The Language of Moving Images |
| FVA 200 | Digital Film and Video I                        |

**Business-Related Courses (select two from different prefixes)**

|          |                                           |
|----------|-------------------------------------------|
| ACCT 110 | Financial Accounting                      |
| ACCT 130 | Accounting for Managerial Decision Making |
| BUS 244  | Management and Organizational Behavior    |
| BUS 314  | Business Writing                          |
| ECON 110 | Principles of Macroeconomics              |
| ECON 111 | Principles of Microeconomics              |

**Capstone Requirement (select one)**

|         |                                           |
|---------|-------------------------------------------|
| CMS 400 | Communication and Media Studies Practicum |
| CMS 440 | Capstone Project                          |

**Minor Requirements**

The Communication and Media Studies minor will enhance the content of any major area of study with an additional set of communication skills. Five courses are required: CMS 200, CMS 324, two additional CMS courses, and one additional course that counts toward the CMS major.

**200****MEDIA AND COMMUNICATION**

How do breaking news, viral social media posts, and online culture shape the way we see the world? This course examines how truth, consequences, and power intersect in media and communication. Students explore the ways rhetoric, persuasion, media influence, and misinformation affect trust, credibility, and public discourse.

**211****PUBLIC SPEAKING**

Training in methods of informative and persuasive speaking, including formal speeches, impromptu situations, presentations, and persuasion in critical situations. Emphasizes the basic elements of effective public discourse: audience analysis, organization, content, and presentation skills. *Prerequisite: ENGL 106.*

**221****EVENT MANAGEMENT**

An introduction to event planning and management, which includes event design, marketing, operations, logistics, risk, staffing, and finance. Includes planning and management of corporate, non-profit, sports, arts, cultural and mega-events, and conventions.

**222**

**ENTERTAINMENT INDUSTRY PROMOTION**

Traces the music, television, film, and theater industries through the digital age (1980 to the present), the dominance of social media platforms, and the ways the entertainment industry affects society.

**324**

**PUBLIC RELATIONS**

Considers the practice, theory, philosophy, ethics, and history of public relations. Appraises the capacity of public relations 1) to inform; 2) to persuade; 3) to cause, maintain, or change events and perceptions; and 4) to foster strategic business choices and decisions through rhetorical means. *Prerequisite: ENGL 106 and CMS 200, or consent of instructor.*

**327**

**SPORTS AND THE MEDIA**

Examines the field of media relations as it pertains to the world of sports. Students gain an understanding of how and why sports entities communicate with the media and the public. Using leagues, teams, and players as case studies, the course analyzes written, broadcast, and digital platforms as well as public events such as press conferences, interviews, and the ability to deal with breaking news. Students work to construct strategic communication plans for sports entities that are factual, ethical, and useful.

**330**

**TOPICS IN COMMUNICATION AND MEDIA STUDIES**

Study of selected topics in communication and media studies. Recent topics include publicity, social media management, sports media, technical communication, and media bias. *Prerequisite: Sophomore standing or above or CMS 200 or consent of instructor. May be repeated for credit when topics are different.*

**332**

**ADVERTISING**

Tracing the development of advertising into the broader field of integrated marketing communication, the course examines the concepts of branding, targeting, segmentation, positioning, and creative strategy. Students view and critique prominent advertising campaigns, create their own print and video advertisements, explore the psychology behind advertising, and assess the impact of advertising on society.

**340**

**TRENDS**

Students analyze current events and issues to predict the trends shaping the year ahead in business, social media, entertainment, science, sports, politics, and other industries. *Prerequisite: two CMS courses or consent of instructor. May be repeated for credit with instructor consent.*

**349****POLITICAL COMMUNICATION**

Speechwriting, debate, political advertising, and the role of the press secretary are investigated in relation to political campaigns, elected officials, and political parties in the United States.

*Prerequisite: One CMS or PSCI course or permission of instructor. Fulfills Domestic Cultural Diversity Requirement.*

**400****COMMUNICATION AND MEDIA STUDIES PRACTICUM**

Provides students with practical work experience with local companies and organizations.

Students work 10-12 hours per week for their sponsor organizations, in addition to attending a weekly seminar on topics relevant to their work assignments. *Prerequisites: CMS 200, 324, and 332. Consent of instructor required.*

**440****CAPSTONE PROJECT**

A semester-long project, the focus of which must be proposed by the student and approved by the Communication and Media Studies faculty. Possible approaches include original research projects, papers featuring substantial analysis of topics related to the course of study, the creation of a communication campaign for a real-world entity, the creation of a fully realized podcast or other digital communication project, or another project demonstrating competence in the major.

*Prerequisites: CMS 200, 324, and 332.*

**470****INTERNSHIP**

Interns usually work off-campus in fields related to their areas of study. Students must apply for departmental and College approval prior to registration to be eligible for this course.

*Prerequisite: junior or senior standing. 1-8 credits.*

**N80-N89****INDEPENDENT STUDY**

Represents an opportunity to pursue specific interests and topics not usually covered in regular courses. Through a program of readings and tutorials, the student has the opportunity to pursue these interests and topics in greater depth than is usually possible in a regular course.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

**COMPUTER SCIENCE (See Mathematical Sciences)**

**CREATIVE WRITING (See English)**



# CRIMINAL JUSTICE AND CRIMINOLOGY (CJCR)

Professor: Richmond

Associate Professor: Yingling (Chair)

Assistant Professors: Faulkner, Houser

Lecturer: Robbins

Instructor: Snook

- Majors: Criminal Justice, Criminology
- Courses required for Criminal Justice: 11
- Courses required for Criminology: 12
- Math prerequisite (not counted in major): a statistics course of at least 3 credits
- Capstone requirement for Criminal Justice: CJCR 441
- Capstone requirement for Criminology: CJCR 445
- Minor: Criminal Justice

The Criminal Justice and Criminology majors are interdisciplinary social science majors. Course work leading to the baccalaureate degree in criminal justice emphasizes critical and in-depth interdisciplinary analysis of the causes of crime, of formal and informal efforts at preventing and controlling crime, and of treatment of the field of criminal justice as an applied social science where students are taught to integrate theory construction with practical application. The Criminal Justice major offers opportunities for internship and practicum experiences in the field and prepares students for careers in law enforcement, court services, institutional and community-based corrections, treatment and counseling services, and for further education at the graduate level. The Criminal Justice major also prepares students for policy analysis and leadership roles in their communities. Course work leading to the baccalaureate degree in Criminology is designed to critically examine the etiology of crime and to provide strong theoretical and methodological foundations for graduate-level work.

Students may not double major in criminal justice and criminology.

## CRIMINAL JUSTICE

### Major Requirements

The major in Criminal Justice consists of 11 courses, distributed as follows:

#### A. Required Core Courses (six courses):

|          |                                      |
|----------|--------------------------------------|
| CJCR 100 | Introduction to Criminal Justice     |
| CJCR 247 | Victimology                          |
| CJCR 300 | Criminology                          |
| CJCR 343 | Research Methods in Criminal Justice |
| CJCR 441 | Crime Prevention and Policy          |
| PSY 110  | Introduction to Psychology           |

**B. Foundations of Justice (select one course):**

- CJCR 210 Introduction to Administration of Justice
- CJCR 211 Ethics in Criminal Justice
- PHIL 318 Philosophical Issues in Criminal Justice

**C. Criminal Justice System Domains (select one course):**

- CJCR 201 Policing and Society
- CJCR 203 Correctional Policy
- CJCR 204 Youth, Deviance, and Social Control
- CJCR 240 Community-Based Corrections
- CJCR 243 Courts and Sentencing Policy

**D. Crime, Delinquency, and Law Electives (select two courses):**

- CJCR 212 Reentry and Desistance
- CJCR 213 Justice in Popular Culture and Media
- CJCR 222 Drugs and Society
- CJCR 223 Human Trafficking
- CJCR 321 Gangs, Communities, and Violence
- CJCR 324 Domestic Violence
- CJCR 325 Juvenile Delinquency
- CJCR 345 Special Topics in Criminal Justice

**E. Diverse Communities (select one course):**

- CJCR 334 Race, Class, Gender, and Crime
- CJCR 346 Comparative Criminal Justice
- SOC 240 Sociology of Race and Ethnicity
- SOC 241 Sociology of Gender and Sexuality
- SOC 334 American Immigration

**Capstone Requirement**

All majors must successfully complete CJCR 441 Crime Prevention and Policy

**Minor Requirements**

A minor in criminal justice consists of five courses: CJCR 100, CJCR 300, and three additional CJCR courses.

**CRIMINOLOGY****Major Requirements**

The major in Criminology consists of 12 courses, distributed as follows:

**A. Required Core Courses (eight courses):**

- CJCR 100 Introduction to Criminal Justice
- CJCR 247 Victimology

|          |                                         |
|----------|-----------------------------------------|
| CJCR 300 | Criminology                             |
| CJCR 334 | Race, Class, Gender, and Crime          |
| CJCR 343 | Research Methods in Criminal Justice    |
| CJCR 445 | Applied Research Methods in Criminology |
| MATH 214 | Multivariable Statistics                |
| SOC 110  | Contemporary Social Issues              |

**B. Critical Analysis Electives (select two courses):**

|          |                                          |
|----------|------------------------------------------|
| CJCR 325 | Juvenile Delinquency                     |
| CJCR 346 | Comparative Criminal Justice             |
| CJCR 360 | Analysis of Crime Patterns               |
| PHIL 318 | Philosophical Issues in Criminal Justice |

**C. Topical Course Electives (select two courses, at least one must have a CJCR prefix):**

|          |                                      |
|----------|--------------------------------------|
| CJCR 201 | Policing and Society                 |
| CJCR 203 | Correctional Policy                  |
| CJCR 204 | Youth, Deviance, and Social Control  |
| CJCR 212 | Reentry and Desistance               |
| CJCR 213 | Justice in Popular Media and Culture |
| CJCR 222 | Drugs and Society                    |
| CJCR 223 | Human Trafficking                    |
| CJCR 240 | Community-Based Corrections          |
| CJCR 243 | Courts and Sentencing Policy         |
| CJCR 321 | Gangs, Communities, and Violence     |
| CJCR 324 | Domestic Violence                    |
| CJCR 345 | Special Topics                       |
| ECON 224 | Urban Economics                      |
| HIST 230 | African American History             |
| PSCI 220 | Public Policy in America             |
| PSCI 242 | Human Rights                         |
| PSCI 362 | Terrorism                            |
| PSY 310  | Forensic Psychology                  |
| SOC 325  | Program Evaluation and Grant Writing |
| SOC 334  | American Immigration                 |

**Capstone Requirement**

All majors must successfully complete CJCR 445 Applied Research Methods in Criminology

**100**

**INTRODUCTION TO CRIMINAL JUSTICE**

Explores the role of law enforcement, courts, and corrections in the administration of justice; the development of police, courts, and corrections; the scope and nature of crime in America; introduction to the studies, literature, and research in criminal justice; basic criminological theories; and careers in criminal justice.

**120****APPLIED CJCR EXPERIENCES**

Offers hands-on experiences and practical application of the tools/techniques needed to be a successful criminal justice or criminology professional. A workshop format, which includes applied immersion alongside local professionals, in conjunction with faculty lecture, guarantees students exposure to skills common across most criminal justice and criminology systems. *One credit.*

**201****POLICING AND SOCIETY**

Who are the police and what is policing? Exploration of these questions provides a context for critical inquiry of contemporary law enforcement in the United States. Attention is given to law enforcement purposes and strategies, the work force and work environment, and why sworn officers do what they do. Emphasis is also placed on being policed and policing the police. Treatment of these issues enables exploration of basic and applied questions about the projection of state power in community relations, including those related to homeland security.

*Prerequisite: CJCR 100.*

**203****CORRECTIONAL POLICY**

Presents an overview of offenders, punishment, correctional ideologies, and societal reaction to crime. Examines the historical and philosophical development of the correctional system. The primary emphasis is on critical analysis of contemporary correctional programming for adult and juvenile offenders in the United States. Other social issues and structures directly related to corrections are explored. *Prerequisite: CJCR 100.*

**204****YOUTH, DEVIANCE, AND SOCIAL CONTROL**

Provides the student with a general understanding of juvenile deviance and state processes intended to interrupt youth deviance and juvenile delinquency, particularly in the juvenile justice system. Explores historical perspectives, deviant juvenile subculture, underlying philosophies, the formal processes and organization of juvenile justice systems, promising prevention/treatment approaches, and juvenile probation practices. Students are asked to think critically and offer solutions or strategies to a range of dilemmas confronting the juvenile justice system, including the transfer of juveniles to adult status and the movement to privatize juvenile justice services. *Prerequisite: CJCR 100.*

**210****INTRODUCTION TO ADMINISTRATION OF JUSTICE**

Provides a study of the history, characteristics and philosophy of the system of administration of criminal justice in the United States. This course identifies unique challenges to administrators of criminal justice organizations. The structures, functions, and processes in the administration of criminal justice organizations are also examined. Topics include a variety of public management theories, the role of leadership, and communication as it relates to criminal justice organizations. This course connects academics to practice, examining best practices, challenges encountered in the public sector and how capacity-building is accomplished. While the justice

structure and process are examined in a cross-cultural context, emphasis is placed on the U. S. justice system, particularly the structure and function of the police, probation/parole, courts and corrections. *Prerequisite: CJCR 100*

## **211**

### **ETHICS IN CRIMINAL JUSTICE**

Professional ethics are essential to the proper functioning of the criminal justice system. Brutality, misconduct, corruption, abuse of power, deviance, and dishonesty undermine the public's trust in the ability of the criminal justice system to address criminal behavior and protect victims. This applied ethics course evaluates professional ethical dilemmas throughout the criminal justice system with the goal of reducing justice errors. Students use the standards set by various criminal justice professions and an ethics framework to address common issues met by criminal justice practitioners. It also explores the roles of professional organizations, laws, and oversight in responding to ethics violations and setting up ethical policy and procedure.

*Prerequisite: CJCR 100*

## **212**

### **REENTRY AND DESISTANCE**

What is the experience of returning home like for individuals who have served a period of incarceration? How do they face the challenges and barriers of transitioning back into the community, such as finding a job, reconnecting with their family, and staying sober? Contrary to public perception, ninety to ninety-five percent of individuals who are sentenced to prison are released. And yet, within three years, over half are reincarcerated. In recent years, more attention has been paid to the reintegration process and how the challenges individuals experience impact their ability to be successful upon release. This course discusses the experience of reintegration from the individual, family, and community perspective.

## **213**

### **JUSTICE IN POPULAR CULTURE AND MEDIA**

The public often learns about the justice system through television, film, newspaper, and the internet. Society has long been fascinated with criminality and those who respond to crime. Given the prevalence of conflicting media and popular culture viewpoints, this course examines the social construction of crime and justice, the framers of these narratives, and the consequences of that social construction. This course explores the sources of public attitudes towards crime and justice and its effect on actual and perceived crime and policy. Topics include understanding the intersection of crime, media, and politics as related to moral panics, consumer and ideological culture, the social construction of criminals and victims, and local and national policies.

## **222**

### **DRUGS AND SOCIETY**

An examination of substance abuse and the criminalization of drugs. This course explores the origin, purpose, growth, consequences, and effectiveness of the War on Drugs on a national and international scale. It also examines current drug issues in the U.S., draws connections to past epidemics, and critically assesses U.S. drug policies within the areas of supply, demand, treatment, and harm reduction

**223**

### **HUMAN TRAFFICKING**

Designed to help students gain a better understanding of contemporary human trafficking and modern-day slavery. Students learn important terminology in this field, the different types of human trafficking that exist and an understanding of the scope of the problem, both domestically and globally. Possible topics include the physical, emotional, and psychological trauma experienced by victims of human trafficking and the methods used to recruit and control victims. The roles that entities such as government, the media, faith-based organizations, organized crime, and culture play in this complex issue are also explored. *Pre-requisite: CJCR 100. Fulfills Global Cultural Diversity Requirement.*

**240**

### **COMMUNITY-BASED CORRECTIONS**

An in-depth study of community-based correction programs, with emphasis on the role of probation and parole and their impact on the offender, the criminal justice system, and society. Particular attention is given to advancements in technologies used to monitor and track offenders within the community, prison overcrowding, re-entry programs, officer discretion and ethics, and the role of specialized treatment courts. *Prerequisite: CJCR 100.*

**243**

### **COURTS AND SENTENCING POLICY**

Examines the role of municipal, state, and federal courts in the American criminal justice system. Many important steps in the processing of criminal cases involve the courts or courtroom actors, including arrest, booking, charging, arraignment, trial, sentencing, and appeal. Considers the responsibilities and constraints of the courts and courtroom actors in each of these steps. The ideal American criminal court is a site where society's desire for punishment is tempered by its obligation to protect the rights of those accused of crime. This course examines the historical evolution of this ideal and considers the degree to which modern American courts have been able to achieve it. Additional topics may include the use of courts to affect change in other components of the criminal justice system (e.g., police, prisons) and the emerging trend of "specialized" courts (e.g., drug courts). *Prerequisite: CJCR 100.*

**247**

### **VICTIMOLOGY**

Examines victimization in the United States through an overview of the history and theory of victimology, an analysis of trends and patterns with a special emphasis on types of victims and crimes, and an exploration of the effects of criminal victimization on individuals and society. The role of the victim within the criminal justice system as well as responses to victimization will also be considered with respect to services and policies for supporting victims of crime. *Prerequisite: CJCR 100.*

**300**

### **CRIMINOLOGY**

Analysis of the sociology of law; conditions under which criminal laws develop; etiology of crime; epidemiology of crime, including explanation of statistical distribution of criminal behavior in terms of time, space, and social location. *Prerequisite: CJCR 100 or SOC 110.*

**321****GANGS, COMMUNITIES, AND VIOLENCE**

There is a complex relationship between violence and criminal behavior within the community. It is therefore important to conceptualize and examine crime and delinquency at the group-level. This course examines gang history, theory, measurement, and research and emphasizes gang formation, identity, characteristics, composition, and violence. Topics focus on contemporary juvenile street gangs and other organized criminal groups and contrast them with other less cohesive violent groups. The course also explores the preventative and deterrent strategies that communities use in response to violent behavior. This includes multidisciplinary responses in both the public and private sectors that address violence locally and internationally. *Fulfills Domestic Cultural Diversity Requirement.*

**324****DOMESTIC VIOLENCE**

Focuses on intimate partner violence which includes physical, sexual, emotional and psychological abuse within a relationship. Possible topics of discussion include the critical examination of different approaches and definitions of domestic violence to understand how they impact statistics. This course examines what intimate partner violence looks like against women and men, including LGBTQ victims, and the different ways these victims are treated within the criminal justice system. Topics include intimate partner homicide, child abuse, elder abuse, alcohol, and firearms. Possible topics of discussion may also include intimate partner violence from the perspective of criminal justice system actors, including law enforcement, prosecutors, sexual assault nurse examiners and domestic violence shelters and the roles they play in assisting victims and holding offenders accountable. *Prerequisite: CJCR 100. Fulfills Domestic Cultural Diversity Requirement.*

**325****JUVENILE DELINQUENCY**

Examines the historical development of juvenile delinquency, the causes of delinquency, how society treats young people who break the law, and rates of juvenile delinquency. Students explore criminological and sociological theories related to deviance. Particular attention is paid to the role of family, the school, and peer groups in promoting delinquency. Prevention and rehabilitation are examined and situated within each institution. Current events, including school shootings, law enforcement in schools, bullying, and substance use, are also discussed. This class centers intersectionality in the discussion of what acts are viewed as delinquent, who is considered delinquent, and what happens to juveniles accused of delinquency. *Prerequisite: CJCR 100. Fulfills Domestic Cultural Diversity Requirement.*

**334****RACE, CLASS, GENDER, AND CRIME**

Provides a theoretical and practical exploration of the link between gender, race, class, and criminal justice practices. Focuses on the link between masculinity and violent behavior, exploring factors influencing aggressive behavior among men. Also focuses on women in the criminal justice system, exploring the nature and extent of criminal offending among women, including interactions of women as offenders and workers within the criminal justice system. Finally, utilizes a critical stance while exploring aspects of race and class pertaining to

victimology, criminology, and justice processing. *Prerequisites: CJCR 100 and 300. Fulfills Domestic Cultural Diversity Requirement.*

### **343**

#### **RESEARCH METHODS IN CRIMINAL JUSTICE**

Students learn social science methods, research design and implementation, and evaluation of contemporary research in criminal justice. Topics covered include the logic of causal order, sampling theory, qualitative and quantitative design, data collection, proper analysis of data, and basic statistical selection and calculation. Emphasis is placed on understanding social science research and on communicating research in writing. *Prerequisite: CJCR 300 and a statistics course of at least 3 credits.*

### **345**

#### **SPECIAL TOPICS IN CRIMINAL JUSTICE**

A seminar for advanced students offered in response to student request and faculty interest. Sample topics include the death penalty, hate crimes, civil liability in criminal justice, justice in the media, environmental crime, etc. *May be repeated for credit with consent of chair when topics are different. Prerequisite: CJCR 100 and one other CJCR course.*

### **346**

#### **COMPARATIVE CRIMINAL JUSTICE**

National criminal justice systems are rooted in each country's particular legal system and traditions. After reviewing the major legal systems, this course examines criminal justice systems representative of each legal system. The elements of criminal justice systems (policing, prosecution, the judiciary, and corrections) are compared across several countries, but with special emphasis placed on comparisons to the United States. *Prerequisites: CJCR 100 and one other CJCR course. Fulfills Global Cultural Diversity Requirement.*

### **360**

#### **ANALYSIS OF CRIME PATTERNS**

Why are crimes and other social problems concentrated in certain locations? This course tries to answer this question by exploring environmental criminology theories of how the built environment shapes human behavior. This theoretical and analytic approach tries to explain the criminogenic features of the community that lead to crime and the fear of crime. Rather than asking why an individual is more likely to commit a crime, environmental criminology attempts to explain why a place is more likely to experience crime. Multiple research methods are used to explore the connections between criminal behavior and the physical environment. *Prerequisites: CJCR 100 and one other CJCR course*

### **441**

#### **CRIME PREVENTION AND POLICY**

Crime prevention measures may reduce crime through altering offenders' motivations to commit crime or restricting offenders' opportunities to commit crime. Evaluations of crime prevention policies and programs are reviewed to determine what works, what does not, and why. In addition to the criminal justice system's ability to prevent crime, the impact of families, schools,



communities, and broader economic and social policies on offending is critically examined.  
*Prerequisites: Senior status, CJCR 300, and CJCR 343.*

#### **445**

##### **APPLIED RESEARCH METHODS IN CRIMINOLOGY**

Provides students with the opportunity to apply the theoretical and research skills they have obtained through the criminology major by completing an independent research study. Topics are selected by individual students and prior research is examined to develop an original research question to explore. An appropriate methodology, such as surveys, qualitative interviews, experimental design, secondary data analysis, or program evaluation, is chosen. Upon completion of the data collection and analysis, a formal research paper is written and presented. *Prerequisite: Senior status, CJCR 343, and MATH 214.*

#### **448, 449**

##### **CRIMINAL JUSTICE PRACTICUM**

Students are placed with criminal justice agencies, providing opportunities to apply classroom knowledge in an organizational setting, encouraging development of professional skills, helping students identify and clarify career interests, and providing opportunities to conduct hands-on field research. *Prerequisites: Junior or senior status and successful completion of the CJCR Department's practicum application.*

#### **470**

##### **INTERNSHIP**

#### **N80-N89**

##### **INDEPENDENT STUDY**

Represents an opportunity to pursue specific interests and topics not usually covered in regular courses. Through a program of readings and tutorials, the student has the opportunity to pursue these interests and topics in greater depth than is usually possible in a regular course.

*Prerequisite: CJCR 100 and consent of chair.*

#### **N90**

##### **INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

# DATA SCIENCE

Associate Professor: M. Kurtz (Co-coordinator)

Assistant Professor: M. Smith (Co-coordinator)

- Courses Required for the Major: 16 (B.S. Degree)
- Capstone Requirement: DSCI 401
- Math prerequisite for major (not counted in major): math placement level 4 or completion of MATH 127
- Minor: Data Science

A major in Data Science includes substantial coursework in data science, computer science, and mathematics. This major will prepare students for a career as a data analyst, as well as for graduate study in data science. A minor in data analytics is suitable for students of all majors who wish to better understand, manage, analyze and use data in their careers.

## Major Requirements

A major in Data Science requires the following courses in computer science, data science, and mathematics: DSCI 101, 201, 401; CPTR 125, 246, 247, 339; MATH 128, 129, 130, 214, 234, 238, 434, and 443; and one course chosen from ECON 340 or PHYS 330.

## Capstone Requirement

All data science majors are required to complete DSCI 401, in which they will complete an applied research project that will apply the tools in data science, mathematics and computer science they have learned.

## Minor Requirements

A minor in Data Science consists of DSCI 101 and 201; CPTR 124 (preferred) or 125; MATH 123 or 214; MATH 130; and one course chosen from CPTR 339, ECON 340, or PHYS 330.

## 101

### INTRODUCTION TO DATA SCIENCE

Suitable for students of any major, this course is an interactive introduction to the world of data science and the skills needed to harness the power of data and modeling to understand the complex world all around us. Students explore data topics such as exploration, cleaning, manipulation, visualization, effective communication, simple modeling, and ethical issues in data science. Through practical applications, students participate in the lifecycle of a data science project, gain experience with common data science software, and explore career pathways in data science. *Prerequisites: math placement level 2 or higher, MATH 100, or consent of instructor.*

## **201**

### **DATA, MODELING, AND ALGORITHMS**

Through practical applications to a wide range of domains drawing from social science, physical science, and the humanities, students explore common practices and nuances of data management and common machine learning algorithms. Students learn to identify a well-defined research question, collect and curate data, select the optimal techniques to analyze the data, implement the chosen algorithms or models, assess model performance, communicate relevant, interesting, and actionable insights, and think critically about ethical issues involved in data science. *Prerequisites: DSCI 101 and either CPTR 124 or CPTR 125.*

## **401**

### **DATA SCIENCE CAPSTONE**

This is a project-based capstone course leading students through the process of project conceptualization, data collection/cleaning/exploration, analysis, and communication. Students present their work both in writing and orally/visually to peers at the end of the semester. *Prerequisites: DSCI 201; either MATH 123 or MATH 214; MATH 130; CPTR 339; and either ECON 340, or PHYS 330.*

## ECONOMICS (ECON)

Professor: Moorhouse

Associate Professors: M. Kurtz (Chair), Sprunger

- Majors: Economics, Managerial Economics, Quantitative Economics
- Courses required for Economics: 11
- Courses required for Quantitative Economics and Managerial Economics: 12
- Capstone requirement: ECON 449
- Minors: Economics, Quantitative Economics

The Department of Economics offers three majors. The Economics major is designed to provide a broad understanding of economic, social, and business problems. In addition to preparing students for a career in business or government, this major provides an excellent background for graduate or professional studies. The Managerial Economics major develops students' capacity to analyze the economic environment in which an organization operates and to apply economic reasoning to an organization's internal decision making. These courses have more of a managerial emphasis than traditional economics courses. The Quantitative Economics major focuses study on the more quantitative and analytical courses in the department. In addition to a broad coverage of economic theory and applications, these courses especially prepare students for statistical analysis and research of economics issues. This is also an excellent major for students interested in graduate school.

The Department of Economics is a member of the Institute for Management Studies. For more information, see the Institute for Management Studies listing.

### Major Requirements

Students must complete the seven-course core and the specialized major requirements.

#### Required core courses (seven courses):

ECON 110 Principles of Macroeconomics  
ECON 111 Principles of Microeconomics  
ECON 241 Introduction to Economic Research  
ECON 310 Intermediate Macroeconomics  
ECON 311 Intermediate Microeconomics  
ECON 449 Research Capstone  
MATH 123 (or a higher-level statistics class)

#### Each major has its own additional requirements as follows:

**Economics Major:** Four additional courses in economics (excluding ECON 349).

**Managerial Economics Major:** ECON 220; ACCT 110; BUS 238; one additional economics course numbered 200 or above (excluding ECON 349); and either an

accounting course numbered 130 higher, an additional business course (excluding BUS 439), or an additional economics course numbered 200 or above (excluding ECON 349).

**Quantitative Economics Major:** ECON 340; MATH 109 or 128; and either (A) three additional economics courses numbered 200 or above (excluding ECON 349) or (B) two additional economics courses numbered 200 or above (excluding ECON 349) and one additional MATH course (numbered 129 or higher) or CPTR 125.

Students interested in graduate school should consult with members of the economics department faculty for recommendations on additional coursework.

Students interested in teacher certification should refer to the Department of Education listing.

### **Capstone Requirement**

All majors must successfully complete ECON 449.

### **Minor Requirements**

The **Economics** minor requires the completion of ECON 110, 111, and three other economics courses numbered 200 or above (excluding ECON 349); or any four economics courses numbered 200 or above (excluding ECON 349).

The **Quantitative Economics** minor requires five courses including ECON 110 and 111; one course from ECON 241 or ECON 340; a MATH course numbered 129 or higher or CPTR 125; and one additional elective course in ECON numbered 200 or higher (excluding ECON 349).

## **110**

### **PRINCIPLES OF MACROECONOMICS**

Focuses on the behavior of economic aggregates such as prices, employment, and production. What influences the level of national income and employment? What is inflation and why do we have it? What are the drivers and consequences of recessions and expansions? What is the role of government in a modern capitalistic system? How are the American financial and banking systems organized? What are the elements of government monetary and fiscal policy?

*Prerequisite: Math placement of level 2, 3, 4, or credit for MATH 100.*

## **111**

### **PRINCIPLES OF MICROECONOMICS**

Focuses on individual economic actors such as individuals, households, and firms. Discusses how to use the model of supply and demand to understand market interactions. Discusses how firms decide what and how much to produce and how goods and services are priced in different types of markets. Also considers issues related to market failure such as externalities, public goods, and asymmetric information. *Prerequisite: Math placement of level 2, 3, 4, or credit for MATH 100.*

**220****MONEY AND BANKING**

Covers history and functions of money, monetary policy, the financial organization of society, banking and other financial intermediary systems, capital markets, and international financial relations. *Prerequisite: ECON 110.*

**224****URBAN ECONOMICS**

The application of economic theory to the study of significant social, political, and economic problems associated with urbanization, including poverty, employment, education, crime, health, housing, land use and the environment, transportation, and public finance. Analysis of solutions offered. *Prerequisite: ECON 110, 111, or consent of instructor.*

**225****ENVIRONMENTAL AND RESOURCE ECONOMICS**

A study of the relationship between environmental quality, natural resources, and economic growth. Examines economic factors associated with environmental problems such as air and water pollution, the common property problem, and natural resource use, allocation, and degradation. Particular attention paid to market failure, taxation and regulation, property rights, public goods, benefit-cost analysis, energy resources, and non-market resource valuation. *Prerequisite: Math placement of level 2, 3, 4, or credit for MATH 100.*

**241****INTRODUCTION TO ECONOMIC RESEARCH**

Teaches quantitative analysis tools and methods commonly used in economics, social science, and business. Concepts and methods taught in this course are split between data manipulation/presentation and basic methodology. Because this course emphasizes the technical skills needed to enter a data-driven workforce, students also engage in career exploration and preparation assignments throughout the semester. *Prerequisites: ECON 110 or 111; MATH 123, 214, or 332; IMS 100 or demonstrated proficiency in MS Excel; or consent of instructor.*

**310****INTERMEDIATE MACROECONOMICS**

An advanced analysis of contemporary theory and practice with regard to business fluctuation, national income accounting, the determination of income and employment levels, and the use of monetary and fiscal policy. *Prerequisite: ECON 110. Alternate years.*

**311****INTERMEDIATE MICROECONOMICS**

An advanced analysis of contemporary theory regarding consumer demand, production costs and theory, profit maximization, market structures, and the determinants of returns to the factors of production. *Prerequisite: ECON 111. Alternate years.*

**327**

**PUBLIC CHOICE**

Focuses on the application of economics to the political processes of voting and bureaucratic behavior. A major theme is the study of problems that can occur within the democratic process because the incentives given to public servants do not always match society's best interests. Policies and institutions that can improve such problems are explored. US elections and campaigns provide many of the applications for the class. *Prerequisite: ECON 110, 111, or consent of instructor.*

**332**

**GOVERNMENT AND THE ECONOMY**

An analytical survey of government efforts to maintain competition through antitrust legislation to supervise acceptable cases of private monopoly, through public utility regulation via means of regulatory commissions, and to encourage or restrain various types of private economic activities. *Prerequisites: ECON 110, 111, or consent of instructor.*

**335**

**LABOR ECONOMICS**

Introduces students to the economic analysis of the market for human resources. Students learn economic theory of labor demand and labor supply as well as marginal productivity theory, bargaining theories of wages, and human capital theory. Also examines unions, immigration, and discrimination. *Prerequisites: ECON 110, 111, or consent of instructor. Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

**337**

**PUBLIC ECONOMICS**

An analysis of the fiscal economics of the public sector, including the development, concepts, and theories of public expenditures, taxation, and debt at all levels of American government. Also includes the use of fiscal policy as an economic control device. *Prerequisites: ECON 110 and 111 or consent of instructor.*

**340**

**ECONOMETRICS**

Econometric models provide one of the most useful and necessary tools for decision-making. By using a variety of modern statistical methods, econometrics helps us estimate economic relationships, test different economic behaviors, and forecast different economic variables. Prepares students for basic empirical work in economics and focuses on linear regression using both cross-sectional and time-series data. *Prerequisites: MATH 123, 214, or 332 or consent of the instructor. Alternate years.*

**343**

**INTERNATIONAL TRADE**

A study of the principles, theories, development, and policies concerning international economic relations, with particular reference to the United States. Subjects covered include US commercial policy and its development, international trade theory, tariffs and other protectionist devices, international monetary system and its problems, balance of payments issues. *Prerequisites:*

*ECON 110 and 111. Fulfills Global Cultural Diversity Requirement.*

**345**

**READING IN APPLIED MICROECONOMICS**

Explores many fields in applied microeconomics such as Health Economics, Education Economics, and Environmental Economics, through readings and discussions on these topics. The readings will primarily come from peer-reviewed journal articles and will help students become comfortable reading and understanding economic research as well as to see a broad range of applications of microeconomic concepts and empirical techniques. *Prerequisite: ECON 111.*

**347**

**GAME THEORY**

An introduction to the field of game theory. The focus is on understanding how people, firms, and governments behave in strategic interactions. Applications include pricing, bargaining, negotiating, and auctions. *Prerequisite: ECON 111 or consent of instructor.*

**349**

**MANAGEMENT PRACTICUM**

An apprentice-level work experience for junior or senior economics or related majors jointly sponsored by the department and a public or private agency (or a subdivision of the college itself) designed to better integrate classroom theory and workplace practice. In addition to attendance at a weekly seminar, students spend 10-12 hours per week at the sponsoring agency. At least one-half of the effort expended will consist of academic work related to agency activities. *This course does not count toward the economics major.*

**440**

**HISTORY OF ECONOMIC THOUGHT**

A discussion of the origins, development, and significance of the economic ideas embodied in the works of Smith, Marx, Schumpeter, Keynes, and others. *Prerequisite: ECON 110 and 111 or consent of instructor.*

**449**

**RESEARCH CAPSTONE**

Students complete a research project under the guidance of a faculty member in the department. Topics are chosen by the student and can range from theoretical contributions, qualitative analysis, to empirical investigations. *Prerequisite: ECON 110, 111, and 241.*

**470-479**

**INTERNSHIP**

Typically off-campus in business, banking, or government, supervised by assigned employee of sponsoring organization.



**N80-N89****INDEPENDENT STUDY**

Superior students may select independent study in various courses, particularly in preparation for graduate school.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

## **EDUCATION (ECED, EDUC, SPLED)**

Professor: Rogers

Associate Professor: Hickoff-Cresko (Chair)

Assistant Professor: Kohler

Instructors: Fischer, Killian, Stopper

Lycoming College believes that the liberal arts and sciences provide the best preparation for future teachers. Thus, all education students complete a liberal arts major in addition to the appropriate Lycoming College Teacher Certification requirements, which include the Education Program Core Courses, the specific certification area courses, and the Professional Semester.

Students have a variety of options when combining a major and a certification area. This makes the requirements for each student pursuing certification unique depending on their certification area, major, and math or language prerequisites and requirements. It is highly recommended that any student considering certification meet with a faculty member in the Department of Education as early as possible.

All students certifying to teach must complete at least 6 credits of English and at least 6 credits in Mathematics as defined by the Pennsylvania Department of Education. Please see the Teacher Education Handbook for more information.

Students pursuing teacher certification must complete an academic major in addition to the following: 1) Education Program Core Courses, 2) Specific Certification Area Courses for at least one area, and 3) Professional Semester.

### **Education Program Core Courses**

Students seeking any teaching certification must complete EDUC 215, 225, and 348; SPLED 230 and 334; PSY 110 and 120; ENGL 106 and an ENGL course numbered 115 or higher; and at least 6 credits in MATH courses numbered 101 or higher.

### **Specific Certification Area Courses**

#### **Early Childhood Certification**

Students seeking early childhood certification must complete the Education Program Core; PSY 110 and 120; EDUC 000, 215, 225, 348, 461, 462, 465; ECED 340, 341, 342, 344; ECED/SPLED 243; and SPLED 230, 334, and 447, as well as the necessary subject major area courses; and the Professional Semester.

#### **Secondary Teacher Certification**

Students seeking secondary teacher certification must complete the Education Program Core; PSY 110 and 120; EDUC 215, 225, 339, 348, 461, 462, 465; EDUC/SPLED 338; SPLED 230, 334, and 447; as well as the necessary subject major area courses; and the Professional Semester.

(See exception below for students seeking PK-12 certifications.) Students may earn one or more of the following certifications:

Biology  
Chemistry  
English  
Mathematics  
Physics  
Social Studies (Anthropology, Economics, History, Philosophy, Political Science, Psychology, Sociology)

Students seeking certification in any of the secondary science areas (biology, chemistry, physics) must also complete the required safety and maintenance workshop in their content area (ASTR/PHYS 000, BIO 000, CHEM 000). These workshops address safety issues (laboratory instruction, regulations for use of chemicals, materials, and specialized equipment) and general lab behavior. Students are also taught how to set up and maintain a laboratory (in their particular science field) in a middle/secondary school.

### **PK-12 Teacher Certification**

Students seeking PK-12 certification must complete the Education Program Core; PSY 110 and 120; EDUC 215, 225, 339, 348, 461, 462, 465; EDUC/SPLED 338; SPLED 230, 334, and 447, and the necessary subject major area courses (including the methods course appropriate to their discipline and offered by that department); and the Professional Semester. Students may earn PK-12 certification in one or more of the following areas:

Art  
Business/Computer and Information Technology  
French  
German  
Music  
Spanish

### **Special Education PK–12 Teacher Certification**

Students seeking Special Education PK–12 certification must complete the Education Program Core; PSY 110, and 120; ECED 340; ECED/SPLED 243; EDUC 215, 225, 348, 461, 462, 465; EDUC/SPLED 338; SPLED 230, 320, 331, 334, and 447, as well as the necessary major area courses; and the Professional Semester. Special Education PK-12 Certification can be pursued alone or in combination with any of the above certifications.

### **English as a Second Language Program Specialist Certification**

Students seeking English as a Second Language Program Specialist Certification must complete the Education Program Core; ECED 243 or EDUC 338; MLS 338; SPLED 331; a portfolio

demonstrating the acquisition of the required competencies; the necessary major area courses; one of the above specific certification area programs; and the Professional Semester.

## **The Professional Semester**

Students are considered full time when enrolled in the Professional Semester. Those students needing an additional course must comply with the standards stated in the College catalog.

The Department of Education admits applicants to the Professional Semester when they have (a) completed the participation requirements, (b) completed EDUC 348 Pre-student Teaching Practicum, (c) obtained a recommendation from the student's major department, (d) passed a screening and interview conducted by the Education Department, (e) taken or met qualifications to be exempt from the basic skills assessment, first part of the state mandated teaching tests, and (f) achieved an overall grade point average of 3.00 or better. Major departments have different criteria for their recommendations; therefore, the student should consult with the chair of the major department about those requirements. The Pennsylvania state requirements override any contractual agreement the teacher candidate has with the college via the catalog under which they were admitted.

The following courses comprise the Professional Semester:

EDUC 461 Methods of Classroom Management (1 credit)

EDUC 462 Principles and Applications of PK–12 Assessment (1 credit)

SPLED 447 Professional Development for the Inclusive Setting (6 credits)

EDUC 465 Professional Semester of Student Teaching (8 credits)

## **EARLY CHILDHOOD EDUCATION (ECED)**

### **243**

#### **EARLY LITERACY DEVELOPMENT**

Provides pre-service teachers an understanding of the foundations of early literacy development and instructional strategies and assessment techniques that support the acquisition of literacy.

Through observations and participation in practicum, seminars, workshops, and lectures, students construct an understanding of how children, including children with disabilities, English Learners, and children with diverse perspectives, construct knowledge. *Cross-listed as SPLED 243. Minimum 20 hours of observation and participation in field experience in local schools in preschools, kindergartens, or first grades required. Fulfills Domestic Cultural Diversity Requirement.*

### **340**

#### **CHILDREN AND MATH**

Provides students with knowledge, skills, and understanding to design and implement effective, developmentally appropriate mathematics instruction for grades PK–4. Emphasis is on children's (including children with disabilities, English Learners, and children with diverse perspectives) mathematical learning and pre-numerical stages through the acquisition of advanced numerical processes and operations and connections to geometric and algebraic reasoning. *Minimum 20*

*hours of field experience in local schools in grades PK–4 required. Prerequisite or corequisite: EDUC 215 or consent of instructor.*

### **341**

#### **CHILDREN AND SOCIAL STUDIES**

Focuses on the content, processes, pedagogy, and materials for teaching social studies in the PK–4 classroom. Examines cognitive development as applied to the selection of content, methods, and materials and strategies for organizing the learning environment for the young learner, including children with disabilities, English Learners, and children with diverse perspectives.

*Minimum 20 hours of field experience in local schools in grades PK–4 required. Prerequisite or corequisite: EDUC 215 or consent of instructor. Fulfills Domestic Cultural Diversity Requirement.*

### **342**

#### **CHILDREN AND SCIENCE**

Study of content, processes, and constructivist teaching methods and materials for teaching science in the early childhood classroom. Knowledge of cognitive development as applied to the selection of content in method is examined. Through observations and participation in practicum, seminars, workshops, and lectures, students construct an understanding of how children, including children with disabilities, English Learners, and children with diverse perspectives, construct knowledge about the world in which they live and how teachers use their

understanding of children to create environments that support learning. *Minimum 20 hours of field experience in local schools in grades PK–4 required. Prerequisite or corequisite: EDUC 215 or consent of instructor.*

### **344**

#### **LITERACY LEARNING IN EARLY ELEMENTARY GRADES**

Provides pre-service teachers with an understanding of developmentally appropriate instructional strategies and assessment techniques to help all students, including children with disabilities, English Learners, and children with diverse perspectives, in kindergarten through grade four become literate, using reading, writing, listening, and speaking in strategic and authentic ways. *Minimum 20 hours of observation and participation in elementary classrooms (grade 1–4) field experience in local schools are required. Prerequisite: PSY 211 or consent of instructor.*

## **EDUCATION (EDUC)**

### **000**

#### **SEMINAR IN ART, MUSIC, PHYSICAL EDUCATION, AND COMPUTER ACTIVITIES**

Each elementary student teacher attends a series of seminars conducted prior to student teaching. These seminars, conducted by certified public school personnel, emphasize activities and knowledge that are helpful in the self-contained elementary classroom. *Non-credit course.*

**215**

**ORIENTATION TO THE TEACHING PROFESSION**

An exploration of historical, economic, political, and theoretical foundations in the field of education. Consideration is given to contemporary school environments, curriculum, and professional requirements that affect American educational systems. *Minimum 10 hours of field experience in local schools required. 2 credits.*

**225**

**TEACHING THE ENGLISH LEARNER**

Provides an overview of research-based methods, strategies, and resources for teaching English to speakers of other languages. Includes the process of acquiring multiple languages and literacy skills, including the general stages of language development. Considers language, culture, instruction, assessment, and professional responsibilities in relation to teaching the English learner. *Minimum 10 hours of field experience in local schools required. 2 credits.*

**233**

**TEACHING CULTURALLY AND LINGUISTICALLY DIVERSE LEARNERS IN THE DOMINICAN REPUBLIC**

An experiential and service learning course that allows students to explore and apply theories and pedagogy for teaching economically, linguistically, and culturally diverse learners while traveling throughout the Dominican Republic. Students learn about specific cultural and educational practices within the Dominican Republic and how those play a role in the lives of students within the country. Activities include curriculum preparation, collaboration with Dominican teachers, teaching children in several Dominican schools, and creating and providing professional development workshops for Dominican teachers. Students will travel to Santo Domingo, Peralta, and Las Terrenas. *Prerequisites: ECED 243 or SPLED 230 or consent of instructor. Fulfills Global Cultural Diversity Requirement.*

**238**

**CROSS-CULTURAL EDUCATION: SPECIAL TOPICS.**

Exploration of the history, educational system, and culture of a selected country. Topical focus of the course will vary according to the instructor. May be repeated for credit when topics are different. *Fulfills Global Cultural Diversity Requirement.*

**338**

**LITERACY IN THE CONTENT AREAS**

Designed to teach the strategies necessary for implementing literacy skills in the middle/secondary content areas. Focuses on reading, writing, speaking, listening, and media interpretation in content areas. Addresses developmental stages for adolescents, including children with disabilities, English Learners, and children with diverse perspectives, and critical reading strategies, in addition to strategies for using young adult literature in the content areas. *Cross-listed as SPLED 338. Minimum 20 hours of field experience in middle and secondary classrooms in local schools required. Prerequisite or corequisite: EDUC 215 or consent of instructor. Fulfills Domestic Cultural Diversity Requirement.*

**339**

#### **METHODS OF TEACHING MIDDLE AND SECONDARY STUDENTS**

Specifically designed to develop the knowledge, skills, and understandings needed to teach in middle and secondary classrooms by providing teacher candidates with a comprehensive overview of effective approaches to planning, implementing, managing, and assessing successful and effective learning experiences for students. Students plan, design, and conduct instruction, paying particular attention to the development of the curriculum, state and national standards, and instructional strategies that promote student success. Students complete a field experience component that explores curriculum and practices under the guidance of a cooperating mentor teacher in the academic major. *Minimum 20 hours of field experience in local schools required. Prerequisite: EDUC 215 or consent of instructor.*

**348**

#### **PRE-STUDENT TEACHING PRACTICUM**

This required non-credit course for teacher candidates allows students to spend 30 hours of field experience in assigned student teaching/cooperating teacher classrooms. Teacher candidates have the opportunity to bridge course content with what they are learning in the schools. Activities are designed to facilitate reflection on personal growth and classroom management strategies. Students discover best practices of effective classroom management, how to increase student motivation, and time management techniques for such things as managing paperwork, planning, and classroom organization. Students meet with college supervisors weekly during the semester for one hour each session. A letter grade is assigned. *Special fees apply. Non-credit course.*

**461**

#### **METHODS OF CLASSROOM MANAGEMENT**

This course offered as part of the Professional Semester allows students to continue learning classroom management strategies and practice what they have learned in their methods courses out in the schools. Activities are designed to facilitate reflection on personal growth and classroom management strategies. Students discover best practices of effective classroom management, how to increase student motivation, and time management techniques for such things as managing paperwork, planning, and classroom organization. *Prerequisite: Full admission to Professional Semester. 1 credit.*

**462**

#### **PRINCIPLES AND APPLICATIONS OF PK-12 ASSESSMENT**

This course offered as part of the Professional Semester allows students to continue practicing best methods for assessment and student evaluation. Students construct formative and summative assessments, learn ways to use assessment tools and the use of formal and informal assessment data, as well as gain an understanding of legally acceptable modifications for assessment for students with disabilities and for English learners. *1 credit.*

**464**

#### **MODIFIED STUDENT TEACHING EXPERIENCE**

Professional experience under the supervision of a cooperating teacher appropriate to certification areas and grade level ranges. Limited to students who possess at least one certification and require a modified student teaching placement under Pennsylvania Department

of Education guidelines to add another. *Includes a minimum of 4 weeks in a professional setting. Maximum of 2 credits.*

**465**

#### PROFESSIONAL SEMESTER OF STUDENT TEACHING

Professional experience under the supervision of a selected cooperating teacher appropriate to certification areas and grade level ranges. Student teachers are required to follow the calendar of the school district to which they are assigned. Includes 14 weeks of student teaching, weekly seminars, and completion of weekly assignments (i.e., lesson plans, journals, and lesson analysis). *Prerequisite: Full admission to Professional Semester. Maximum of 8 credits.*

### SPECIAL EDUCATION (SPLED)

**230**

#### INTRODUCTION TO SPECIAL EDUCATION

Covers historical, philosophical, and legal perspectives related to exceptional students. All major areas of exceptionality are covered (e.g., learning disabilities, health impairment, gifted, etc.). A study of typical and atypical development of children provides the basis for an in-depth study of the characteristics and classifications of exceptional students. Emphasis is placed upon the ethical and professional behaviors of teachers of students with disabilities in special education and/or regular classroom settings including multicultural and multilingual situations. Designed for all students seeking teacher certification. *Minimum of 20 hours of field experiences in local schools' inclusive placements required. Fulfills Domestic Cultural Diversity Requirement.*

**243**

#### EARLY LITERACY DEVELOPMENT

Provides pre-service teachers an understanding of the foundations of early literacy development and instructional strategies and assessment techniques that support the acquisition of literacy. Through observations and participation in practicum, seminars, workshops, and lectures, students construct an understanding of how children, including children with disabilities, English Learners, and children with diverse perspectives, construct knowledge. *Cross-listed as ECED 243. Minimum 20 hours of field experience in local schools, observation and participation in preschools, kindergartens, or first grades required. Fulfills Domestic Cultural Diversity Requirement.*

**320**

#### INSTRUCTIONAL METHODS FOR EXCEPTIONAL LEARNERS

Provides students seeking dual certification foundational knowledge of evidence-based instructional strategies and methods for students with disabilities, as well as opportunities for applied practice. Direct instruction in reading, writing, mathematics, and other content areas, strategy instruction, and maintenance and generalization. Addresses curriculum development, selection, and modification. *Minimum 20 hours of field experience in local schools in an inclusive placement required. Prerequisite: SPLED 230 or consent of instructor. Alternate years.*



**331****ASSESSMENT AND TRANSITION FOR EXCEPTIONAL LEARNERS**

Provides information and experiences in assessment strategies and areas of transition, including legal and ethical issues. Students develop an understanding of how to select, create, administer, and score a variety of assessments, provide appropriate accommodations and modifications, align learning objectives and assessment, and use data to make decisions. This includes all areas of transition, with an emphasis on procedures for effective transition to post-secondary settings. Designed for students seeking single certification in Special Education (PK-12), dual certification in Special Education (PK-12) with Early Childhood Education (PK – 4) or Secondary (7 – 12) Education. *Minimum 20 hours of field experience in local schools in an inclusive placement required. Prerequisite: SPLED 230 or consent of instructor. Alternate years.*

**334****ADVANCED TOPICS IN LEARNING AND BEHAVIOR IN GENERAL AND SPECIAL EDUCATION SETTINGS**

Examines direct application of learning and behavioral principles within general and special education settings. We cover identification/diagnosis, underlying neuropsychological processes, and cognitive and behavioral characteristics of children with a variety of learning needs, with a special emphasis on Learning Disabilities. In addition, students gain information and experience with evidence-based tools and procedures to effectively build, modify, and maintain behaviors in the classroom. The focus of this course is on all students, including those with high and low support needs. The course may cover trauma-invested practices and relationship-building in the classroom. Credit may be earned for both SPLED 334 and PSY 211. *Minimum 20 hours of field experience in local schools required. Prerequisites: PSY 110 and SPLED 230.*

**338****LITERACY IN THE CONTENT AREAS**

Designed to teach the strategies necessary for implementing literacy skills in the middle/secondary content areas. Focuses on reading, writing, speaking, listening, and media interpretation in content areas. Addresses developmental stages for adolescents, including children with disabilities, English Learners, and children with diverse perspectives, and critical reading strategies, in addition to strategies for using young adult literature in the content areas. *Cross-listed as EDUC 338. Minimum 20 hours of field experience in local schools in middle and secondary classrooms required. Prerequisite or corequisite: EDUC 215 or consent of instructor. Fulfills Domestic Cultural Diversity Requirement.*

**447****PROFESSIONAL DEVELOPMENT FOR THE INCLUSIVE SETTING**

Seminar on the issues, problems, and challenges encountered by teachers in the American schools, especially those related to the student teaching experience. Particular attention is given to assessing teacher candidate impact on learners, as well as family and community collaboration, and professionalism. *Prerequisite: Full admission to Professional Semester.*

## ENERGY STUDIES

Associate Professor: Mahler (Coordinator)

The minor in Energy Studies is an interdisciplinary curriculum designed for students majoring in any academic field to enhance their understanding of energy science in connection to the policy, economic, and social issues surrounding energy production and utilization at the local, national, and global level.

**The minor requires 5 of the following courses, one of which must be BUS 200, CHEM 202, or HIST 200:**

|          |                                                                      |
|----------|----------------------------------------------------------------------|
| ANTH 232 | Environmental Anthropology                                           |
| BUS 200  | The Business of Energy                                               |
| CHEM 130 | The Chemistry of Energy <u>or</u> PHYS 225 Fundamentals of Physics I |
| ECON 225 | Environmental and Resource Economics                                 |
| ENV 200  | Introduction to Geology                                              |
| ENV 215  | Introduction to Geographic Information Systems                       |
| ENV 220  | Environmental Biology <u>or</u> BIO 224 Ecology                      |
| HIST 200 | Energy, Security, and Global Competition                             |

## **ENGLISH (ENGL, CRWR)**

Professors: Feinstein, Leiter, Preston (Chair)

Assistant Professors: Braham, Nguyen, Wagner

Lecturers: Hebert-Leiter, Kauffman, Warner

- Majors: Literature, Creative Writing
- Courses required for either major: 10
- Capstone requirement for Literature: ENGL 421 and Portfolio
- Capstone requirement for Creative Writing: CRWR 411 or 412
- Minors: Literature, Writing

## **LITERATURE (ENGL)**

Designed for students who choose English as a liberal arts major that prepares them for a wide range of career options; for students who choose English as their subject area for early childhood certification or who wish to earn secondary certification in English; for students who wish to improve their verbal and analytic ability in preparation for a specific career, such as technical writing, business, or law; and for students who intend to pursue graduate study in British or American literature.

The department offers two majors in English: Literature and Creative Writing. Students may not double major in English Literature and Creative Writing.

### **Major Requirements**

A minimum of ten courses is required for the Literature major. Required courses are ENGL 217, 220, 221, 421; two courses selected from ENGL 222, 223, and 229; one from ENGL 335 and 336; two additional 300-level ENGL courses; one elective beyond composition in either English or Creative Writing; and a departmentally-approved Portfolio.

Students interested in English 7-12 teacher certification should refer to the Education Department handbook for specific requirements.

### **Capstone Requirement**

Senior majors must successfully complete ENGL 421. They must also hand in a portfolio of writing during the first week of their final semester. The portfolio must include four major papers from English courses and a self-assessment essay.

### **Minor Requirements**

The English Department offers minors in Literature and Writing (see Creative Writing). The minor in Literature requires five ENGL courses (excluding ENGL 106), at least three of which must be numbered 300 or above.

**106****COMPOSITION**

Extensive practice in analytical writing. Special emphasis on developing the composing skills needed to articulate and defend a position in various situations requiring the use of written English.

**115****INTRODUCTION TO LITERATURE: SELECTED TOPICS**

An introduction to the study of literature organized topically according to each instructor.

*Prerequisite or corequisite: ENGL 106 or consent of the instructor, May be repeated for credit when topics are different.*

**217****INTRODUCTION TO LITERARY CRITICISM**

An introduction to the history and theories of literary criticism. Readings in both critical and literary texts will be paired with the practical application of theoretical perspectives in analytical writings. *Prerequisite: ENGL 106 or consent of instructor. Not open to juniors or seniors except for newly declared majors or with consent of instructor. Fulfills either Domestic or Global Cultural Diversity Requirement.*

**219****HISTORY OF THE ENGLISH LANGUAGE**

A study of the origins and development of the English language. It examines how linguistic change and historical forces have shaped our common tongue, using representative readings in Old, Middle, Early Modern, and Present Day English. *Prerequisite: ENGL 106 or consent of instructor. Fulfills either Domestic or Global Cultural Diversity Requirement. Alternate years.*

**220****BRITISH LITERATURE I**

A survey of literary forms, dominant ideas, and major authors from the Anglo-Saxon period through the 18th century. Includes a brief study of language development to Chaucer and emphasizes writers such as Chaucer, Shakespeare, Donne, Milton, Swift, Pope, and Johnson.

*Prerequisite: ENGL 106 or consent of instructor. Fulfills Global Cultural Diversity Requirement.*

**221****BRITISH LITERATURE II**

A survey of British literature from the nineteenth and twentieth centuries, with an emphasis on major literary movements and their historical contexts. Covers Romanticism, Victorian literature, and Modernism. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Global Cultural Diversity Requirement.*

**222**

**AMERICAN LITERATURE I**

Survey of American literature from the beginning to 1865, with emphasis on divergent perspectives of the popular national narrative. Authors studied include: Anne Bradstreet, Benjamin Franklin, Jane Johnston Schoolcraft, Frederick Douglass, Harriet Jacobs, Edgar Allan Poe, Nathaniel Hawthorne, Herman Melville, Walt Whitman, and Emily Dickinson.

*Prerequisite: ENGL 106 or consent of instructor. Fulfills Domestic Cultural Diversity Requirement.*

**223**

**AMERICAN LITERATURE II**

Survey of American literature from 1865 to 1945, emphasizing such authors as Mark Twain, Charles Chesnutt, Kate Chopin, Robert Frost, Langston Hughes, William Faulkner, and Zora Neale Hurston. *Prerequisite: ENGL 106, or consent of instructor. Fulfills Domestic Diversity Requirement.*

**225**

**CLASSICAL LITERATURE**

A study, in translation, of Greek and Roman works that have influenced Western writers. Literary forms studied include epic, drama, satire, and love poetry. Writers include Homer, Aeschylus, Sophocles, Euripides, Virgil, Juvenal, Horace, Lucretius, and Ovid. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Global Cultural Diversity Requirement.*

**229**

**AFRICAN AMERICAN LITERATURE**

A survey of major works and authors of African American literary history from slavery to the present, focusing on such authors as Douglass, J. W. Johnson, Hurston, Hughes, Wright, Ellison, and Morrison. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Domestic Cultural Diversity Requirement.*

**242**

**STRANGE NEW WORLDS: A SURVEY OF SPECULATIVE FICTION**

An exploration of science fiction and fantasy from the nineteenth century to the present. The course traces the history of these interrelated genres as they evolve over time in literature, television, and film, with a focus on what has made these genres so culturally impactful and so beloved. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Domestic Cultural Diversity Requirement.*

**311**

**MEDIEVAL LITERATURE**

Readings focusing on Old and Middle English poetry and prose from Bede's *Ecclesiastical History* to Chaucer's *Canterbury Tales*. Study of lyric, narrative, and romance with emphasis on the cultural context from which these forms emerge. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**312****BETWEEN ANGELS AND DEMONS: THE LITERATURE OF THE ENGLISH RENAISSANCE**

An examination of themes and literary forms of the Renaissance. Authors include Donne, Marlowe, More, Shakespeare, Sidney, Spenser, and Surrey. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**313****RESTORATION AND 18TH-CENTURY LITERATURE**

Consideration of selected themes, writers, or modes of Restoration and 18th-century literature (1660-1800) with emphasis on the social, political, and intellectual life of that era. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**314****ROMANTIC LITERATURE**

Concentrated study in the writers, texts, and themes of the Romantic period (1789-1832) with emphasis on the social, political, and intellectual life of that era. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**315****VICTORIAN LITERATURE**

A concentrated study of the literature and culture of the Victorian period (1832-1901). The course explores themes that significantly shaped the era, which may include the science and politics of evolution, empire and anticolonialism, and industrialization. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**325****ASIAN AMERICAN LITERATURE**

An examination of Asian American history, culture, and identity as mediated in cultural texts such as novels, poetry, film, and television. Topics may include diaspora, memory, migration, and forms of orientalism. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Domestic or Global Cultural Diversity Requirements. Alternate years.*

**326****DIGITAL MEDIA STUDIES**

An examination of how forms of digital media create meanings and structures of power. Objects of study may include software, computers and mobile devices, social media platforms, infrastructures, and representations of the same in cultural texts such as literature, film, and television. Students are introduced to relevant scholarship and methods drawn from literary and cultural studies, media studies, and science and technology studies. *Prerequisite: ENGL 106 or consent of instructor. Alternate years.*

**331****MODERN AND CONTEMPORARY FICTION**

Examination of the novels and short fiction of such major writers as Virginia Woolf, William Faulkner, Gabriel García Márquez, Kurt Vonnegut, and Toni Morrison with special emphasis on

the themes of gender, race, and war as well as the stylistic developments of 20<sup>th</sup>-century fiction. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Domestic Diversity Requirement.*

### **332**

#### **MODERN AND CONTEMPORARY POETRY**

Studies in the themes and visions of modern and contemporary poets, beginning with Yeats and the American Modernists, covering a variety of central movements (such as the Harlem Renaissance), and concluding with a range of multicultural authors. *Prerequisite: ENGL 106 or consent of instructor. Fulfills either Domestic or Global Cultural Diversity Requirement.*

### **335**

#### **CHAUCE**

A study of representative work in the context of Chaucer's life and times. *Prerequisite: ENGL 106 or consent of the instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

### **336**

#### **SHAKESPEARE**

A study of representative plays in the context of Shakespeare's life and times. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

### **337**

#### **ENVIRONMENTAL LITERATURE**

An examination of environmental thinking and activism through primarily American twentieth-century and contemporary environmental literature, including novels, short stories, and creative nonfiction. Topics may include environmental justice, ecofeminism, environmental racism, and Indigenous futurism. *Prerequisite: ENGL 106 or consent of instructor. Alternate years. Fulfills Domestic Cultural Diversity Requirement.*

### **339**

#### **LITERATURE AND GENDER STUDIES**

An exploration of the intersection between gender studies and literary studies. The course introduces feminist and queer theory, followed by a thematic study that foregrounds feminist and LGBTQ+ authors and engages in intersectional analysis of gender, race, ethnicity, and class. *Prerequisite: ENGL 106 or consent of instructor. Fulfills either Domestic or Global Cultural Diversity Requirement. Alternate Years.*

### **343**

#### **GLOBAL LITERATURE**

A survey of contemporary English-language literature from Africa, Asia, the Caribbean, and Oceania. The course examines how this body of literature analyzes and critiques the legacies of British colonialism and the global inequities produced in its wake. Includes an introduction to postcolonial theory. *Prerequisite: ENGL 106 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate Years.*

**421****ADVANCED TOPICS IN LITERATURE**

An upper-level literature course governed either by concept (such as a theme or movement) or author (one to three figures). Topics vary according to instructor. *Prerequisite: At least one English course numbered 218 and above or consent of the instructor. May be repeated once for credit with consent of department. Alternate years.*

**470-479****INTERNSHIP**

The department provides internships in editing, legal work, publishing, and technical writing.

**N80-N89****INDEPENDENT STUDY**

Recent studies include the role of Pennsylvania in the fiction of John O'Hara, the changing image of women in American art and literature (1890-1945), the hard-boiled detective novel, contemporary women writers, and Milton's use of the Bible in *Paradise Lost*.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

Recent projects include "The Function of the Past in the Fiction of William Faulkner" and "Illusion, Order, and Art in the Novels of Virginia Woolf."



## CREATIVE WRITING (CRWR)

Designed for students who aspire to careers as professional writers, as editors, and as publishers; for students who plan to continue studies in an M.F.A. or M.A. program; or for students who would like to discover their creative potential while pursuing a fundamental liberal arts education.

Ten courses are required for the Creative Writing major. Required courses are CRWR 201 and 202; one 200-level ENGL course; one from ENGL 331 or 332; one from ENGL 335 or 336; one from CRWR 341 or 342; two additional ENGL courses numbered 300 or higher; one additional 300-level CRWR course; and one capstone course from CRWR 411 or 412.

Students interested in English 7-12 teacher certification should refer to the Education Department handbook for specific requirements.

### Capstone Requirement

Senior majors must successfully complete either CRWR 411 or 412.

### Minor Requirements

The English Department offers minors in Literature (see ENGL) and Writing. The minor in Writing requires four courses. The required courses are CRWR 201 or 202; ENGL 217; one 300-level ENGL course with a writing-focused (“W”) designation; and one additional ENGL course numbered 300 or higher with a writing-focused (“W”) designation or a 300-level CRWR course.

### 201

#### INTRODUCTION TO POETRY

An introduction to making poems, starting with basic techniques—including imagery, metaphor, rhyme, meter—and developing them as the semester progresses. Students write and revise their work and share it with the class. Students also look at examples by distinguished poets.

*Prerequisite: ENGL 106 or consent of instructor.*

### 202

#### INTRODUCTION TO FICTION

For students interested in storytelling techniques, this course explores the basics of character, plot, and prose. Students strengthen their writing skills through exercises, drafting short fiction, and studying examples by contemporary writers like Carmen Maria Machado, Kelly Link, and Kali Fajardo-Anstine. *Prerequisite or corequisite: ENGL 106 or consent of instructor.*

### 300

#### WORLDBUILDING

Covers the basics of designing a world for a creative project, such as a novel or video game, by studying other constructed worlds, such as Tolkien's Middle Earth, Faulkner's Yoknapatawpha, and the Star Wars universe. Students construct their worlds by creating a variety of documentation, from maps to mythologies to languages. *Prerequisite: ENGL 106 or consent of the instructor. Fulfills Domestic Cultural Diversity Requirement.*

**320****ENVIRONMENTAL WRITING**

Students explore environmental issues via different written forms ranging from fiction to podcast scripts. Through writing exercises, students practice how to tackle big picture issues like environmental justice or the climate crisis to create change. *Prerequisite: ENGL 106 or consent of the instructor. Fulfills Domestic Cultural Diversity Requirement.*

**341****POETRY WORKSHOP I**

An advanced workshop in the writing of poetry. Students receive intensive analysis of their own work and acquire experience in evaluating the work of their peers. *Prerequisite: Grade of B or better in CRWR 201 or consent of instructor. Can be repeated for credit.*

**342****FICTION WORKSHOP I**

This course focuses on developing storytelling techniques via writing short fiction. Students draft and revise several short stories and practice workshop methods commonly used in graduate programs and professional settings. *Prerequisite: CRWR 202 or consent of instructor. Can be repeated for credit.*

**411****FORM AND THEORY: POETRY**

An advanced workshop in which students are asked to write in various poetic forms, such as the sonnet, villanelle, sestina, and pantoum. *Prerequisite: CRWR 341 or consent of instructor. Alternate years.*

**412****FORM AND THEORY: FICTION**

Examines philosophical and aesthetic theories of fiction, and the resulting fiction based on those theories. Authors will most likely include Aristotle, Calvino, Gardner, Gass, and Nabokov. *Prerequisite: CRWR 342 or consent of instructor. Alternate years.*

## ENTREPRENEURSHIP (ENTR)

The minor in Entrepreneurship is designed to support all other major and minor fields of study at Lycoming College. The structure of the entrepreneurship program is based on the idea that a student's entrepreneurial interests revolve around their major field of study. The entrepreneurship curriculum along with associated lectures, simulations, and practical application of essential entrepreneurial skills enhances students' preparation for starting their own venture or careers with any sized organization in any field. Employers are looking for graduates who can think and act entrepreneurially.

Career possibilities include:

1. Starting or acquiring a student's own venture within the student's major
2. Obtaining a position of employment with an emerging growth (entrepreneurial) organization
3. Contributing to any organization (for-profit and not-for-profit) in a more entrepreneurial manner

The entrepreneurship minor is designed to enhance the student's major field of study by instructing students about entrepreneurial skills in innovation, value creation, and necessary business skills along with a study of human performance techniques which are required for long term sustainable success in for-profit, non-profit, and public organizations.

While not required to complete the minor field of study, students are encouraged to consider the following courses as a complement to entrepreneurship: ECON 110, ECON 111, and PSY 110.

### Minor Requirements

#### 1. Four Core Courses

BUS/ENTR 315 Privately Owned Business Management or  
BUS/ENTR 320 Social Entrepreneurship

ENTR 200 Entrepreneurship  
ENTR 220 Entrepreneurial Finance  
ENTR 400 Applied Entrepreneurship

#### 2. One additional course from the following:

ACCT 225 Budgeting and Financial Statement Analysis  
ACCT 320 Accounting Information Systems  
ANTH 334 Economic Anthropology  
BUS/ENTR 315 Privately Owned Business Management  
BUS/ENTR 320 Social Entrepreneurship  
BUS/ENTR 325 Digital Marketing  
ENTR 210 Human Performance in Entrepreneurship  
ENTR 335 Readings in Entrepreneurship  
ENTR 470-479 Internship

|             |                                           |
|-------------|-------------------------------------------|
| ENTR N80-89 | Independent Study                         |
| GSWS 200    | Gendered Perspectives                     |
| PSCI 260    | Globalization and Sustainable Development |
| THEA 145    | Introduction to Acting                    |

## **200**

### **ENTREPRENEURSHIP**

Intended for all students regardless of major or year. After an overview of entrepreneurship within new venture creation, middle market, and larger established organizations, the course concentrates on the process and mindset of identifying, creating, evaluating, and acting on opportunities within any field of study. With a focus on value creation, students examine varied business models and methods of financing with both for-profit and not-for-profit objectives. Students apply entrepreneurial concepts to their major fields of study by creating and presenting a business venture pitch deck. Class format includes lectures and discussion, business simulations, in class exercises, guest lecturers, and pitch deck presentations.

## **210**

### **HUMAN PERFORMANCE IN ENTREPRENEURSHIP**

A study of how productivity, psychology, and leadership skills training can be applied to achieve sustained high performance individually and essentials of developing a high performance team. The skills training can be applied to entrepreneurship, sports, the performing arts, academia, and everyday life. Topics include: self-awareness, goals setting, self-regulation, time management, stress and anger management, entrepreneurial leadership, focus, communication, wellness, and health and self-assessment. Topical lectures are combined with frequent case studies.

*Prerequisite: ENTR 200.*

## **220**

### **ENTREPRENEURIAL FINANCE**

The study and application of the necessary corporate financial skills and financing methods for Entrepreneurs of both for-profit and not-for-profit/social entrepreneurial organizations. The course examines the fundamentals of financial statements and financial statement preparation along with the ladder of financing methods available to entrepreneurs including: bootstrapping, friends and family, angel investing, venture capital, private placements, public offering, filing for grants, and crowdfunding. Designed for business and non-business/finance students from any major. *Prerequisite: ENTR 200.*

## **315**

### **PRIVATELY OWNED BUSINESS MANAGEMENT**

Explores how to manage a privately-owned firm from developing the business idea, managing day-to-day issues, and exit strategies and succession planning. Students examine how to adapt tools developed for publicly-owned firms to create effective strategies for private firms including small and family-owned businesses. Topics include general management issues such as developing and supporting organizational culture, employment best practices, and using budgets as planning tools. *Cross-listed as BUS 315. Prerequisites: ENTR 200; or BUS 228, 238, and 244; or consent of instructor.*

**320****SOCIAL ENTREPRENEURSHIP**

Focuses on creating a business to solve a social problem with the intent of achieving both a social impact and financial sustainability. The course views social entrepreneurship as a distinct alternative to public sector initiatives, especially in its approach to pervasive problems in society. Students build on principles learned in ENTR 200 and apply them and additional strategies to impacting social issues. *Cross-listed as BUS 320. Prerequisites: ENTR 200; or BUS 228, 238, and 244; or consent of instructor.*

**325****DIGITAL MARKETING**

With the rapid shift of advertising dollars away from traditional media to digital platforms, it is becoming increasingly important for entrepreneurs and marketing graduates to be well-versed in digital marketing fundamentals. Through readings, papers, videos, case studies, and hands-on projects, students come away with an understanding of successful digital marketing strategies, user generated content, search, social media and networks, mobile, and web analytics. Students also complete a hands-on project to build a marketing plan for a local business. Students exit the course with a solid understanding of digital marketing tactics, tools, and resources available for ongoing education. *Cross-listed as BUS 325. Prerequisites: ENTR 200; or BUS 228, 238, and 244; or consent of instructor.*

**335****READINGS IN ENTREPRENEURSHIP**

Examines classic literature in entrepreneurship in order to enhance entrepreneurship teaching, namely, by discussing the social and institutional basis of entrepreneurship, as well as its economic meaning and implications to successful entrepreneurial ventures. Readings highlight a number of key themes from the economics of enterprise, such as the importance of institutions, the roles of risk and uncertainty, the causes of profit, the process of entrepreneurial decision-making, the sovereignty of consumers, and the effects of entrepreneurial competition.

**349****SPECIAL TOPICS IN ENTREPRENEURSHIP**

Examines topics and emerging trends in entrepreneurship as portrayed in books, popular writings, and peer-reviewed publications. Students analyze and discuss topics such as design thinking or entrepreneurial ecosystems. *Prerequisites: ENTR 200 or permission of the instructor. May be repeated once for credit with consent of instructor when topics are different.*

**400****APPLIED ENTREPRENEURSHIP**

Provides a dynamic, practical, hands-on approach that encourages students to immerse themselves in the vision, research, and planning aspects of a new business or not-for-profit venture. Designed to integrate business learning from the students' previous undergraduate experiences. Students research, develop, and write detailed business plans used to create successful businesses and not-for-profit organizations. Students gain exposure to contemporary

business topics through periodic presentations by local professionals. *Prerequisite: C- or better in ENTR 315 or 320; BUS 228, 238, and 244; or consent of instructor.*

#### **470-479**

##### **INTERNSHIP**

Students may work with a company in virtually any industry with the idea that the student would have significant exposure to either the owner or senior level management to acquire practical experience in building an entrepreneurial organization. The internship could also be with a larger organization in the field of corporate venturing. *Prerequisites: ENTR 200, 210, and 220, or consent of instructor.*

#### **N80-89**

##### **INDEPENDENT STUDY**

Allows for research in a proposed area of entrepreneurship or the pursuit of an entrepreneurial idea. *Prerequisites: ENTR 200, 210, and 220, or consent of instructor.*

# ENVIRONMENTAL SCIENCE (ENV)

Professor: Newman

Assistant Professor: McClelland, Rieck (Coordinator)

Lecturer: Kaunert

- Major: Environmental Science
- Courses required: 13 (B.A.), 16 (B.S.)
- Non-credit Colloquium: 4 semesters
- Capstone requirement: Practical Experience, Presentation in Colloquium
- Minor: Environmental Science

The interdisciplinary Environmental Science major may be applied to either the Bachelor of Arts or Bachelor of Sciences degrees. The program prepares students with the background necessary to obtain internships and employment with government agencies, educational institutions, research and conservation non-profit organizations, as well as graduate coursework in numerous interdisciplinary environmental and sustainability programs.

Students majoring in Environmental Science may not double major in Environmental Studies. Students with a minor in Environmental Science may not obtain a second minor in Environmental Studies.

## Major Requirements

### The B.A. Degree

To complete the major, students must complete BIO 110, 111, 224; ENV 200, 220; CHEM 122/123, 124/125, one course from CHEM 219, 222/223, or 232; three courses from Group 1 and two courses from Group 2.

#### **Group 1: Natural Science electives (choose three):**

|         |                                                      |
|---------|------------------------------------------------------|
| BIO 225 | Plant Sciences                                       |
| BIO 325 | Microbial Ecology                                    |
| BIO 328 | Aquatic Biology                                      |
| BIO 329 | Tropical Marine Biology                              |
| BIO 334 | Invertebrate Zoology                                 |
| BIO 336 | Vertebrate Biology                                   |
| BIO 342 | Animal Behavior                                      |
|         |                                                      |
| BIO 436 | Evolution                                            |
| ENV 215 | Introduction to Geographic Information Systems (GIS) |
| ENV 445 | Ecology and Environmental Research Methods           |

**Group 2: Non-Natural Science electives (choose two with different prefixes):**

|          |                                           |
|----------|-------------------------------------------|
| ANTH 103 | Cultural Anthropology                     |
| ANTH 232 | Environmental Anthropology                |
| BUS 228  | Marketing Principles                      |
| BUS 300  | Business and Society                      |
| ECON 225 | Environmental and Resource Economics      |
| ENGL 337 | Environmental Literature                  |
| HIST 200 | Energy, Security, and Global Competition  |
| PHIL 130 | Introduction to Philosophy of Science     |
| PHIL 333 | Philosophy of Natural Science             |
| PSCI 260 | Globalization and Sustainable Development |

Juniors and seniors are required to successfully complete four semesters of BIO 349/449 (non-credit colloquium) and complete the capstone experiences described below. Enrollment in student teaching and/or other similar off-campus academic experiences will be accepted by the department in lieu of that semester's colloquium requirement.

Seniors must also complete the capstone experiences described below.

**The B.S. Degree**

To earn the B.S. degree, Environmental Science majors must complete the major described above and pass three additional courses chosen in any combination from the following:

BIO 222 or above  
CHEM 200 or above  
CPTR 125 or above  
ENV 215 or above  
MATH 127 or above  
PHYS 225 or above

**Capstone Requirements**

In order to graduate, all environmental science majors must demonstrate to the Department their command of environmental science by meeting the following two criteria:

**1. Practical Experience:** All students must complete at least one of the experiences in the following list: Internship, Practicum, ENV 445, Relevant Summer Experience, Independent Studies, Honors, Teaching Semester, Environmental Science Laboratory Assistant, Environmental Science-related volunteer work (Summer experiences, environmental science-related volunteer work, or working as a lab assistant must be approved by the program coordinator in order to be used to meet this requirement).

**2. Research & Presentation Component:** All junior and senior majors are required to successfully complete Biology Colloquia (BIO 349/449) during all their semesters on campus. Students will research an environmental science topic and make an oral presentation at the Biology Colloquium during their final year. This will demonstrate information literacy in the environmental sciences.



### **Minor Requirements**

A minor in Environmental Science consists of BIO 110 or CHEM 122/123, BIO 111, ECON 225, ENV 200 and 220, and one additional BIO or ENV course numbered 215 or higher.

### **200**

#### **INTRODUCTION TO GEOLOGY**

A broad summary of the physical nature of the Earth, including its internal structure, surface processes, and natural resources. Topics may include how processes such as weathering/erosion through forces such as wind, water, landslides, and glaciers shape the earth and how internal forces such as plate tectonics cause earthquakes and volcanoes. *Four hours of lecture per week. Alternate years.*

### **215**

#### **INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (GIS)**

Geographic Information Systems (GIS) is the science of linking data of various types to locations in order to explore spatial patterns and processes. While GIS applications can be used to create maps, this course focuses on tools for spatial analysis. The course covers basic approaches that use spatial data to identify locations and pathways in landscapes and to summarize characteristics of locations for basic and applied purposes. Students learn about the spatial and non-spatial data used in GIS analysis, how projections and coordinate systems affect analysis, and how to summarize spatial relationships. Many examples and topics stem from ecology and environmental science, but approaches include applications for students in public policy, anthropology, archaeology, and any discipline that requires analyses of spatial data. *Four hours of lecture and three one-hour labs per week. Not recommended for first-year students.*

### **220**

#### **ENVIRONMENTAL BIOLOGY**

Provides an introduction to principles and concepts of contemporary environmental problems. The effects of human population on the earth's resources are studied against a background of principles in ecology and sustainability. Course material includes topics such as availability of food, processing of solid waste, alternative energy, clean water, and green infrastructure. *Four hours of lecture and one three-hour laboratory per week.*

### **445**

#### **ECOLOGY AND ENVIRONMENTAL RESEARCH METHODS**

Focuses on the principles, theories, and methods of research in the ecological and environmental sciences. Students meet three times per week to discuss research approaches, data management, experimental design, methodologies, and data analysis. Each student designs and conducts a field- or lab-based experiment that can be supervised by any member of the biology faculty. Each student prepares a research proposal, an oral presentation, a poster presentation, and a scholarly manuscript. *Three one-hour seminars and six to eight hours of laboratory work per week.*

**470-479**

INTERNSHIP

**N80-N89**

INDEPENDENT STUDY

Departmental studies are experimentally oriented and may entail either lab or field work.

**490-491**

INDEPENDENT STUDY FOR DEPARTMENTAL HONORS

# ENVIRONMENTAL STUDIES

Assistant Professor: Rieck (Coordinator)

- Courses required for the Major: 12 (B.A. Degree)
- Capstone Requirement: ENV 445
- Minor: Environmental Studies

The interdisciplinary major in Environmental Studies is offered as a Bachelor of Arts degree. The program prepares students to holistically engage with environmental topics in multiple areas of society from law to media. Students will obtain the background necessary for internships and employment in non-profit organizations, educational institutions, conservation, and government agencies as well as graduate coursework in environmental disciplines such as environmental law or environmental policy. With classes in Biology, Environmental Science, English, Anthropology, Business, Political Science, Economics, and others, this broad, interdisciplinary program prepares students beyond the sciences to engage with the social aspect of environmental issues.

Students majoring in Environmental Studies may not double major in Environmental Science. Students with a minor in Environmental Studies may not obtain a second minor in Environmental Science.

## **Major Requirements**

|          |                                            |
|----------|--------------------------------------------|
| ANTH 232 | Environmental Anthropology                 |
| BIO 224  | Ecology                                    |
| ENGL 337 | Environmental Literature                   |
| ENV 220  | Environmental Biology                      |
| ENV 445  | Ecology and Environmental Research Methods |

## **One course from the following:**

|              |                                              |
|--------------|----------------------------------------------|
| BIO 201      | Introduction to Birdwatching and Ornithology |
| BIO 225      | Plant Sciences                               |
| BIO 325      | Microbial Ecology                            |
| BIO 328      | Aquatic Biology                              |
| BIO 329      | Tropical Marine Biology                      |
| BIO 334      | Invertebrate Zoology                         |
| BIO 336      | Vertebrate Biology                           |
| BIO 342      | Animal Behavior                              |
| BIO 436      | Evolution                                    |
| CHEM 102     | Chemistry of Food and Cooking                |
| CHEM 122/123 | General Chemistry I                          |
| CHEM 124/125 | General Chemistry II                         |
| CHEM 130     | The Chemistry of Energy                      |
| CHEM 219     | Organic and Biochemistry                     |
| CHEM 222/223 | Organic Chemistry I                          |
| CHEM 224/225 | Organic Chemistry II                         |

|         |                                                |
|---------|------------------------------------------------|
| ENV 215 | Introduction to Geographic Information Systems |
| ENV 200 | Geology                                        |

**Three courses from the following:**

|          |                                       |
|----------|---------------------------------------|
| ARHI 342 | Art and Politics in Latin America     |
| ARHI 345 | Art and Environment                   |
| ENGL 343 | Global Literature                     |
| CRWR 320 | Environmental Writing                 |
| PHIL 130 | Introduction to Philosophy of Science |
| PHIL 228 | Philosophy and the Environment        |
| PHIL 333 | Philosophy of Natural Science         |
| HIST 200 | Energy, Security, Global Comp         |

When the topic is relevant to environmental studies, the program will support an ASC appeal for HIST 245/345 as an elective in this category.

**Three courses from the following:**

|          |                                      |
|----------|--------------------------------------|
| ANTH 101 | Ancient Bodies, Modern Lives         |
| ANTH 102 | Patterns in Prehistory               |
| ANTH 103 | Cultural Anthropology                |
| ANTH 310 | Food and Culture                     |
| BUS 228  | Marketing Principles                 |
| BUS 300  | Business and Society                 |
| ECON 225 | Environmental and Resource Economics |

**Capstone Requirements**

To graduate, all Environmental Studies majors must demonstrate their command of environmental studies by successfully completing ENV 445, including a presentation of their work at an appropriate forum to be determined by each student's advisors and the members of the Environmental Studies program.

**Minor Requirements**

A minor in Environmental Studies requires ANTH 232, BIO 224, ENGL 337, ENV 220, and one additional course that counts toward the Environmental Studies major.

# EXERCISE SCIENCE

Associate Professor: Broussard (Co-coordinator)

Assistant Professor: O'Donnell (Co-coordinator)

- Courses Required for the Major: 13 (B.A.), 16 (B.S.)
- Capstone Requirement: EXSC 401
- Minor: Exercise Science

A major in Exercise Science provides students with a foundation in the scientific principles of human movement, physical activity, and health. This interdisciplinary major requires coursework in biology, chemistry, exercise science, and electives related to health, nutrition, exercise, and sports performance. This major is designed for students interested in health, fitness, training, and human performance. It prepares students for a variety of professions and for entry into advanced exercise-related disciplines, including physical therapy, athletic training, exercise physiology, kinesiology, strength and conditioning, and wellness coaching. It also provides a strong foundation for those pursuing graduate or professional training in healthcare or health-related professions.

Students may not double major in any combination of Exercise Science, Biochemistry, Biology, Biomedical Sciences, or Cell and Molecular Biology.

Students following catalog year 2025-26 and prior may not double major in any combination of Exercise Science, Biochemistry, Biology, Biomedical Sciences, or Cell and Molecular Biology with Biology: Anatomy and Physiology, Biology: Cell and Molecular Biology, or Biology: Comprehensive.

## Major Requirements

### The B.A. Degree

#### 1. Core courses:

|              |                                  |
|--------------|----------------------------------|
| BIO 110      | Introduction to Biology I        |
| BIO 111      | Introduction to Biology II       |
| BIO 115      | Medical Terminology (2 credits)  |
| BIO 116      | First Aid/CPR (2 credits)        |
| BIO 230      | Nutrition                        |
| BIO 323      | Human Physiology                 |
| BIO 338      | Human Anatomy                    |
| CHEM 122/123 | General Chemistry I              |
| EXSC 110     | Introduction to Exercise Science |
| EXSC 301     | Exercise Physiology              |
| EXSC 401     | Exercise Science Capstone        |

#### 2. One course from:

|          |                                         |
|----------|-----------------------------------------|
| PHYS 105 | Physics Phor Everyone                   |
| PHYS 225 | Fundamentals of Physics I (recommended) |

### 3. Two courses from:

|           |                                              |
|-----------|----------------------------------------------|
| ANTH 101  | Ancient Bodies Modern Lives                  |
| ANTH 310  | Food and Culture                             |
| BIO 108   | Public Health                                |
| BIO 343   | Comparative Biomechanics                     |
| NEURO 210 | Introduction to Neuroscience I               |
| NEURO 211 | Introduction to Neuroscience II              |
| PSY 110   | Introduction to Psychology                   |
| PSY 223   | Foundations of Sport and Exercise Psychology |
| SMGT 110  | Introduction to Sport Management             |
| SOC 310   | Medical Sociology                            |

### Capstone Requirement

All majors must successfully complete EXSC 401.

### The B.S. Degree

Students interested in pursuing advanced degrees in medicine (M.D., D.O., or P.A.), physical or occupational therapy, nursing, chiropractic practice, or graduate training in Exercise Science should consider the B.S. degree.

#### 1. Core courses

|              |                                     |
|--------------|-------------------------------------|
| BIO 110      | Introduction to Biology I           |
| BIO 111      | Introduction to Biology II          |
| BIO 115      | Medical Terminology (2 credits)     |
| BIO 116      | First Aid/CPR (2 credits)           |
| BIO 230      | Nutrition                           |
| BIO 323      | Human Physiology                    |
| BIO 338      | Human Anatomy                       |
| CHEM 122/123 | General Chemistry I                 |
| CHEM 124/125 | General Chemistry II                |
| EXSC 110     | Introduction to Exercise Science    |
| EXSC 301     | Exercise Physiology                 |
| EXSC 401     | Exercise Science Capstone           |
| MATH 128     | Calculus with Analytical Geometry I |
| PHYS 225     | Fundamentals of Physics I           |

#### 2. One course from:

|              |                          |
|--------------|--------------------------|
| CHEM 219     | Organic and Biochemistry |
| CHEM 222/223 | Organic Chemistry I      |

#### 3. Two courses from:

|          |                             |
|----------|-----------------------------|
| ANTH 101 | Ancient Bodies Modern Lives |
| ANTH 310 | Food and Culture            |

|              |                                              |
|--------------|----------------------------------------------|
| BIO 108      | Public Health                                |
| BIO 343      | Comparative Biomechanics                     |
| BIOCH 444    | Biochemistry I                               |
| CHEM 224/225 | Organic Chemistry II                         |
| NEURO 210    | Introduction to Neuroscience I               |
| NEURO 211    | Introduction to Neuroscience II              |
| PHYS 226     | Fundamentals of Physics II                   |
| PSY 110      | Introduction to Psychology                   |
| PSY 223      | Foundations of Sport and Exercise Psychology |
| SMGT 110     | Introduction to Sport Management             |
| SOC 310      | Medical Sociology                            |

### **Capstone Requirement**

All majors must successfully complete EXSC 401.

### **Minor Requirements**

A minor in Exercise Science consists of BIO 107 or 111 (BIO 111 recommended) and 230; EXSC 110 and 301; and one course from BIO 343, PSY 223, or SOC 310.

## **110**

### **INTRODUCTION TO EXERCISE SCIENCE**

An introduction to the field of exercise science with a focus on how physical activity, exercise, and human movement affect health, performance, and quality of life. This course examines concepts in anatomy, physiology, biomechanics, and nutrition as these topics relate to exercise, health, and sports performance. Throughout this course, students explore the field and career options available to this discipline.

## **301**

### **EXERCISE PHYSIOLOGY**

Explores the adaptations of the human body and physiological responses associated with physical activity and exercise. The major body systems, including the neural, muscular, cardiovascular, respiratory, and endocrine, are examined regarding their roles in physical activity. This advanced course has lecture and laboratory components focusing on testing and assessing physiological responses to exercise. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: EXSC 110, and BIO 107 or 111 (BIO 111 recommended).*

## **401**

### **EXERCISE SCIENCE CAPSTONE**

Focuses on research methods and approaches used in exercise science. Students choose appropriate topics and complete a research project or practical experience under the guidance of faculty members. *Prerequisite: EXSC 301.*

## FILM AND VIDEO ARTS (FVA, FILM)

Professor: Peterson (Chair)

Assistant Professor: Reese

- Major: Film and Video Arts
- Courses required: 12 (not including zero or 1 credit courses)
- Capstone requirement: FVA 400
- Minors: Film and Video Arts, Film Studies, Screenwriting

The major and minor in Film and Video Arts offer courses that cover development and production techniques for a variety of film genres such as narrative, documentary, experimental film, video installation, and stop motion animation. The Film Studies minor focuses on the theory and history of film. The Screenwriting minor focuses on writing skills as they apply to cinematic storytelling.

## FILM AND VIDEO ARTS (FVA)

Film and Video Arts is an innovative major that helps students develop skills in digital filmmaking and storytelling in a wide range of genres such as narrative, documentary, experimental film, animation and stop motion animation, and video installation. The major has a strong relationship to other disciplines at the college that address content incorporated in film and video arts, including art, theater, creative writing, electronic music, business, sociology, political science, and history. The Film and Video Arts curriculum at Lycoming College teaches the theory, skills, and grammar of the visual language necessary to work with the moving image. Upper level development and pre-production, production, and post-production courses, film theory and history courses, and the opportunity to do a professional internship provide the conceptual, technical, and theoretical knowledge necessary to create compelling films and videos and compete in the industry.

### Major Requirements

All students majoring in Film and Video Arts must complete the core courses and the required number of courses from each additional category listed below:

#### CORE COURSES:

|                                                    |                               |
|----------------------------------------------------|-------------------------------|
| FILM 221                                           | Screenwriting                 |
| FVA 200                                            | Digital Film and Video I      |
| FVA 300                                            | Digital Film and Video II     |
| FVA 365                                            | Senior Project Pre-Production |
| FVA 400                                            | Senior Project                |
| 2 credits of FVA 161 Film and Video Arts Practicum |                               |

#### Specialized Courses:

Three additional FVA courses, at least one must be 300-level.



**Foundations of Film Theory and History (choose two):**

One ARHI 300-level course (or FVA 322)

Any FILM courses

FVA 100                      Seeing in Motion: The Language of Moving Images

**Elective Courses (choose two):**

|          |                                                |
|----------|------------------------------------------------|
| ART 212  | Color and Design                               |
| ART 213  | 3D Animation                                   |
| ART 227  | Photography I OR ART 240 Digital Photography I |
| ART 243  | Introduction to Digital Art                    |
| ART 344  | Time Based Digital Media                       |
| ART 449  | Practicum                                      |
| BUS      | any course                                     |
| CMS      | any course                                     |
| CRWR 202 | Introduction to Fiction                        |
| CRWR 300 | Worldbuilding                                  |
| CRWR 342 | Fiction Workshop I                             |
| ENG 326  | Digital Media Studies                          |
| ENTR     | any course                                     |
| MUS 224  | Music and Technology I                         |
| MUS 225  | Music and Technology II                        |
| THEA 145 | Acting                                         |
| THEA 148 | Play Production                                |
| THEA 245 | Acting Realism                                 |

**Capstone Requirement**

All majors must successfully complete FVA 400.

**Minor Requirements**

The department offers three minors:

The **Film and Video Arts** minor will be of interest to students who want to use film as a medium to communicate the content of their majors. Students of various majors might want to create a documentary film or educational website on the subject of their senior research. Minors in Film and Video Arts may pursue graduate studies and/or employment in a variety of fields including film or video production, advertising, and cultural analysis.

Five courses are required:

- FVA 200
- FVA 300
- One from ART 213, 227, 240, or 243
- Two additional FVA courses

The minor in **Film Studies** develops skills in media writing and the critical analysis of film,

television, and video as an art form. Minors develop skills in researching film history and thinking creatively about contemporary attitudes, values, and beliefs associated with film.

The minor requires any four courses from the following lists:

- Any course from the FILM prefix
- FVA 100
- One of the following may be substituted: GERM 221, PHIL 145, REL 232, or when focused on film, FRN 321, FRN 426, GERM 426, SPAN 321, or SPAN 426.

In the **Screenwriting** minor, students learn the art of screenwriting through courses that focus on writing, film history, film genres, and filmmaking production, all of which combined, teach cinematic storytelling skills. The minor requires six courses: CRWR 202, CRWR 342, FILM 221, FILM 325, one additional FILM course, and FVA 200.

### 100

**SEEING IN MOTION: THE LANGUAGE OF MOVING IMAGES** An introduction to the history and methodology of moving images. A broad range of mediums and purposes for moving images are discussed, such as filmmaking, digital video, animation, social media content creation, photography, video game design, and video art. Though this is fundamentally a lecture-based course, several small creative projects will augment student understanding of moving image principles. *Not open to juniors and seniors.*

### 120

#### STOP MOTION ANIMATION

Takes the student through various aspects of stop motion animation. Includes analyzing animation shorts, developing concepts, and the production of stop motion animations. Emphasis is on conceptualization, creativity, and visual aesthetics. Intended for beginners (experience with creating videos or films is not necessary).

### 161

#### FILM AND VIDEO ARTS PRACTICUM

Participation in either the pre-production or production process through positions of leadership on a senior film project under the guidance of faculty including but not limited to the role of producer, director, cinematographer, assistant director, editor, set designer, sound designer, and editor. Students may not register for FVA Practicum; the department chair registers all students for Practicum after productions have been selected and all duties have been completed. *Prerequisite: Instructor approval. 1 credit. May be repeated for credit. Limited to 4 credits total; required for juniors; not open to seniors.*

### 200

#### DIGITAL FILM AND VIDEO I

Introduces students to the basics of digital filmmaking. Topics include the principles, techniques, and fundamentals of the development stage of digital filmmaking, including storyboards and treatments, as well as film production and post-production. Students will engage in film screenings and technical demonstrations related to visual storytelling and editing.

**220****SOUND FOR THE SCREEN**

A concept-driven course where students learn the principles of sound design techniques such as folley sound, building soundtracks, using field recorders, and related sound editing software. This course will help students to understand sounds in the world around us and how they play a part in creative film and sound-based projects.

**230****EDITING AND POST**

This post-production course emphasizes editing techniques such as color correction, understanding pacing and tone, visual effects, and sound editing for film. The course focuses on editing for a variety of film genres and how to utilize editing as a transformative tool to combine both visuals and sound elements to convey a specific meaning or story. *Prerequisite: FVA 200.*

**240****SPECIAL TOPICS IN FILM PRODUCTION**

Subject matter varies but may be related to film directing, social media video production, or music video production. *FVA 200 is recommended. May be repeated for credit when topics are different.*

**248****FILM AND VIDEO ARTS COLLOQUIUM**

Students are required to successfully complete the non-credit Colloquium for a total of two semesters through academic experiences such as WRLC and Crossing the Frame Productions. Enrollment in other similar academic experiences on or off campus can be accepted with departmental approval. *Pass/Fail. Non-credit.*

**300****DIGITAL FILM AND VIDEO II**

A continuation of the skills developed in FVA 200, including film and video project research, title sequences, and color grading. An introduction to digital image manipulation and motion graphics as they apply to film and video. *Prerequisite: FVA 200 or consent of instructor. ART 243 is strongly recommended but not required.*

**310****THE MOVING IMAGE IN SERIES**

This production course prepares students to work with the moving image as a series of video shorts that stem from one concept or idea. The course is strongly encouraged for the FVA major; it aids in preparation for the senior project. *Prerequisite: FVA 200.*

**320****NARRATIVE FILMMAKING**

An introduction to fiction filmmaking through lecture, screenings, and hands-on demonstrations. Principles of cinematography, technical processes, and continuity editing are covered. Students also discuss storytelling techniques and analyze the techniques used by established filmmakers. *Prerequisite: FVA 200. FILM 221 is recommended but not required. Alternate years.*

**322****VISUAL MEDIA IN THE DIGITAL AGE**

The historical study of new media, with emphasis on video and interactive art forms, in relationship to the development of television, the World Wide Web, and social networks.

*Cross-listed as ARHI 320. Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

**330****DOCUMENTARY FILMMAKING**

Through a combination of lecture, screening, and hands-on demonstrations, this course familiarizes students with planning, writing, developing, and shooting non-fiction films. Students also discuss storytelling techniques and analyze the techniques used by established filmmakers. *Prerequisite: FVA 200. Alternate years.*

**340****SPECIAL TOPICS IN FILMMAKING AND VIDEO**

Study of selected subject matter such as Motion Graphics and Special Effects, Advanced Stop Motion Animation, Lighting and Green Screen, or Installation Video. *Prerequisite: FVA 200. May be repeated for credit when topics are different.*

**FVA 365****SENIOR FILM PRE-PRODUCTION**

Students prepare the pre-production materials for their senior project from concept through development. This may include film treatments, scriptwriting, budgets, storyboards, auditions, scheduling, and the organization of all materials necessary to work on their senior project. *Prerequisite: 2 credits of FVA 161; senior status.*

**400****SENIOR PROJECT**

Advanced production of documentary, narrative, animation, or experimental video, multi-media, or interactive media incorporating advanced directing, shooting, lighting, sound, effects, and editing. This is the capstone course for the Film and Video Arts major. *Prerequisite: Two FVA courses at the 300 level or above and senior status.*

## FILM STUDIES (FILM)

### 210

#### FILM ART: MOTION PICTURE MASTERPIECES

Study of selected classic experimental and narrative films from around the world as well as from Hollywood. Consideration of what makes a classic through examination of such topics as acting, writing, directing, style, and genre. *Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

### 212

#### MULTICULTURAL AMERICA ON SCREEN

Introduction to the art of understanding moving images to discover the cultural values of American filmmakers and their audiences. Comparison of the ways in which films and television use comedy, drama, and the documentary to examine topics having to do with values, beliefs, and cultural diversity in America.

### 214

#### SURVEY OF LANDMARKS IN FILM HISTORY

Close reading of selected films from around the world in an historical context using basic film theory to guide the reading with a major emphasis on cinematography, editing, and *mise-en-scene*. *Prerequisite: ENGL 106. Fulfills Domestic Cultural Diversity Requirement.*

### 215

#### WATCHING CARTOONS

Introduces students to the history of animation from its inception to today. The focus will be on independent animators and filmmakers who approach animation as a process, a craft, a representational idiom, and as an artistic medium that has the capacity to address a wide range of subject matter.

### 220

#### TOPICS IN GENRES, ACTORS, AND DIRECTORS.

Comparative study of film genres, directors, and/or performers from an historical perspective. *Prerequisite: ENGL 106. May be repeated for credit when topics are different.*

### 221

#### INTRODUCTION TO SCREENWRITING

Training in methods of creating the original screenplay for film and/or television. Emphasis is placed on scene and plot construction, character development, and using the language of film to tell a story. *Prerequisites: ENGL 106.*

### 300

#### FILM AND SOCIAL CHANGE

Close analysis of selected documentary, propaganda, and social problem films that seek to influence our perceptions of reality. *Prerequisites: ENGL 106.*

**315****CREATIVITY IN FILM**

Study of ground-breaking artists who developed new ways of relating form to content in independent, experimental, animated, and digital films. *Prerequisites: ENGL 106.*

**320****TOPICS IN FILM AND CULTURE**

Exploration of film and related media texts in a particular historical context. Includes a study of the art, music, literature, political, and social framework of the period and culture under consideration. *Prerequisites: ENGL 106. May be repeated for credit when topics are different.*

**325****SPECIAL TOPICS IN SCREENWRITING**

Students become familiar with how to develop thematic, emotional, and visual unity through structure, character development, scene shaping and dialogue. We address effective writing techniques for achieving complex visual and emotional rhythm. Topics may include feature, episodic shorts, short films, and specified genre. *Prerequisites: ENGL 106.*

**326****MEDIA CRITICISM**

Practice in analyzing print, auditory, visual, and digital texts from a cultural studies point of view. Emphasis is placed on basic methods of semiotic theory and application of structuralist analysis and frame theory. *Prerequisites: ENGL 106 and sophomore standing.*

**FRENCH & FRANCOPHONE STUDIES (See Modern Language Studies)**

# GENDER, SEXUALITY, AND WOMEN'S STUDIES (GSWS)

Assistant Professor: Stafford (Coordinator)

- Major: Gender, Sexuality, and Women's Studies
- Courses required for major: 8
- Capstone requirement: GSWS 400

The program in Gender, Sexuality, and Women's Studies offers an interdisciplinary major and minor.

## Major Requirements

A major in Gender, Sexuality, and Women's Studies requires eight courses.

### 1. Core Courses

These courses provide students with a theoretical and methodological perspective and framework with which to understand issues of gender and sexuality.

Required courses (3):

- GSWS 200 Gendered Perspectives
- SOC 241 Sociology of Gender and Sexuality
- GSWS 400 Gender, Sexuality, and Women's Studies Capstone

Take one course from:

- CJCR 343 Research Methods in Criminal Justice
- ENGL 339 Literature and Gender Studies
- PSY 212 Research Methods in Psychology
- SOC 330 Research Methods

### 2. Four Elective Courses

Students must take four additional courses from the following list with a minimum of three prefixes. At least two courses must be at the 300-level or higher.

|              |                               |
|--------------|-------------------------------|
| ANTH 101     | Ancient Bodies, Modern Lives  |
| ANTH 103     | Cultural Anthropology         |
| ANTH 310     | Food and Culture              |
| ARHI 339     | Gender and Sexuality in Art   |
| CJCR 247     | Victimology                   |
| CJCR 324     | Domestic Violence             |
| CJCR 334     | Race, Class, Gender and Crime |
| CJCR 448/449 | Criminal Justice Practicum    |
| ENGL 229     | African American Literature   |
| ENGL 336     | Shakespeare                   |
| ENGL 339     | Literature and Gender Studies |
| FVA 320      | Narrative Filmmaking          |



|          |                                                  |
|----------|--------------------------------------------------|
| FVA 330  | Documentary Filmmaking                           |
| GSWS 300 | Topics in Gender, Sexuality, and Women's Studies |
| HIST 324 | Early American Law and Society                   |
| HIST 338 | Rights, Reform and Protest                       |
| HIST 342 | Women and Reform                                 |
| PSY 120  | Child and Adolescent Development                 |
| PSY 220  | The Psychology of Close Relationships            |
| PSY 448  | Practicum in Psychology                          |
| REL 213  | Medieval Women's Religious Literature            |
| REL 214  | Constructing Gender in Christianity              |
| REL 333  | Old Testament Women                              |
| SOC 228  | Aging and Society                                |
| SOC 448  | Practicum in Sociology                           |
| THEA 333 | Theater History II                               |

### **Capstone Requirement**

All majors must successfully complete GSWS 400.

### **Minor Requirements**

A minor in Gender, Sexuality, and Women's Studies requires GSWS 200, SOC 241, and three courses from the elective courses listed for the major.

## **200**

### **GENDERED PERSPECTIVES**

An examination of gender issues from an interdisciplinary perspective. Explores the social construction of gender and gendered institutions as well as relevant critical approaches such as feminist, utopian, and queer theories. Topics may involve language, art, science, politics, culture, violence, race, class, ethnic differences, sexuality, and pornography. *Fulfills either Domestic or Global Cultural Diversity Requirement.*

## **300**

### **TOPICS IN GENDER, SEXUALITY, AND WOMEN'S STUDIES**

An examination of selected topics in Gender, Sexuality, and Women's Studies designed to allow students to pursue particular subjects in more depth and detail than in the general introductory course. *Prerequisite: ENGL 106 or consent of instructor. May be repeated for credit when topics are different. Fulfills either Domestic or Global Cultural Diversity Requirement.*

## **400**

### **GENDER, SEXUALITY, AND WOMEN'S STUDIES CAPSTONE**

An independent research project under the supervision of a GSWS faculty member whose expertise is aligned with the project of interest.

**N80-N89****INDEPENDENT STUDIES**

With the approval of the Coordinator, an appropriate special course or independent-study project may be substituted for one of the four cross-listed courses required for the minor.

**GERMAN (See Modern Language Studies)**

**GREEK (See Religion)**

**HEBREW (See Religion)**

# HISTORY (HIST)

Professors: Chandler, Pearl, Silkey

Associate Professor: Seddelmeyer (Chair)

- Major: History
- Courses required for major: 10 (not including zero or 1 credit courses)
- Non-credit Colloquium: 2 semesters
- Capstone requirement: HIST 449
- Minors: American History, European History, Global History, History

## Major Requirements

A major in History consists of 10 courses, distributed as follows:

### One course from the following:

- HIST 225 Indigenous Early America
- HIST 226 Era of the American Revolution
- HIST 230 African American History
- HIST 233 Civil War and Reconstruction
- HIST 242 Vietnam War at Home and Abroad

### One course from the following:

- HIST 210 Ancient Greece and Rome
- HIST 211 From Rome to the Vikings
- HIST 212 Medieval Europe and Its Neighbors
- HIST 214 Monarchy and Modernity
- HIST 217 20th Century Europe

### One course from the following:

- HIST 200 Energy, Security, and Global Competition
- HIST 221 Latin America
- HIST 232 The Rise of Islam
- HIST 243 Asia in a Global Context
- HIST 244 The Pacific World
- HIST 246 Africa and the World

### One course from the following:

- HIST 401 The Middle Ages in Modern Eyes
- HIST 402 Revel, Riot, and Rebellion in Early America
- HIST 404 Modern America
- HIST 405 British Empire

### Capstone (required):

- HIST 449 Historical Methods in Practice

One additional HIST course numbered 200 or higher

One HIST course at the 300-level

**Three additional courses from the following:**

|                 |                                                 |
|-----------------|-------------------------------------------------|
| Any HIST course |                                                 |
| AMST 200        | Perspectives on America                         |
| ARCH/REL 226    | Archaeology of Ancient Israel and Its Neighbors |
| EDUC 465        | Professional Semester of Student Teaching       |
| GSWS 200        | Gendered Perspectives                           |
| MDVS 200        | Introduction to Medieval Studies                |
| PSCI 140        | Comparative Politics and Geography              |
| REL 228         | History and Culture of the Ancient Near East    |

In addition, majors are required to successfully complete at least two semesters of History Colloquium, one of which must be HIST 448.

Other appropriate courses outside the department may be counted upon departmental approval. In addition to the courses listed below, special courses, independent study, and honors are available. History majors are also encouraged to participate in the internship program.

Students interested in teacher certification should refer to the Department of Education listing. For history majors who student teach, EDUC 465 Professional Semester of Student Teaching may count as one course for the history major.

**Capstone Requirement**

All majors must successfully complete HIST 449.

**Minor Requirements**

Four minors are offered by the Department of History. The following courses are required to complete a minor in **American History**: HIST 125, 126, and three courses in American history numbered 200 and above (including HIST 221). A minor in **European History** requires the completion of HIST 115, 116, and three courses in European history numbered 200 and above. A minor in **Global History** requires the completion of four courses from the following: HIST 200, 221, 230, 232, 242, 243, 244, 246, 329, 336, or 342. To obtain a minor in **History** (without national or geographical designation), a student must complete six courses in history, of which three must be chosen from HIST 101, 115, 116, 125, and 126, and three must be history courses numbered 200 and above.

**101**

**EXPLORING HISTORY TOPICS**

Exploration of selected historical problems, themes, periods, or movements. *Not open to juniors or seniors except with consent of instructor.*

**115**

**WESTERN CIVILIZATION I**

A survey of the major developments in the history of Western Civilization from its roots in the Ancient Near East to the era of the Renaissance. Considers the political, social, and cultural aspects of Mesopotamia, Egypt, the ancient Hebrews, Greece, Rome, and Western Europe. Byzantine and Islamic civilizations are studied to provide a wider scope for comparison.

**116**

**WESTERN CIVILIZATION II**

A survey of the major developments in the history of Western Civilization from the era of the Renaissance to the present. Focuses on the political, economic, social, intellectual, and cultural aspects of European history and how Europe interacted with the rest of the world.

**125**

**UNITED STATES TO 1877**

An introduction to the history of the United States of America from before European colonization to the end of Reconstruction. Examines the people, measures, and movements of this history, endeavoring to do justice to the people, in all their diversity, who together created the ideals, institutions, and realities, which we inherit today.

**126**

**UNITED STATES SINCE 1877**

A study of people, measures, and movements which have been significant in the development of the United States since the end of Reconstruction. Examines the social and political struggles that established the rights, ideals, and institutions of modern American society and explores the diversity of experiences within this rapidly changing nation.

**200**

**ENERGY, SECURITY, AND GLOBAL COMPETITION**

Examines the historical relationship between energy and security from an international perspective. Emphasizes how energy sources such as coal, oil, and natural gas brought competition that shaped and reshaped global strategy and world politics. Explores topics such as different perspectives on energy security, the roots of oil policy, resource competition during the World Wars, oil production in the Middle East and its impact, and the increasing role of Asia. *Fulfills Global Cultural Diversity Requirement. Alternate Years*

**210**

**ANCIENT GREECE AND ROME**

A study of the ancient Mediterranean world, including the establishment of the notion of citizenship in Greece, the emergence and expansion of the Roman state, its experience as a republic, and its transformation into the Empire. Focus is placed on the society and culture of Greece and Rome as well as political and economic changes. *Alternate years.*

**211****FROM ROME TO THE VIKINGS**

A history of Late Antiquity and the early Middle Ages concentrating on western Afro-Eurasia. The political, cultural, and economic conditions in Europe and the Mediterranean during the period roughly 300-1100 are considered in the context of connections to the wider world. Addresses the emergence of 'barbarian' kingdoms of the west, the Eastern Roman or 'Byzantine' Empire, and the Islamic caliphate; the development of political and religious institutions; and the interactions among these peoples and other civilizations in Europe, Africa, and Asia. *Alternate years. Fulfills Global Diversity Requirement.*

**212****MEDIEVAL EUROPE AND ITS NEIGHBORS**

A history of western Afro-Eurasia during the medieval millennium, concentrating on the high and late Middle Ages, 1000-1500 CE. Addresses the development of political and cultural institutions in western Europe, the Byzantine Empire, and Islamic civilization; their interactions with each other and with civilizations elsewhere in Africa and Asia. The course ends with the first forays of Europeans into the Western Hemisphere. *Alternate years. Fulfills Global Diversity Requirement.*

**214****MONARCHY AND MODERNITY**

Explores the development, function, and transformation of European monarchies from the 16th to the 20th century. Considers topics such as power and authority, revolutions, and institutional reform from political, economic, social, and cultural perspectives. *Alternate years.*

**217****20TH CENTURY EUROPE**

Explores the evolution of Europe in the late 19th and 20th centuries from a variety of perspectives. Evaluates how topics such as imperialism, nationalism, global wars, economic upheaval, revolution, and Cold War relations shaped the identities of 20th century Europe. *Alternate years.*

**221****LATIN AMERICA**

An examination of the native civilization, the age of discovery and conquest, Spanish colonial policy, the independence movements, and the development of modern institutions and governments in Latin America. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**225****INDIGENOUS EARLY AMERICA**

An examination of the history of Indigenous communities in eastern North America from pre-contact with Europeans to the beginning of the reservation system in the British colonies in Canada and the newly formed United States in the 1780s. *Fulfills Domestic Diversity Requirement. Alternate years.*

**226**

#### **ERA OF THE AMERICAN REVOLUTION**

The establishment of British settlements on the American continent, their history as colonies, the causes and events of the American Revolution, the critical period following independence, adoption of the United States Constitution, and the ending of the American Revolution in 1804. *Alternate years.*

**230**

#### **AFRICAN AMERICAN HISTORY**

A study of the diverse experiences and contributions of African Americans in the United States. Beginning with a discussion of African societies and the development of the international slave trade, the course examines the evolution of American slavery, emancipation and urbanization, and the civil rights/Black Power movement. *Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

**232**

#### **THE RISE OF ISLAM**

A survey of early and medieval Islamic civilization, illuminating the foundation of the religion and its spread in the seventh and eighth centuries, the development of a high civilization thereafter, and the subsequent changes in political and social structures over time. Muslim interactions with other civilizations are included, but the emphasis is an understanding of the history of Islamic civilization in its own right. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**233**

#### **CIVIL WAR AND RECONSTRUCTION**

An intensive study of the political, economic, social, cultural as well as military history of the United States in the Civil War era. Topics include the rise of sectional tensions leading up to the secession crisis in 1860, the mobilization of the home fronts to support the war effort, the impact of the war on specific groups such as women and African Americans, and the failed effort to “reconstruct” the South. *Alternate years.*

**242**

#### **VIETNAM WAR AT HOME AND ABROAD**

An examination of the impact of the Vietnam War on American and Vietnamese societies. Rather than focusing on traditional military history, this course investigates the diversity of perspectives and individual experiences among soldiers, civilians, families, and protestors during the war. Explores topics such as the impact of combat experiences on American soldiers, the anti-war movement, and the social and political legacies of the Vietnam War. *Fulfills either Domestic or Global Cultural Diversity Requirement. Alternate years.*

**243**

#### **ASIA IN A GLOBAL CONTEXT**

An examination of major themes and developments in Asian history with an emphasis on interaction between Asian nations and the wider world. Explores topics such as Western presence in Asia, Asian nationalisms, and economic development. *Fulfills Global Cultural Diversity Requirement. Alternate years.*



**244**

**THE PACIFIC WORLD**

An examination of the histories of Australia, New Zealand, and the Pacific Islands (Micronesia, Melanesia, and Polynesia) to better understand how regional cultures, colonial invasions, and post-colonial experiences created links to one another and to the wider world. Explores topics such as diverse regional cultures, the portrayal of the 'exotic' Pacific, the challenges of and responses to colonization, Pacific nuclear programs, and the changing dynamic between the colonies and the colonizers. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**245**

**SPECIAL TOPICS IN HISTORY**

A study of selected historical problems, themes, periods, or movements. *May be repeated for credit with consent of department when topics are different.*

**246**

**AFRICA AND THE WORLD**

An examination of major themes and developments in African history centered on relations between African nations and the rest of the world. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**324**

**EARLY AMERICAN LAW AND SOCIETY**

A study of the interaction between legal and social change in Early America from the colonial period through the "Age of Jackson." Examines both the substance of law (legal doctrine and judicial opinions) and society's use and reaction to that law. Using primary and secondary sources, students examine the different ways in which men and women, free and enslaved, frontier settlers and Indigenous People viewed and interpreted the way law reflected or challenged basic social, political, and economic values. *Alternate years.*

**329**

**EMPIRES AND RESISTANCE**

An exploration of imperialism and the resistance to imperial expansion at home and abroad. Considers topics such as the expansion and dissolution of European Empires, methods of resistance, and colonial nationalism. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**334**

**ORIGINS OF EUROPE**

Takes an in-depth look at the formative period of European civilization during the early Middle Ages. Special focus falls on the Carolingian period of the 8th and 9th centuries, with emphasis on the intertwining of political and religious institutions, the related cultural efflorescence, and the challenges facing imperial unity. *Alternate years.*

**336**

**CRUSADES: CONFLICT AND ACCOMMODATION**

An intensive consideration of interactions between Muslims and Christians in the Middle Ages. Hostile and fruitful relations in Spain, warfare in the Holy Land, and the status of religious minorities

are studied. In addition to the often violent relations between these major religious groups, this course addresses their intellectual, artistic, and literary developments as well as reciprocal influences. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

### **338**

#### **RIGHTS, REFORM, AND PROTEST**

An exploration of the evolution of social justice movements in American society. This seminar examines interconnections between diverse protest movements such as women's suffrage, welfare reform, civil rights, disability rights, and LGBTQ+ liberation. *Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

### **342**

#### **WOMEN AND REFORM**

A study of the development and evolution of transnational women's reform networks, exploring the particular challenges faced by women reformers and the role they played in shaping American society. Considers how factors such as race, class, gender, sexuality, age, and ability impacted women's goals and the strategies employed by activists to expand rights for themselves and others. *Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

### **345**

#### **SPECIAL TOPICS IN HISTORY**

Study of selected historical problems, themes, periods, or movements. *May be repeated for credit with consent of department when topics are different.*

### **401**

#### **THE MIDDLE AGES IN MODERN EYES**

An in-depth study of medieval history by way of modern understandings of the period. Focuses on academic interpretations, but also considers the Middle Ages in the popular imagination such as in film. Examination of the documents, literature, and art of the period constitutes the second major area of course assignments. Student work culminates in a major research project based on the study of translated primary sources. *Prerequisite: one HIST course or consent of instructor. Alternate years.*

### **402**

#### **REVEL, RIOT, AND REBELLION IN EARLY AMERICA**

An in-depth look at the place of popular resistance in Early America. Focuses on the many riots and rebellions of Indigenous, enslaved, and Euro-American peoples in the 17th, 18th, and early 19th centuries to get a better understanding of the politics, society, and culture of Early America. Students develop a substantial research paper on a particular riot or rebellion drawing on academic interpretations and primary sources. *Prerequisite: one HIST course or consent of instructor. Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

### **404**

#### **MODERN AMERICA**

An in-depth study of historical understandings of modern American political, social, and intellectual developments with special emphasis on the years following World War II. Focuses primarily on academic interpretations, but also considers American society in the popular imagination, as

represented by film, music, and literature. Student work culminates in a major independent research project incorporating both primary and secondary source analysis. *Prerequisite: one HIST course or consent of instructor. Alternate years.*

#### **405**

##### **BRITISH EMPIRE**

An in-depth study of European history through an examination of the rise and fall of the British Empire. Focuses not only on academic interpretations of empire, but also considers the legacy of empire, as represented in documents, film, and literature. Student work culminates in a major independent research project, which incorporates primary and secondary source analysis.

*Prerequisite: one HIST course or consent of instructor. Alternate years.*

#### **248, 348, 448**

##### **HISTORY COLLOQUIUM**

This non-credit but required course for students majoring in history offers students opportunities to meet for a series of occasional events, including methodology workshops, career exploration and preparation, and presentations by faculty, guest speakers, and departmental majors. Students taking HIST 449 concurrently deliver formal presentations; those who have not yet taken HIST 449 develop research topic ideas. A letter grade is assigned in a semester when a student gives a presentation. Otherwise the grade is Pass/Fail. *History majors are required to successfully complete a minimum of two semesters of colloquium, one of which must be HIST 448. HIST 449 is a corequisite for HIST 448. Non-credit course.*

#### **449**

##### **HISTORICAL METHODS IN PRACTICE**

This capstone experience focuses on the practice of historical research, analysis, and writing. It provides students with the opportunity to apply historical methodology through the completion of a substantial independent research project incorporating historiographical and primary source analysis of a proposed topic, subject to instructor approval. Required of majors in their junior or senior year.

*Prerequisite: HIST 248 or 348 and one course from HIST 401, 402, 404, and 405, or consent of instructor. Corequisite: HIST 448.*

#### **470-479**

##### **INTERNSHIP**

Typically, history interns work for local government agencies engaged in historical projects or for the Lycoming County Historical Museum.

#### **N80-N89**

##### **INDEPENDENT STUDY**

Recent topics include Viking migrations, medieval paleography, public law in colonial America, AIDS activism, gendered responses to the Moynihan Report, and the history of Lycoming County.

#### **490-491**

##### **INDEPENDENT STUDY**

# **INSTITUTE FOR MANAGEMENT STUDIES (IMS) AND MANAGEMENT SCHOLARS PROGRAM**

Associate Professor: L. Kremer (Director)

The purpose of the Institute for Management Studies is to enhance the educational opportunities for students with a major or minor in Accounting, Business Administration, Economics, Entrepreneurship, Finance, Managerial Economics, Mathematical Finance, or Quantitative Economics. It does this by offering an expanded internship program, special seminars on important management topics, student involvement in faculty research and professional projects, executive development seminars, and a Management Scholars program for academically talented students (described below). In addition, the IMS hosts guest speakers and conferences on current management issues.

All students who have a declared major or minor in the three IMS departments (Accounting, Business Administration, or Economics) and who are in good academic standing are automatically members of the IMS. However, the IMS Director may invite or permit other students to join the IMS who do not meet the first criterion, such as first-year students who have not yet declared a major or minor.

## **Program Requirements**

The IMS sponsors a Management Scholars Program for academically talented students in the IMS departments. To join the Management Scholars Program, a student must satisfy the following criteria:

- a) Have a declared major or minor in one or more of the IMS departments. However, the IMS Director may invite or permit other students to join the Management Scholars Program who do not meet this criterion, such as first-year students who have not yet declared a major or minor.
- b) Have an overall GPA of 3.25 or higher or exhibit strong academic potential if the student is a first semester student.

To graduate as a Management Scholar, a student must meet the following criteria:

- a) Successfully complete two credits of Management Scholar Seminars.
- b) Successfully complete a major or minor in one of the three IMS departments.
- c) Graduate with a GPA of 3.25 or higher in both overall college work and within an IMS major and/or minor.
- d) Successfully complete an appropriate internship, practicum, independent study, or a special project approved by the IMS Director.

At least one Management Scholar Seminar is taught per academic year on an interdisciplinary topic of relevance to students in the IMS programs. The seminars are normally offered as one credit courses and do not result in overload charges for full-time students. However, the total number of seminars that a qualified student is allowed to take will be limited to two.

Students may be both Lycoming College Scholars and Management Scholars.

**100****FUNDAMENTALS OF EXCEL**

Introductory topics include the Microsoft Excel interface, formatting cells, formatting worksheets, basic formulas and functions, advanced functions, data presentation and visualization, and sorting and filtering. Students learn data manipulation and analysis skills. The course is taught in lab-style where students learn new functionality each week and are given tasks to complete in Excel to put their knowledge into practice. *One hour per week. Pass/Fail. Non-credit course.*

**210****MANAGEMENT SCHOLAR SEMINAR**

Team-taught interdisciplinary seminar under the direction of the IMS faculty. A different interdisciplinary topic relevant to students in the IMS programs is offered at least once a year. Completion of two semesters required by the Management Scholars Program. *Prerequisite: Membership in the Management Scholars Program or consent of IMS Director. One credit. May be repeated once for credit when topics are different.*

**340****MANAGEMENT INTERNSHIP STUDY**

A practicum in which students work as interns for businesses, government agencies, and nonprofit organizations in the Williamsport area and locations in Pennsylvania, New Jersey, New York, Washington, D.C., and other places. Reading, writing, and research assignments vary by the credit value of the experience. Enrollments are limited to the numbers of available placements. Internships can be full or part-time, paid or unpaid positions. Students may receive between one to eight credits based on arrangements made prior to taking this internship and the approval of the IMS Director. *Prerequisite: Membership in the Institute for Management Studies and consent of Director. May be repeated for a maximum of 16 credits.*

**349****EUROPEAN BUSINESS EXPERIENCE**

An extensive international business experience that studies how and why businesses go global, with special emphasis on financial, marketing, and management issues. In addition, the course explores how local business culture affects the management of a company. The activities include site visits to businesses and organizations, lectures, and assigned cultural activities. Assignments include preparatory reading before the start of class, written reports while in Europe, and a final project that focuses on a particular topic of interest. The research paper is due after return. The course takes place in London with a side trip to another European city. *Fulfills Global Cultural Diversity Requirement.*

# INTERNATIONAL STUDIES (INST)

Associate Professor: Payne (Coordinator)

- Major: International Studies
- Tracks: Transnational and Global, Developed Countries, Developing Countries
- Courses required for major: 10
- Capstone requirement: INST 449

The International Studies major is a ten-course interdisciplinary major. It includes a core set of six courses which every student must take. The core courses draw from five different departments and provide students with a truly interdisciplinary experience. This core is combined with a flexible set of electives, which simultaneously prepares students to meet their individual future goals. Specifically, students can complete the final four courses of the major in one of three ways: (1) they may take a more general approach in which they take courses which focus on broad transnational and global issues or they may choose to pursue either the (2) Developed Countries Area focus or the (3) Developing Countries Area focus.

The program is intended to prepare students either for graduate study or for careers which have an international component. International obligations are increasingly assumed by government agencies and a wide range of business, social, religious, and educational organizations. Opportunities are found in the fields of journalism, publishing, communications, trade, banking, advertising, management, and tourism. The program also offers flexible career preparation in a variety of essential skills, such as research, data analysis, report writing, language skills, and the awareness necessary for dealing with people and institutions from another culture. Preparation for related careers can be obtained through the guided selection of courses outside the major in the areas of business, economics, modern language studies, political science, history, and international relations or through a second major. Students should design their programs in consultation with members of the Committee on International Studies.

The International Studies program also encourages participation in study abroad programs such as the affiliate programs in England, France, Germany, and Spain, as well as the Washington Semester.

## Major Requirements

The major consists of ten courses, comprised of a core set of six required courses and four electives.

**Core Courses:** All students must complete ECON 343, HIST 116, PSCI 160, INST 449, and two FRN, GERM, SPAN courses at the 221 level or above (excluding 311).

**Electives:** Students must complete the major by taking four electives in one of the following three areas: Transnational and Global Issues, Developed Countries, or Developing Countries.

**Option 1: Transnational & Global Issues**

Choose four courses from at least two departments.

|          |                                   |
|----------|-----------------------------------|
| ANTH 103 | Cultural Anthropology             |
| ANTH 334 | Economic Anthropology             |
| BUS 333  | Global Business Strategies        |
| HIST 329 | Empires and Resistance            |
| PHIL 334 | Contemporary Political Philosophy |
| PSCI 242 | Human Rights                      |
| PSCI 261 | International Organizations       |
| PSCI 341 | Gender and the Law                |
| PSCI 362 | Terrorism                         |
| REL 110  | Introduction to World Religions   |

**Option 2: Developed Countries**

Choose four courses from at least two departments.

|          |                        |
|----------|------------------------|
| FRN 311  | Francophone Cultures   |
| GERM 311 | Modern Germany         |
| HIST 214 | Monarchy and Modernity |
| HIST 217 | 20th Century Europe    |
| PHIL 203 | Modern Philosophy      |
| PSCI 140 | Comparative Politics   |
| SPAN 311 | Hispanic Culture       |

**Option 3: Developing Countries**

Choose four courses from at least two departments.

|          |                                           |
|----------|-------------------------------------------|
| ANTH 230 | Anthropology of Latin America             |
| ARHI 342 | Art and Politics in Latin America         |
| FRN 311  | Francophone Culture                       |
| HIST 221 | Latin American History                    |
| HIST 232 | The Rise of Islam                         |
| HIST 243 | Asia in a Global Context                  |
| HIST 246 | Africa and the World                      |
| PSCI 245 | Latin American Politics                   |
| PSCI 260 | Globalization and Sustainable Development |
| PSCI 342 | Civil Conflict                            |
| REL 211  | Judaic Studies: Talmud to Today           |
| REL 212  | Islam                                     |
| REL 225  | Asian Religions                           |
| SPAN 311 | Hispanic Culture                          |

**Capstone Requirement**

All majors must successfully complete INST 449.

**INST 449****SENIOR SEMINAR**

A one-semester seminar, taken in the senior year, in which students and several faculty members pursue an integrative topic in the field of international studies. Some independent work involved.

*Prerequisite: Consent of instructor.*



**LATIN (See Religion)**

# **LATIN AMERICAN STUDIES**

Associate Professors: Adams (Coordinator), Varona (Coordinator)

The Latin American Studies minor combines the humanities, social sciences, and language study. It equips students with opportunities to improve oral communication, research, writing, critical thinking, and cultural competency. These skills are central to a well-rounded liberal arts education and are highly valued in the professional world.

## **Minor Requirements**

This interdisciplinary minor includes coursework from Anthropology, Archaeology, History, Political Science, and Spanish and requires six courses in three areas: (1) Spanish, (2) History and Social Context, and (3) Culture.

Two Spanish courses numbered SPAN 111 or higher

One course in Latin American History and Social Context from this list:

- EDUC 233 Teaching Culturally and Linguistically Diverse Learners in the Dominican Republic
- HIST 221 Latin America
- HIST 329 Empires and Resistance
- PSCI 242 Human Rights
- PSCI 245 Latin American Politics
- PSCI 260 Globalization and Sustainable Development
- PSCI 341 Gender and the Law
- SOC 334 American Immigration

The following courses could also count as History and Social Context electives when offered as a Latin American-specific topic and with approval from the Academic Standards Committee: HIST 245 Special Topics, HIST 345 Special Topics, PSCI 249 Special Topics in Comparative Politics, SPAN 311 Hispanic Culture, SPAN 321 Special Topics, or SPAN 426 Special Topics.

One course in Latin American Culture from this list:

- ANTH 103 Cultural Anthropology
- ANTH 230 Anthropology of Latin America
- ARCH 231 Mesoamerican Cultures and Society
- ARHI 342 Art and Politics in Latin America
- FILM 212 Multicultural America on Screen

The following courses could also count as Culture electives when offered as a Latin American-specific topic and with approval from the Academic Standards Committee: ANTH 320 Special Topics, ARHI 320 Special Topics, SPAN 311 Hispanic Culture, SPAN 321 Special Topics, or SPAN 426 Special Topics.

Two additional courses from either the Latin American History and Social Context list or the Latin American Culture list.

Students are encouraged to explore study abroad opportunities and contact the program coordinators for assistance with course selection.

# LEGAL STUDIES (LGST)

Assistant Professor: S. Achury (Coordinator)

- Major: Legal Studies
- Courses required for major: 10
- Capstone requirement: LGST 401
- Minors: Legal Studies

The major is designed to enhance understanding of how law operates through interdisciplinary perspectives, integrating law-related offerings in accounting, anthropology, criminal justice, history, political science, philosophy, and religion. The interdisciplinarity of the major aims to equip students with critical thinking, analytical reasoning, and ethical decision-making skills, fostering a deeper understanding of the role of law in shaping public policy and societal norms. Additionally, the program emphasizes experiential learning, integrating opportunities for internships, community-based learning opportunities, and hands-on engagement with legal professionals, providing students with practical experience that complements their academic coursework, bridging theory and practice.

## Major Requirements

A major in Legal Studies consists of ten courses as follows:

### Five Core Courses

These courses offer students a theoretical and methodological framework for understanding how the law shapes public policy and societal norms.

### Select one course from the following:

|          |                                      |
|----------|--------------------------------------|
| PHIL 120 | Introduction to Moral Philosophy     |
| PHIL 125 | Introduction to Political Philosophy |

### Required:

|          |                                    |
|----------|------------------------------------|
| PHIL 225 | Symbolic Logic                     |
| PSCI 130 | The American Legal System          |
| PSCI 232 | Constitutional Law                 |
| LGST 401 | Applied Legal Research and Writing |

### Five Elective Courses

Students must take five elective courses distributed among the following groups.

#### A. Law and Justice (select one course)

|          |                                               |
|----------|-----------------------------------------------|
| CJCR 210 | Introduction to the Administration of Justice |
| CJCR 211 | Ethics in Criminal Justice                    |

|          |                                 |
|----------|---------------------------------|
| CJCR 243 | Courts and Sentencing           |
| HIST 338 | Rights, Reform, and Protest     |
| PSCI 242 | Human Rights                    |
| PSCI 239 | Special Topics in Legal Studies |
| PSCI 331 | Civil Rights and Liberties      |
| REL 237  | What is Justice?                |

**B. Philosophical Foundations of Law (select one course)**

|          |                                          |
|----------|------------------------------------------|
| PHIL 318 | Philosophical Issues in Criminal Justice |
| PHIL 334 | Contemporary Political Philosophy        |
| PHIL 336 | Contemporary Moral Philosophy            |

When the topic is relevant to legal studies, the program will support an ASC appeal for PHIL 340 as an elective in this category.

**C. Law and Diverse Communities (select one course)**

|          |                               |
|----------|-------------------------------|
| ANTH 334 | Economic Anthropology         |
| ANTH 311 | Power and Prestige            |
| CJCR 346 | Comparative Criminal Justice  |
| CJCR 334 | Race, Class, Gender and Crime |
| HIST 342 | Women and Reform              |
| PSCI 341 | Gender and the Law            |

**D. Electives (select any two additional courses from elective lists A, B, C, or D)**

|              |                                            |
|--------------|--------------------------------------------|
| ACCT 110     | Financial Accounting                       |
| ACCT 235     | Legal Principles                           |
| ACCT 225     | Budgeting and Financial Statement Analysis |
| ACCT 236     | Legal and Ethical Issues for Accountants   |
| BUS 238      | Fundamentals of Financial Management       |
| BUS 310      | Human Resources Management                 |
| BUS 315      | Privately Owned Business Management        |
| CMS 211      | Public Speaking                            |
| CMS 349      | Political Communication                    |
| CJCR 448/449 | Criminal Justice Practicum I/II            |
| ECON 332     | Government and the Economy                 |
| ECON 337     | Public Economics                           |
| ECON 225     | Environmental Economics                    |
| ECON 335     | Labor Economics                            |
| ECON 343     | International Trade                        |
| HIST 125     | US to 1877                                 |
| HIST 126     | US Since 1877                              |
| HIST 324     | Early American Law and Society             |
| LGST 201     | Foundations of Trial Advocacy              |
| LGST 202     | Fundamentals of Legal Reasoning            |
| LGST 301     | Anatomy of a Criminal Trial                |

|          |                                |
|----------|--------------------------------|
| LGST 448 | Legal Studies Practicum        |
| PSCI 259 | Criminal Law                   |
| PSCI 339 | Judicial Politics and Behavior |
| PSY 116  | Abnormal Psychology            |
| PSY 216  | Abnormal Child Psychology      |
| PSY 211  | Learning Disabilities          |
| PSY 237  | Cognition                      |
| PSY 242  | Drugs, Behavior, and Society   |
| PSY 310  | Forensic Psychology            |

Students interested in applying to law school are recommended to take some of the following electives: LGST 201, 202, 301, and 448.

Students interested in corporate law or interested in running their own firm are recommended to take some of the following electives: ACCT 110, 225; BUS 238, 310, 315; ECON 332, 337, 225, 335, and 343.

### **Capstone Requirement**

All majors must successfully complete LGST 401 Applied Legal Research and Writing.

### **Minor Requirements**

A minor in Legal Studies consists of five courses as follows: PHIL 120 or 125; PSCI 130; three additional courses that count toward the Legal Studies major numbered 200 or higher from a minimum of two prefixes.

#### **201**

##### **FOUNDATIONS OF TRIAL ADVOCACY**

How does the adversarial system ensure fairness in legal proceedings, and what role do trial advocacy skills play in upholding justice? This course presents an overview of the foundations of the adversarial system, explains the rules of evidence, and teaches the principles that govern direct and cross-examinations. Through hands-on exercises, students practice opening statements, witness examinations, objections, and closing arguments. The course culminates in a mock trial, in which students take on the roles of attorneys and witnesses in a simulated courtroom.

#### **202**

##### **FUNDAMENTALS OF LEGAL REASONING**

Emphasizes developing essential tools for legal analysis through skills in logical reasoning and reading comprehension. Students examine case law and statutes in class discussions and problem-solving exercises to improve their ability to identify logical fallacies and construct persuasive arguments. *Prerequisite: PHIL 225 or consent of instructor.*

**301****ANATOMY OF A CRIMINAL TRIAL**

Much of what the public knows about criminal trials is learned from watching television. This course dissects the criminal trial process, beginning with when charges are initially filed, to pre-trial hearings, the trial and verdict, and then concludes with post-trial motions and appeals. The role of the judge, defense attorney, and prosecutor is explored in depth. Additional topics include trial preparation and advocacy, how evidence is used in trials, and how sentences are developed. Over the course of the semester, students analyze specific cases to understand how this process is carried out. *Prerequisite: PSCI 130 or consent of instructor.*

**401****APPLIED LEGAL RESEARCH AND WRITING**

Designed to develop the skills needed to find, read, and analyze legal sources in order to write persuasive briefs, memoranda, and pleadings. Prepares students to attend law school or work in the legal profession. *Prerequisite: PSCI 130 or consent of instructor.*

**448****LEGAL STUDIES PRACTICUM**

This experiential course places students in legal environments, such as law firms, courts, or advocacy organizations, enabling them to apply classroom knowledge to real-world legal practices. *Prerequisite: Junior or senior status and successful completion of the practicum application.*

## LYCOMING SCHOLARS PROGRAM (SCHOL)

Professor: Chandler (Director)

The Lycoming College Scholars Program is a special program designed to meet the needs and aspirations of highly motivated students of superior intellectual ability. Lycoming Scholars also participate in special interdisciplinary seminars and in an independent study culminating in a senior presentation. The Lycoming Scholars Seminar is a 1 credit course and does not result in overload charges for full-time students.

### **Scholars-Level Distribution Requirements**

Lycoming Scholars satisfy the College's Distribution Requirements with more challenging courses than students not in the Lycoming Scholars Program are required to complete.

Substitutions to the Distribution Requirements for Lycoming Scholars can be made only by successful application to the Committee on Academic Standards with a supporting signature by the Lycoming Scholars Council Director. In the case of transfer students and those who seek to enter the program at the sophomore level or higher and in other cases deemed by Lycoming Scholars Council to involve special or extraordinary circumstances, Lycoming Scholars Council shall make adjustments to the Lycoming Scholars Distribution Requirements provided that in all cases such exceptions and adjustments would still satisfy the regular College Distribution Requirements.

### **Lycoming Scholars Seminars**

Team-taught interdisciplinary seminars are held every semester under the direction of the Lycoming Scholars Council. They meet for one hour each week (Tuesdays at noon) and carry one hour of credit. Lycoming Scholars are required to successfully complete five seminars, and they are permitted to register for as many as eight. Topics for each academic year will be selected by the Lycoming Scholars Council and announced before spring registration of the previous year.

Students must be accepted into the Scholars Program before they enroll in a Lycoming Scholars Seminar. Scholars are strongly urged to register for at least one seminar during their first year.

### **Senior Project**

In their junior or senior year, Lycoming Scholars must successfully complete an independent study or departmental honors project which has been approved in advance by the Independent Studies Committee and Lycoming Scholars Council. This project must be presented orally as part of the Senior Lycoming Scholars Seminar and be accepted by Lycoming Scholars Council.

### **301**

#### **LYCOMING SCHOLARS SEMINAR**

Team taught interdisciplinary seminar held each semester under the direction of the Lycoming Scholars Council. May be repeated for credit. Completion of five semesters is required by the Lycoming Scholars Program. *Prerequisite: Acceptance into the Lycoming Scholars Program. 1 credit.*



**450****SENIOR LYCOMING SCHOLARS SEMINAR**

Lycoming Scholars complete independent studies or departmental honors projects. These projects are presented to scholars and faculty in the senior seminar. Completion of two semesters, typically during the senior year, is required by the Lycoming Scholars Program.

*Prerequisite: Acceptance into the Lycoming Scholars Program. Non-credit course.*

## **MATHEMATICAL FINANCE (See Business)**

## MATHEMATICAL SCIENCES (CPTR, MATH)

Assistant Professors: Belhachemi, Brandon, Pillai, Rublein, M. Smith (Chair)

Lecturers: Reed, G. Smith

Instructor: Cowden

- Majors: Applied Computer Science and Mathematics
- Courses required for both majors: 10 (not including zero or 1 credit courses)
- Math prerequisite for Math majors (not counted in major): placement out of or C- or better in MATH 127
- Math prerequisite for Applied Computer Science majors (not counted in major): placement out of or C- or better in MATH 127
- Non-credit Colloquium for Math: At least 3 semesters of MATH 449
- Capstone requirement for Math: One course from MATH 441, 442, 443, 444, or 445
- Capstone requirement for Applied Computer Science: CPTR 400
- Minors: Computational Science, Computer Science, Mathematics

The Department of Mathematical Sciences offers major programs in applied computer science and mathematics and minor programs in computer science, computational science, and mathematics. Interested students may want to investigate the interdisciplinary actuarial science major as well.

## APPLIED COMPUTER SCIENCE (CPTR)

The Department of Mathematical Sciences offers a major in Applied Computer Science. The Applied Computer Science major balances theory and practice. Students majoring in this field are prepared for jobs in software engineering, applications development, web development, mobile development, machine learning / data science, or database administration. The major consists of 10 courses:

### Seven Core Courses

|          |                                                                    |
|----------|--------------------------------------------------------------------|
| CPTR 125 | Introduction to Computer Science                                   |
| CPTR 126 | Operating System Concepts                                          |
| CPTR 246 | Principles of Object-Oriented Programming                          |
| CPTR 247 | Data Structures and Algorithms                                     |
| CPTR 400 | Software Engineering                                               |
| MATH 128 | Calculus with Analytic Geometry I                                  |
| MATH 216 | Discrete Mathematics <u>or</u> MATH 234 Foundations of Mathematics |

Any course counted or substituted for one of the seven core courses may not be used to fulfill the major electives requirement for this degree plan.

### Three Required Electives

Students must take three additional courses from the lists of approved courses below, at least one of which must be a CPTR course. Interdisciplinary electives allow students to explore the business, social, political, and design principles inherent in the field.

### Computer Science Electives

Any additional CPTR course numbered 200 or higher

Interdisciplinary Electives (may select up to two)

|           |                                                      |
|-----------|------------------------------------------------------|
| ACCT 320  | Accounting Information Systems                       |
| ART 213   | Introduction to 3D Character Animation               |
| ART 240   | Digital Photography I                                |
| ART 243   | Introduction to Digital Media                        |
| ART 313   | Advanced Topics in 3D Animation                      |
| ART 340   | Digital Photography II                               |
| BUS 352   | Decision Making                                      |
| BUS 438   | Financial Modeling                                   |
| ECON 241  | Introduction to Economic Research                    |
| ECON 340  | Econometrics                                         |
| ECON 347  | Game Theory                                          |
| ENV 215   | Introduction to Geographic Information Systems (GIS) |
| FVA 200   | Digital Film and Video I                             |
| FVA 220   | Sound for the Screen                                 |
| FVA 300   | Digital Film and Video II                            |
| MATH 231  | Differential Equations                               |
| MATH 234  | Foundation of Mathematics                            |
| MATH 345  | Computational Graph Theory                           |
| MATH 434  | Abstract Algebra                                     |
| MATH 442  | Numerical Analysis                                   |
| MATH 443  | Linear Algebra                                       |
| MATH 444  | Partial Differential Equations                       |
| MATH 445  | Graph Theory                                         |
| PHIL 225  | Symbolic Logic                                       |
| PHIL 3335 | Philosophy of Mind and Cognitive Science             |
| PHYS 331  | Classical Mechanics                                  |
| PHYS 336  | Math Methods of Physics                              |
| PHYS 341  | Electronics                                          |
| PHYS 345  | Experimental Physics                                 |
| PHYS 435  | Nonlinear and Complex Systems                        |
| PHYS 445  | Data Analysis for Physics                            |

## Minor Requirements

The Department of Mathematical Sciences offers two computing minors: Computational Science and Computer Science. Computational science is the study of the application of computation to the sciences. The minor in computational science provides students with a core understanding of computer-based problem solving and prepares them to apply that computational thinking in their chosen discipline.

A minor in **Computational Science** consists of MATH 216; CPTR 125, 246, and 247; one of CPTR 345, 339, MATH 231, 342, or 442; and an approved computational research project in the student's major discipline which can be fulfilled through ASTR/PHYS 448, BIO 447, CHEM 449, Independent Study, Honors Project, Research Experience for Undergraduates (REU), or other research experience.

A minor in **Computer Science** consists of MATH 216; CPTR 125, 246, 247, and two courses chosen from computer science courses numbered 220 or above or MATH 342 or 442.

## 102

### INTRODUCTION TO VIRTUAL WORLDS

Using Carnegie Mellon's *Alice* software, students create 3-D animations for both storytelling and gaming applications. Class time in this project-based course is roughly split one-third demonstration/lecture and two-thirds hands-on project development. Topics include storyboarding, object-oriented modular construction, decision and repetition control structures, and event handling. *2 credits.*

## 124

### PROGRAMMING FOR DATA SCIENCE

This course introduces students to the structure and use of a dynamically typed computer programming language and exposes students to the basics of computational thinking. It covers topics in data representation, implementation of mathematically correct control and data flow through a program, the algorithmic representation of a problem, and covers concepts of procedural programming. The course introduces students to mathematical and logical operators, and the implementation of propositional and predicate logic using code. In addition, an introduction to data visualization and effective use of basic statistical functions are covered. This introductory course is intended for non-majors in Computer Science. *Prerequisites: Math placement level 2 or higher; MATH 106 or higher; or consent of instructor.*

## 125

### INTRODUCTION TO COMPUTER SCIENCE

Introduction to the discipline of computer science with emphasis on programming utilizing an object-oriented high-level programming language. Topics include algorithms, program structure, and problem solving techniques. Includes laboratory experience. *Prerequisite: Math placement of level 4 or credit for MATH 115 or 127.*

**126**

**OPERATING SYSTEM CONCEPTS**

An introduction to the design and implementation of modern operating systems. The topics include processes, threads, mutual exclusion, synchronization, memory management, virtual memory, processor scheduling, disk management, input and output, virtualization, multiprocessor systems, and security issues. This is a projects-based course where students implement programming assignments using a procedural language. *Prerequisite: A grade of C- or better in CPTR 125.*

**246**

**PRINCIPLES OF OBJECT-ORIENTED PROGRAMMING**

Principles of effective programming based on concepts of inheritance, encapsulation, abstract classes, enumerations, inner classes, interfaces, and generic types and lists. Specifies abstract data types using various constructs provided by the programming language. Topics include functional programming using lambda expressions, polymorphism using various features provided by the collections framework, recursion and its applications, and exception handling frameworks. Includes laboratory experience. *Prerequisite: A grade of C or better in CPTR 125.*

**247**

**DATA STRUCTURES AND ALGORITHMS**

Covers data abstraction and analysis of algorithms associated with data structures and emphasizes efficiency of algorithms. Topics includes bags, queues, stacks, Elementary and linearithmic sorting algorithms, elementary symbol tables, binary search trees, balanced search trees, and hash tables. *Prerequisite: A grade of C- or better in CPTR 246 or consent of instructor.*

**300**

**COMPUTER ARCHITECTURE**

An introduction to computer abstractions and language, representation of instructions and data, arithmetic in hardware, the structure of the processor, memory, and cache design. Also covers parallel processors, RISC and CISC architectures, and graphical processing units. *Prerequisite: A grade of C- or better in CPTR 125.*

**310**

**PRINCIPLES OF 2-D GAME DESIGN**

An introduction to the design and implementation of a typical game engine and concepts of 2-D animation. Topics include event-driven programming, multi-tasking, introduction to a modern windowing toolkit, coding to a framework, design patterns, sprite creation, animation, and design and implementation of fully functional 2-D games. This course is lab-based where students implement projects covering relevant topics. *Prerequisite: CPTR 246 or consent of instructor.*

**320**

**MOBILE APPLICATION DEVELOPMENT**

A project-oriented course introducing students to an industry standard framework. Topics covered include interface design, Application Programmer Interface usage, and the design of fully functional mobile applications using a modern object-oriented programming language. *Prerequisite: CPTR 246.*

**322****INTRODUCTION TO WEB-BASED PROGRAMMING**

Intermediate programming on the World Wide Web. Topics include client/server issues in Web publishing and current programming languages used in Web development. Includes laboratory experience. *Prerequisite: CPTR 125.*

**324****AUTOMATA, FORMAL LANGUAGES, AND COMPUTABILITY**

The study of finite state machines, pushdown stacks, and Turing machines along with their equivalent formal language counterparts. Topics include results on computability, including results regarding the limits of computers and specific problems that cannot be solved.

*Prerequisite: MATH 216 or 234. Cross-listed as MATH 324. Alternate years.*

**339****INTRODUCTION TO DATABASE SYSTEMS**

An introduction to the relational database model and SQL. Topics include but are not limited to relational model of data; ER diagrams; schema; SQL commands for table construction, updating, and querying; transaction processing; and database integrity. Includes laboratory experience. *Prerequisite: CPTR 125.*

**340****ARTIFICIAL INTELLIGENCE**

An introduction to generic intelligent agents, techniques in problem solving, knowledge representation and reasoning, problem solving by searching, the structure of adversarial games, and constraint satisfaction problems. Topics include first order logic, probabilistic reasoning, and the philosophical and ethical aspects of AI. This course introduces the student to machine learning, computer vision, and robotics and provides an overview of deep learning for natural language processing. *Prerequisite: CPTR 246.*

**345****INTRODUCTION TO COMPUTER GRAPHICS**

An introduction to graphics software with emphasis on the algorithms, data structures, and application programming interfaces that support the creation of two and three dimensional image generation and animation. *Alternate years.*

**400****SOFTWARE ENGINEERING**

Covers principles of software metrics and identification of key performance indicators and provides a comparative study of various software development life cycles. Topics include software testing and frameworks used for integration and unit testing, frameworks used for revision control and management of cooperative work environments, generating requirements specifications, Unified Modeling Language (UML), interactive graphs, and design patterns. Students develop an application as the capstone project. *Prerequisite: CPTR 247.*

**410****PARALLEL AND CONCURRENT COMPUTING**

Offers an introduction to patterns of concurrent computations and theoretical models. This course covers processes, threads, concurrent architectures, Amdahl's law, Gustafson-Barsis's law, multi-threading, and thread pools concepts. Topics include shared variables, race conditions, concurrent computing paradigms, and synchronization issues in concurrent programming. Explores Critical Section, Deadlock, Livelock, resource starvation and theoretical models to study situations. This course covers additional topics such as the dining philosopher's problem, Lamport's Bakery Algorithm, Byzantine general's problem, design of Semaphores, Mutexes, Monitors, and similar models. *Prerequisite: CPTR 247.*

**470****INTERNSHIP****N80-N89****INDEPENDENT STUDY****490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS****MATHEMATICS (MATH)****Major Requirements**

A major in mathematics consists of CPTR 125, MATH 128 (or exemption by examination), 129 (or exemption by examination), 130, 234, 238, 432, 434, one from 441, 442, 443, 444, or 445, and one additional MATH course numbered 200 or above. In addition, students are required to take at least three semesters of MATH 449.

Students interested in teacher certification should refer to the Department of Education listings. These students should take MATH 230 as their additional course.

**Capstone Requirement**

All majors must successfully complete one course from 441, 442, 443, 444, or 445.

**Minor Requirements**

A minor in mathematics consists of MATH 128 (or exemption by examination), 129 (or exemption by examination), 130, 234, 238, and one additional 4-credit course selected from CPTR 125, MATH 123, or any mathematics course numbered 200 or above.

**100****BASIC ALGEBRA**

Arithmetic with integers and rational numbers, solving linear equations, graphing linear equations, solving linear systems, exponents and polynomials, factoring, rational expressions and



equations, radical expressions and equations, completing the square and the quadratic formula. *Open only to students with math placement of level 1 or 2. 2 credits.*

#### **104**

##### **STATISTICAL LITERACY**

A conceptual survey of sampling methods, descriptive statistics, and inferential statistics with an emphasis on active learning and simulation. This course is intended for students in MATH 100 who need a two-credit companion course, teacher certification candidates who need an additional two-credit math course, and social science majors who will eventually take introductory statistics. *This course does not satisfy the statistics requirements for any major or minor and does not count for mathematics Distribution. Prerequisite: Math placement of level 2, 3, or 4; MATH 100; or concurrent enrollment in MATH 100. 2 credits. Offered every spring.*

#### **106**

##### **COMBINATORICS**

An introduction to the analysis of counting problems. Topics include permutations, combinations, binomial coefficients, inclusion/exclusion principle, and partitions. The nature of the subject allows questions to be posed in everyday language while still developing sophisticated mathematical concepts. *Prerequisite: Math placement of level 2, 3, 4, or credit for MATH 100.*

#### **109**

##### **APPLIED ELEMENTARY CALCULUS**

An intuitive approach to the calculus concepts with applications to business, biology, and social-science problems. Not open to students who have completed MATH 128. *Prerequisite: Math placement of level 2, 3, 4, or credit for MATH 100.*

#### **112**

##### **FINITE MATHEMATICS FOR DECISION-MAKING**

An introduction to some of the principal mathematical models, not involving calculus, which are used in business administration, social sciences, and operations research. Includes both deterministic models such as graphs, networks, linear programming and voting models, and probabilistic models such as Markov chains and games. *Prerequisite: Math placement of level 2, 3, 4, or credit for MATH 100.*

#### **115**

##### **APPLIED DISCRETE MATHEMATICS**

Introduction to discrete structures and their applications in computer science. Topics include elementary logic, discrete number systems, elementary combinatorial theory, finite automata, formal language constructs, and general algebraic structures including Boolean algebras, graphs, and trees. Laboratory experience is included using current software. *Prerequisite: Math placement of level 2, 3, 4, or credit for MATH 100.*

#### **123**

##### **INTRODUCTION TO STATISTICS**

Topics include tabular and graphical descriptive statistics, discrete and continuous probability distributions, Central Limit Theorem, one- and two-sample hypotheses tests, analysis of

variance, chi-squared tests, nonparametric tests, linear regression, and correlation. Other topics may include index numbers, time series, sampling design, and experimental design. Also includes some use of statistical software. *Prerequisite: Math placement of level 2, 3, 4, or credit for MATH 100.*

## **127**

### **PRECALCULUS MATHEMATICS**

The study of polynomial, rational, exponential, logarithmic, and trigonometric functions, their graphs and elementary properties. This course is an intensive preparation for students planning to take Calculus (MATH 128-129) or those whose major specifically requires Precalculus. This course is taught solely as a review of topics which must be mastered by students who intend to take MATH 128. *Prerequisite: Math placement of level 3 or 4 or credit for MATH 100. May not be used to satisfy Distribution Requirements.*

## **128**

### **CALCULUS WITH ANALYTIC GEOMETRY I**

Differentiation and integration of algebraic functions, conic sections and their applications, graphing plane curves, applications to related rate and external problems, areas of plane regions, volumes of solids of revolution, and other applications. *Prerequisite: Math placement of level 4 or a grade of C- or better in MATH 127.*

## **129**

### **CALCULUS WITH ANALYTIC GEOMETRY II**

Differentiation and integration of trigonometric, exponential, logarithmic, and transcendental functions and their inverses; volumes, arc-length, surface-area, and other applications; techniques of integration including integration by parts, partial fractions, trigonometric substitutions first order differential equations; numerical integration; L'Hôpital's Rule, improper integrals and their convergence, parametric equations and plane polar coordinates; infinite sequences and series, and tests for convergence. *Prerequisite: exemption from or a grade of C- or better in MATH 128.*

## **130**

### **MODELLING WITH MATRICES**

Topics include matrix and vector arithmetic, systems of linear equations, applications of linear systems, matrix and vector geometry, linear programming, and eigenvectors/eigenvalues. This course emphasizes applications over theory and includes substantial work with Microsoft Excel. This course is intended for students in any major. *Prerequisite: Math placement level 2 or higher; MATH 106 or higher; or consent of instructor.*

## **140**

### **HISTORY OF MATHEMATICS**

Explores the mathematics of past civilizations and cultures such as ancient Egypt, Babylon, China, Greece, and India along with Mayan, Incan, and Arabic mathematics leading up to the invention of calculus in Western Europe. Specific attention will be given to the various mathematical tools and techniques used by ancient and modern civilizations. This course includes learning logical thinking, analytical skills, and effective decision-making through

practical or abstract applications. *Prerequisite: Math placement of level 2, 3, or 4, or credit for MATH 100. Fulfills Global Cultural Diversity Requirement. Credit may not be earned for both MATH 140 and 240.*

## **214**

### **MULTIVARIABLE STATISTICS**

The study of statistical techniques involving several variables. Topics include confidence intervals and hypothesis tests about means and variances, confidence intervals and hypothesis tests with simple and multiple linear regression and correlation, assessing appropriateness of linear regression models, one- and two-way analysis of variance with post hoc tests, analysis of covariance, and analysis of contingency tables. Other topics may include discriminant analysis, cluster analysis, factor analysis, and canonical correlations, repeated measure designs, time series analysis, and nonparametric methods. Also includes extensive use of a statistical package (currently SPSS). *Prerequisite: A grade of C- or better in MATH 123, or a grade of C- or better in both MATH 128 and any mathematics course numbered 129 or above, or consent of instructor.*

## **216**

### **DISCRETE MATHEMATICS**

An introduction to discrete structures. Topics include formal logic, proofs, induction, number theory, recursion, analysis of algorithms, sets, combinatorics and probability, relations, functions and matrices, graphs and trees, graph algorithms, computer logic, and languages, as well as an introduction to declarative programming. This course introduces the students to regular expression processing using a standard application programming interface. *Prerequisite: CPTR 125 or consent of instructor.*

## **230**

### **GEOMETRY AND STATISTICS FOR TEACHERS**

Designed for mathematics majors pursuing secondary certification in mathematics, this course covers the geometry and statistics necessary to be able to teach these subjects. Topics in geometry include the basics of geometry, segments and angles, parallel and perpendicular lines, triangles, triangle congruence, quadrilaterals, similarity, area of plane figures, volume and surface area of three-dimensional figures, right triangle trigonometry, circles, and transformations. Topics in statistics include graphical displays, descriptive statistics, correlation and regression, data collection, basic probability, conditional probability and independence, the binomial and normal distributions, estimation, confidence intervals, hypothesis tests, two sample problems, and chi-square tests. Students prepare lessons and teach this material to their peers, as though they were a high school teacher. *Prerequisites: A grade of B- or better in MATH 127 or Level 4 Placement. Alternate years.*

## **231**

### **DIFFERENTIAL EQUATIONS**

A study of ordinary differential equations and linear systems. Solution techniques include reduction of order, undetermined coefficients, variation of parameters, Laplace transforms, power series, and eigenvalues and eigenvectors. May also include an introduction to numerical methods. *Prerequisite: A grade of C- or better in MATH 129. MATH 130 recommended.*

**233****COMPLEX VARIABLES**

Complex numbers, analytic functions, complex integration, Cauchy's theorems and their applications. *Corequisite: MATH 238. Alternate years.*

**234****FOUNDATIONS OF MATHEMATICS**

Topics include symbolic logic, elementary proof methods, combinatorics, set theory, and mathematical induction. Students also learn a state of the art markup language for typesetting mathematical documents. This course serves as a bridge from elementary calculus to advanced courses in algebra and analysis. *Prerequisite: A grade of C or better in two of CPTR 125, MATH 128, 129, or 130.*

**238****MULTIVARIABLE CALCULUS**

Algebra, geometry, and calculus in multidimensional Euclidean space; n-tuples, matrices; lines, planes, curves, surfaces; vector functions of a single variable, acceleration, curvature; functions for several variables, gradient; line integrals, vector fields, multiple integrals, change of variable, areas, volumes; Green's theorem. *Prerequisite: A grade of C- or better in MATH 129.*

**240****ADVANCED HISTORY OF MATHEMATICS**

Explores the mathematics of past civilizations and cultures such as ancient Egypt, Babylon, China, Greece, and India along with Mayan, Incan, and Arabic mathematics leading up to the invention of calculus in Western Europe. Specific attention will be given to the various mathematical tools and techniques used by ancient and modern civilizations. This course is designed for students majoring or minoring in STEM fields and will have a specific focus on how mathematical advances from various civilizations have had a profound effect on modern mathematics, including ideas found in Calculus. *Prerequisite: A grade of C- or better in MATH 128. Fulfills Global Cultural Diversity Requirement. Credit may not be earned for both MATH 140 and 240.*

**324****AUTOMATA, FORMAL LANGUAGES, AND COMPUTABILITY**

The study of finite state machines, pushdown stacks, and Turing machines along with their equivalent formal language counterparts. Topics include results on computability, including results regarding the limits of computers and specific problems that cannot be solved. *Prerequisite: MATH 216 or 234. Cross-listed as CPTR 324. Alternate years.*

**325****THEORY OF INTEREST WITH APPLICATIONS**

A calculus-based study of topics in interest and financial mathematics that appear on the Actuarial Exam FM. Topics include the time value of money, annuities with non-contingent payments, loans, bonds, and general asset-liability management. Explores the mathematical theory of interest in both finite and continuous time, with some applications to economics and finance. *Prerequisite: A grade of C or better in MATH 129. Alternate years.*

**332****MATHEMATICAL STATISTICS I**

A study of probability, discrete and continuous random variables, expected values and moments, univariate distributions, joint distributions, marginal distributions, correlation. *Corequisite: MATH 238. Alternate years.*

**333****MATHEMATICAL STATISTICS II**

A thorough review and extension of the topics taught in MATH 332 in preparation for the Actuarial Exam P. Students who take this course will be prepared for, and are expected to sit for Actuarial Exam P. *Prerequisites: MATH 332. Alternate years.*

**338****OPERATIONS RESEARCH**

Queuing theory, including simulations techniques, optimization theory, including linear programming, integer programming, and dynamic programming; game theory, including two-person zero-sum games, cooperative games, and multiperson games. *Prerequisite: MATH 112 or 130. Alternate years.*

**345****COMPUTATIONAL GRAPH THEORY**

Introduces students to the fundamental concepts and ideas in graph theory, including subgraphs, trees, connectivity, optimization, covers, connectivity, vertex and edge colorings, and embeddings. Applications discussed include topics such as tournament scheduling, spanning trees, Kuratowski's Theorem, and embeddings on surfaces. This course emphasizes computational graph theory as it relates to modeling, computer science, and other fields. This course is an option for Mathematics majors who will take a capstone other than MATH 445. *Prerequisites: A grade of C- or better in either MATH 238 or CPTR 247, or consent of the instructor. Credit may not be earned for both MATH 345 and MATH 445.*

**432****REAL ANALYSIS**

An introduction to the rigorous analysis of the concepts of real variable calculus in the setting of normed spaces. Topics from: topology of the Euclidean plane, completeness, compactness, the Heine-Borel theorem; functions on Euclidean space, continuity, uniform continuity, differentiability; series and convergence; Riemann integral. *Prerequisites: MATH 238 and a grade of C- or better in MATH 234.*

**434****ABSTRACT ALGEBRA**

An introduction to the commutative, associative, well-defined, closure, identity and inverse properties, which are the six defining properties of an Abelian Group. Explores several examples and non-examples of groups of numbers, matrices, subsets, integers mod  $n$ , functions, permutations and symmetries, as well as algebraic concepts that are universally true in all groups. Places a substantial emphasis on writing and revising formal mathematical proofs. *Prerequisites: A grade of C- or better in both*

*MATH 130 and MATH 234.*

### **438**

#### **SEMINAR**

Topics in modern mathematics of current interest to the instructor. A different topic is selected each semester. Designed to provide junior and senior mathematics majors and other qualified students with more than the usual opportunity for concentrated and cooperative inquiry.

*Prerequisite: Consent of instructor. 2 credits. May be repeated for credit when topics are different.*

### **341, 441**

#### **TOPICS IN ACTUARIAL SCIENCE**

A thorough review and extension of the topics taught in MATH 325 in preparation for the Actuarial Exam FM. Students who take this course will be prepared for, and are expected to sit for Actuarial Exam FM. *Prerequisites: MATH 325 and MATH 332. Corequisite: MATH 449.*

### **342, 442**

#### **TOPICS IN NUMERICAL ANALYSIS**

Topics from the theory of interpolation, numerical approaches to approximating roots and functions, integration, systems of differential equations, linear systems, matrix inversion, and the eigenvalue problem. Students who enroll in MATH 442 are expected to prepare and deliver a 30-minute capstone presentation in MATH 449. *Prerequisite: CPTR 125 and MATH 129.*

*Corequisite: MATH 449.*

### **443**

#### **LINEAR ALGEBRA**

Revisits matrices at a much more abstract level than MATH 130. Topics include matrix multiplication, determinants, invertibility and inverses of square matrices, real vector spaces and subspaces, linear independence, span, basis and dimension of a real vector space, as well as matrix transformations and linear transformations between vector spaces. Students write mathematical proofs involving these ideas. *Prerequisites: A grade of C- or better in both MATH 130 and MATH 234. Either successful completion of MATH 434 or concurrent enrollment in MATH 434. Concurrent enrollment in MATH 449.*

### **444**

#### **PARTIAL DIFFERENTIAL EQUATIONS**

Serves as an introduction to partial differential equations with focus placed on solution techniques, both numerical and analytical. Solution techniques that may be covered include separation of variables, finite difference methods, and iterative methods. Several classical partial differential equations and various coordinate systems are studied. *Prerequisites: A grade of C or better in CPTR 125, MATH 231, and MATH 238. Concurrent enrollment in MATH 449.*

### **445**

#### **GRAPH THEORY**

Introduces students to the fundamental concepts and ideas in graph theory, including subgraphs, trees, connectivity, optimization, covers, connectivity, vertex and edge colorings, and embeddings.

Applications discussed include topics such as tournament scheduling, spanning trees, Kuratowski's Theorem, and embeddings on surfaces. Students write mathematical proofs involving these ideas. *Prerequisites: A grade of C- or better in either MATH 234 or CPTR 247, or consent of the instructor. Concurrent enrollment in MATH 449. Credit may not be earned for both MATH 345 and MATH 445.*

#### **449**

##### **MATH COLLOQUIUM**

This required non-credit course for mathematics and actuarial science majors offers students a chance to give capstone presentations or poster sessions which were prepared in MATH 441, 442, 443, 444, or 445 as well as a chance to hear capstone presentations of their fellow majors and talks from faculty and external speakers. Meetings are announced at the start of each semester. *One hour per week. Pass/Fail. Non-credit course.*

#### **470-479**

##### **INTERNSHIP**

#### **N80-N89**

##### **INDEPENDENT STUDY**

#### **490-491**

##### **INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

# MEDIEVAL STUDIES (MDVS)

Professors: Chandler (Coordinator), Preston (Coordinator)

Associate Professor: Heyes (Coordinator)

- Major: Medieval Studies
- Courses required for major: 10
- Capstone requirement: MDVS 449
- Minor: Medieval Studies

The Medieval Studies major provides a framework for coursework focusing on the Middle Ages. This interdisciplinary major offers a foundation of historical and literary coursework in the period, introducing students to the essential people, events, and works of the time. Students will develop the critical thinking, reading, writing, and research skills essential to both the study of the era and the mission of a liberal arts education. The major requires ten courses, including interdisciplinary introductory and capstone courses. Students also choose five electives from a range of courses that relate to the language, literature, history, art, religion, and philosophy of the medieval period in Europe.

## Major Requirements

### 1. Two Core Courses

- |          |                                                                             |
|----------|-----------------------------------------------------------------------------|
| MDVS 200 | Introduction to Medieval Studies (usually first-year or sophomore students) |
| MDVS 449 | Advanced Medieval Studies (usually junior or senior year)                   |

### 2. Three Additional Core Courses from the following:

- |          |                                   |
|----------|-----------------------------------|
| ENGL 220 | British Literature I              |
| ENGL 311 | Medieval Literature               |
| HIST 212 | Medieval Europe and Its Neighbors |
| HIST 401 | The Middle Ages in Modern Eyes    |

### 3. Three of the following:

- |          |                                                                        |
|----------|------------------------------------------------------------------------|
| ENGL 219 | History of the English Language                                        |
| ENGL 220 | British Literature I (when not counting as a core course)              |
| ENGL 311 | Medieval Literature (when not counting as a core course)               |
| ENGL 335 | Chaucer                                                                |
| HIST 211 | From Rome to the Vikings                                               |
| HIST 212 | Medieval Europe and Its Neighbors (when not counting as a core course) |
| HIST 232 | The Rise of Islam                                                      |
| HIST 334 | Origins of Europe                                                      |
| HIST 336 | Crusades: Conflict and Accommodation                                   |
| HIST 401 | The Middle Ages in Modern Eyes (when not counting as a core course)    |
| PHIL 202 | Medieval Philosophy                                                    |
| REL 213  | Medieval Women's Religious Literature                                  |
| REL 214  | Constructing Gender in Christianity                                    |



**4. Two of the following:**

|                    |                                   |
|--------------------|-----------------------------------|
| ARHI 222           | Introduction to Art History I     |
| LAT 102 (or above) | Latin Grammar and Readings II     |
| MUS 335            | History of Western Music I        |
| REL 113            | Introduction to the Old Testament |
| REL 114            | Introduction to the New Testament |
| THEA 332           | Theatre History I                 |

**Capstone Requirement**

All majors must successfully complete MDVS 449.

**Minor Requirements**

The minor in Medieval Studies requires six courses: ENGL 220 and 311, HIST 212 and 401, and two additional electives that count toward the Medieval Studies major.

**200**

**INTRODUCTION TO MEDIEVAL STUDIES**

An introduction to the important people, events, works, and themes of the medieval period and the interdisciplinary means for studying them. The course aims to provide a working familiarity with the manifold medieval habits of mind, conditions of life, and ways of understanding the world. *Prerequisite or corequisite: ENGL 106 or consent of instructor. Alternate years.*

**449**

**ADVANCED MEDIEVAL STUDIES**

Focuses on the advanced practice of historical and literary research, analysis, and writing. Students complete a substantial independent research project incorporating primary and secondary source analysis of a proposed topic, subject to instructor approval. Required of majors in their junior or senior year. *Prerequisite: completion of core major requirements or consent of instructor.*

# MILITARY SCIENCE (MLSC)

Bolt-Michewicz (Coordinator)

The U.S. Army Reserve Officer Training Corps (ROTC) program is offered to Lycoming College students in cooperation with Bucknell University. Details of the ROTC program can be found under Cooperative Programs and at <https://www.lycoming.edu/academics/rotc.aspx>. For additional information go to: <https://www.bucknell.edu/azdirectory/rotc>.

## 101

### LEADERSHIP AND PERSONAL DEVELOPMENT

An introductory course open to all students without obligation. It focuses on the military as a profession and examines its organization, ethics, and values. The course explores the responsibilities and impact of leadership and the rules, customs, and traditions of military service. Students are introduced to the fundamentals of land navigation, physical fitness, drill and ceremonies, first aid, and public speaking. *1 credit.*

## 102

### INTRODUCTION TO TACTICAL LEADERSHIP

Open to all students without obligation, this course explores leadership principles, decision-making, and team building. Students are introduced to tactical systems and the field environment and learn advanced techniques in land navigation, terrain association, and first aid. Students also begin their program in professional military reading. *1 credit.*

## 201

### INNOVATIVE TEAM LEADERSHIP

Open to all students without obligation, this course continues the basic leader development process and focuses on applying the fundamentals of leadership and team-building skills. Students gain an understanding of small team dynamics and the roles and responsibilities of junior leaders. It further reinforces the ideals of service, ethics, and values and develops students' confidence in their own skills, knowledge, and attributes. *1 credit.*

## 202

### FOUNDATIONS OF TACTICAL LEADERSHIP

Open to all students without obligation, this course continues the application of leadership and team-building principles. Proficiency in individual skills and leadership abilities is assessed during situational training to evaluate students in leadership roles. Emphasizes advanced techniques in problem analysis, planning and organizing, delegation, interpersonal skills, sound decision making, and small team operations. *1 credit.*

### **301**

#### **ADAPTIVE TACTICAL LEADERSHIP**

Expands and refines the leader development process. This intensive program prepares cadets for tasks, skills, and responsibilities associated with Leader Development and Assessment Course (LDAC). Emphasizes written and oral communication skills, motivational behavior, interpersonal skills, administrative procedures, decision-making, and military field skills. Cadets are trained and evaluated on the full range of leadership skills and attributes. *Prerequisite: MLSC 202. 1 credit.*

### **302**

#### **LEADERSHIP IN CHANGING ENVIRONMENTS**

Expands on the skills introduced in MLSC 301 and incorporates increasingly challenging situations involving military technical, tactical, and leadership skills. Emphasizes advanced training in marksmanship and physical fitness. Culminates with several field training exercises where students are placed in simulated combat and evaluated on performance. Designed to bring cadets to peak proficiency in physical conditioning and leadership ability. *Prerequisite: MLSC 301. 1 credit.*

### **401**

#### **DEVELOPING ADAPTIVE LEADERS**

Refines military skills and knowledge to the precommissioning level. Senior students assume leadership roles as cadet commanders, staff officers, or staff assistants responsible for the planning, coordination, and execution of all cadet training and operations. Training focuses on Army legal, administrative, and logistical systems and training methodologies. It reinforces individual competencies and maximizes opportunities for practical application of leadership skills. *Prerequisite: MLSC 302. 1 credit.*

### **402**

#### **LEADERSHIP IN A COMPLEX WORLD**

Culminates the leader development process at the precommissioning level. Designed to prepare cadets for transition from cadet to Second Lieutenant. Seeks to expand the frame of reference. Cadets examine ethical and legal issues related to being an officer and continue to improve their leader and decision-making skills. Several practical exercises and field training events supplement classroom instruction. *Prerequisite: MLSC 401. 1 credit.*

## MODERN LANGUAGE STUDIES (MLS, FRN, GERM, SPAN)

Professor: Kingery

Associate Professors: Cagle, Varona (Chair)

Assistant Professors: Mesa Morales, Stafford

Lecturer: Rintelman

Instructors: Glidewell, Murphy, Ribitsch

- Majors: French & Francophone Studies, German, Spanish
- Credits required for all majors: 28-40 based on placement or other exemption
- Non-credit Colloquium: 2 semesters
- Capstone requirement: MLS 449
- Minors: French & Francophone Studies, German, Spanish

The study of modern languages and literatures offers opportunities to explore broadly the varieties of human experience and thought. It contributes both to personal and to international understanding by providing competence in a modern language and a critical acquaintance with the literature and culture of foreign peoples. A major can serve as a gateway to careers in business, education, government, journalism, publishing, social agencies, translating, and writing. It prepares for graduate work in literature or linguistics and the international fields of area studies, business, health, law, and politics.

### MAJOR FIELDS OF STUDY

French & Francophone Studies, German, and Spanish are offered as major fields of study. The major consists of 28-40 credits of courses based on placement or other exemption. See the French & Francophone Studies, German, and Spanish sections below for specific requirements for each major. Students who intend to pursue graduate study in a modern language should take additional 300- and 400-level courses. The department encourages students to consider allied courses from related fields, a second major, or an interdisciplinary major such as International Studies.

### STUDY ABROAD PROGRAMS

**Students are strongly encouraged to participate in a study abroad experience in a French-, German-, or Spanish-speaking country to enhance language proficiency and cultural understanding.** Lycoming has program partners in various programs throughout the world, and students may also study abroad through non-affiliate programs. Students who intend to study abroad should visit the Study Abroad office in the Center for Enhanced Academic Experiences as early as possible and begin planning with their major advisor by the first week of the semester prior to departure. To qualify, students must have sophomore standing or higher, overall and major GPAs of 2.50, and positive recommendations from faculty in the major.

### TEACHER CERTIFICATION

Students interested in teacher certification should refer to the Department of Education listing.

## MODERN LANGUAGE STUDIES (MLS)

**338**

### SECOND LANGUAGE ACQUISITION AND PEDAGOGY

Explores contemporary theories and practices of second language acquisition. Emphasis placed on the Standards for Foreign Language Learning in the 21st Century. Students write classroom observations, create and teach mini-lessons, conduct research, and devise a unit plan. Designed for future teachers of one or more languages and normally taken in the junior year. *Prerequisite: Consent of instructor. Taught in English. Does not count toward majors in French & Francophone Studies, German, or Spanish.*

**449**

### JUNIOR-SENIOR COLLOQUIUM

This colloquium offers French & Francophone Studies, German, and Spanish majors the opportunity to meet regularly with peers, professors, and invited guest speakers to discuss linguistic, literary, cultural, and pedagogical topics. Each student is required to deliver at least one oral presentation of approximately 20 minutes in a language other than English in their second semester. A letter grade is assigned in a semester when a student gives a presentation. Otherwise the grade is Pass/Fail. *Prerequisite: junior standing. The department recommends that, when possible, students take one semester of 449 during their junior year and another semester during their senior year. Taught in English. The Colloquium will meet a minimum of 6 times during the semester. Non-credit course.*

## FRENCH & FRANCOPHONE STUDIES (FRN)

### Major Requirements

The major consists of 28-40 credits in French & Francophone Studies based on placement or other exemption. The following courses must be taken or exempted: FRN 101, 102, 111, 112, 221 or 223, and 225. Regardless of placement, students are required to complete 16 additional credits at the 300-level or above; of these, at least 8 credits must be at the 400-level.

French & Francophone Studies majors must pass at least two semesters of MLS.

### Capstone Requirement

Majors are required to pass two semesters of MLS 449 (Junior-Senior Colloquium).

### Minor Requirements

A minor consists of 16-28 credits in French & Francophone Studies based on placement or other exemption. The following courses must be taken or exempted: FRN 101, 102, 111, 112, 221 or 223, 225. Regardless of placement, students are required to complete at least 4 credits at the 300- or 400-level.

**101****ELEMENTARY FRENCH I**

Students acquire novice-level French proficiency in listening, speaking, reading, and writing. This course introduces students to the French language and Francophone cultures by focusing on real-world implications of language learning and the transferable skills it imparts. Learning French, a language of international relations and economic trade, prepares students to be better global citizens.

**102****ELEMENTARY FRENCH II**

Students continue to acquire novice-level French proficiency in listening, speaking, reading, and writing. This course introduces students to the French language and Francophone cultures by focusing on real-world implications of language learning and the transferable skills it imparts. Learning French, a language of international relations and economic trade, prepares students to be better global citizens. *Prerequisite: FRN 101 or equivalent.*

**111****INTERMEDIATE FRENCH I**

Intensive review and development of intermediate proficiency in all language skills. This course introduces students to the French language and Francophone cultures by focusing on real-world implications of language learning and the transferable skills it imparts. Learning French, a language of international relations and economic trade, prepares students to be better global citizens. *Prerequisite: FRN 102 or equivalent.*

**112****INTERMEDIATE FRENCH II**

Continued review and development of intermediate proficiency in all language skills. This course introduces students to the French language and Francophone cultures by focusing on real-world implications of language learning and the transferable skills it imparts. Learning French, a language of international relations and economic trade, prepares students to be better global citizens. *Prerequisite: FRN 111 or equivalent.*

**221****FRENCH CONVERSATION AND REVIEW**

Helps students improve their mastery of the French language with specific focus on listening comprehension and oral production. Students develop real-world communication skills necessary for living and working in a francophone context. *Prerequisite: FRN 112 or equivalent. Fulfills Global Cultural Diversity Requirement.*

**223****FRENCH FOR NATIVE SPEAKERS**

Provides native speakers of French with the opportunity to improve strategic speaking, reading, and writing skills appropriate for academic and professional settings; to enhance understanding and appreciation of Francophone cultures and histories; and to evaluate the current status of French as a global language. Not open to students who have completed lower level French classes. *Prerequisite: This course is limited to students placed therein by the Modern Language*

*Studies Department. Fulfills either Domestic or Global Cultural Diversity Requirement. Alternate years.*

## **225**

### **FRENCH COMPOSITION AND REVIEW**

Helps students improve their mastery of the French language with specific focus on reading comprehension and written production. Students develop their written communication skills in a variety of genres such as descriptive, narrative, argumentative, and professional writing.

*Prerequisite: FRN 221 or 223. Fulfills Global Cultural Diversity Requirement.*

## **311**

### **FRANCOPHONE CULTURES**

Introduces students to the values, customs, and institutions of the francophone world in the context of the transnational geographic and historical forces affecting contemporary Europe, the Maghreb, SubSaharan Africa, the Indian Ocean, and the Caribbean. Students investigate the viability of a Francophone identity, given the plurality of identities found within the francophone community, through the analysis of francophone cinema. *Prerequisite: FRN 225 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

## **315**

### **INTRODUCTION TO FRENCH AND FRANCOPHONE LITERATURES**

Diverse readings draw from both French and Francophone literatures and represent significant literary movements from the Middle Ages to the present. Designed to acquaint the student with literary concepts and terms, genre study, and the basic skills of literary analysis. *Prerequisite: FRN 225 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

## **321**

### **SPECIAL TOPICS IN FRENCH AND FRANCOPHONE LITERATURE AND CULTURE**

Examination of significant cultural or literary topics concerning the French-speaking world. Possible topics include: Francophone short stories, French theatre, French-speaking women writers, French and Francophone poetry, Paris and the Avant-garde, Francophone cinema, Francophone Africa, In Search of Creoleness. *Prerequisites: FRN 225 or consent of instructor. May be repeated for credit with consent of instructor when topics are different. Fulfills Global Cultural Diversity Requirement. Alternate years.*

## **412**

### **FRENCH LITERATURE OF THE 19TH CENTURY**

The dimensions of the Romantic sensibility: Musset, Hugo, Madame de Staël, Vigny, Balzac, Stendhal, Sand; realism and naturalism in the novels of Flaubert and Zola; and the poetry of Baudelaire, Desbordes-Valmore, Rimbaud, Verlaine, and Mallarmé. *Prerequisite: One French & Francophone Studies course at the 300 or 400 level or consent of instructor. Alternate years.*

**418**

**ADVANCED LANGUAGE PRACTICE**

Intensive practice for advanced students who wish to further improve their spoken and written French. Includes work in oral comprehension, pronunciation, composition, and textual analysis. Also includes an introduction to linguistics, including phonology, morphology, semantics, and syntax. *Prerequisites: Either two French & Francophone Studies courses at the 300 level, one at the 400 level, or consent of instructor. Alternate years.*

**426**

**SPECIAL TOPICS IN FRENCH AND FRANCOPHONE LITERATURE AND CULTURE**

Readings of important works and movements in French and/or Francophone literature and culture. Reading selections may focus on a particular genre or they may be a combination of drama, poetry, and prose. Cultural topics may be explored with an interdisciplinary approach. Possible topics include Medieval literature, the Baroque period, the epistolary novel, Romanticism, 20th century poetry, French cinema, children's literature, surrealism and the avant-garde, the Francophone novel, French literature and art between the wars. *Prerequisites: One French & Francophone Studies course at the 300 or 400 level or consent of instructor. May be repeated for credit with consent of instructor when topics are different. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**427**

**FRENCH LITERATURE OF THE 20TH CENTURY**

Explores the major movements of the 20th century, beginning with the poetry of the Surrealists, continuing with the Theatre of the Absurd, and culminating in the New Novel. Representative writers include Proust, Breton, Céline, Camus, Duras, Saurraute, and Le Clézio. *Prerequisite: One French & Francophone Studies course at the 300 or 400 level or consent of instructor. Alternate years.*

**470-479**

**INTERNSHIP**

**N80-N89**

**INDEPENDENT STUDY**

Examples of recent studies in French & Francophone Studies include translation, Existentialism, the classical period, enlightenment literature, and Saint-Exupery.

**490-491**

**INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

**GERMAN (GERM)**

**Major Requirements**

The major consists of 28-40 credits in German based on placement or other exemption. The following courses must be taken or exempted: GERM 101, 102, 111, 112, 221, and 225.



Regardless of placement, students are required to complete 16 additional credits at the 300-level or above; of these, at least 8 credits must be at the 400-level.

German majors must pass at least two semesters of MLS 449.

### **Capstone Requirement**

Majors are required to pass two semesters of MLS 449 (Junior-Senior Colloquium).

### **Minor Requirements**

A minor consists of 16-28 credits in German based on placement or other exemption. The following courses must be taken or exempted: GERM 101, 102, 111, 112, 221, 225. Regardless of placement, students are required to complete at least 4 credits at the 300- or 400-level.

#### **101**

##### **ELEMENTARY GERMAN I**

Students acquire novice-level German proficiency in listening, speaking, reading, and writing. Examination of German cultural products encourages students to view diverse peoples as different yet interrelated.

#### **102**

##### **ELEMENTARY GERMAN II**

Students continue to acquire novice-level German proficiency in listening, speaking, reading, and writing. Examination of German cultural products encourages students to view diverse peoples as different yet interrelated. *Prerequisite: GERM 101 or equivalent.*

#### **111**

##### **INTERMEDIATE GERMAN I**

Intensive review and development of intermediate proficiency in all language skills. Focus on the development of interpersonal, interpretive, and presentational modes of communication. Cultural and short literary readings are broader in scope and the study of German films is incorporated in the curriculum. *Prerequisite: GERM 102 or equivalent.*

#### **112**

##### **INTERMEDIATE GERMAN II**

Continued review and development of intermediate proficiency in all language skills. Focus on the development of interpersonal, interpretive, and presentational modes of communication. Cultural and short literary readings are broader in scope and the study of German films is incorporated in the curriculum. In addition a task-based component is featured in this course. *Prerequisite: GERM 111 or equivalent.*

#### **221**

##### **GERMAN CONVERSATION AND REVIEW**

Refinement and improvement in the development of interpersonal, interpretive, and presentational modes of communication with a view to increasing proficiency toward the advanced level. Conversations and writing focus on contemporary films, cultural readings, and

literary texts. Phonetics, pronunciation, and in-depth grammar review. *Prerequisite: GERM 112 or equivalent. Fulfills Global Cultural Diversity Requirement.*

## **225**

### **GERMAN COMPOSITION AND REVIEW**

Intensive reading and writing program based largely on current topics in the German-speaking countries, and on literature, film, music, art, and other cultural products. Literary texts include two novels. Strong emphasis placed on reading comprehension and the further development of writing skills toward the advanced level. *Prerequisite: GERM 221. Fulfills Global Cultural Diversity Requirement.*

## **311**

### **MODERN GERMANY**

Designed to familiarize students with social and political structures and cultural attitudes in contemporary German, Austrian, and Swiss society. Material may include newspaper articles, interviews, films, and readings in history, religion, anthropology, and the arts. Some attention is paid to the changing education system, to the family, and to events and ideas that have shaped German-speaking cultures. *Prerequisite: GERM 221 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

## **315**

### **INTRODUCTION TO GERMAN-LANGUAGE LITERATURE**

Diverse readings draw from German, Swiss, and Austrian literature and represent significant literary movements from the Middle Ages to the present. Designed to acquaint the student with literary concepts and terms, genre study, and the basic skills of literary analysis. *Prerequisite: GERM 225 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

## **321**

### **SPECIAL TOPICS IN GERMAN LITERATURE AND CULTURE**

Examination of significant cultural or literary topics concerning the German-speaking world. Possible topics include: the German Novelle, German theatre, the fairy tale, German poetry, German film, German art and culture. *Prerequisite: GERM 225 or consent of instructor. May be repeated for credit with consent of instructor when topics are different. Fulfills Global Cultural Diversity Requirement. Alternate years.*

## **411**

### **THE NOVELLE**

The German Novelle as a genre relating to various literary periods. *Prerequisite: One German course at the 300 or 400 level or consent of instructor. Alternate years.*

## **418**

### **ADVANCED LANGUAGE PRACTICE**

Intensive practice for advanced students who want to improve their spoken and written German. Includes work in oral comprehension, pronunciation, oral and written composition, translation, and the development of the language and its relationship to English. Also includes an

introduction to linguistics, including phonology, morphology, semantics, and syntax.

*Prerequisite: GERM 225 or consent of instructor. Alternate years.*

## **426**

### **SPECIAL TOPICS IN GERMAN LITERATURE AND CULTURE**

The study of important works and movements in German literature and culture. Reading selections may focus on a particular genre or they may be a combination of drama, poetry, and prose. Cultural topics may be explored with an interdisciplinary approach. Possible topics include: Medieval literature, Romanticism, Classicism, fairy tales, Goethe, East and West Germany, the Weimar Republic, the Uncanny, post-reunification literature and film.

*Prerequisite: One German course at the 300 or 400 level or consent of instructor. May be repeated for credit with consent of instructor when topics are different. Fulfills Global Cultural Diversity Requirement. Alternate years.*

## **470-479**

### **INTERNSHIP**

## **N80-N89**

### **INDEPENDENT STUDY**

Examples of recent studies in German include Classicism, Germanic Mythology, Hermann Hesse, the dramas of Frisch and Dürrenmatt.

## **490-491**

### **INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

## **SPANISH (SPAN)**

### **Major Requirements**

The major consists of 28-40 credits in Spanish based on placement or other exemption. The following courses must be taken or exempted: SPAN 101, 102, 111, 112, 221 or 223, and 225. Regardless of placement, students are required to complete 16 additional credits at the 300-level or above; of these, at least 8 credits must be at the 400-level.

Spanish majors must pass at least two semesters of MLS 449.

### **Capstone Requirement**

Majors are required to pass two semesters of MLS 449 (Junior-Senior Colloquium).

### **Minor Requirements**

A minor consists of 16-28 credits in Spanish based on placement or other exemption. The following courses must be taken or exempted: SPAN 101, 102, 111, 112, 221 or 223, 225. Regardless of placement, students are required to complete at least 4 credits at the 300- or 400-level.

**101****ELEMENTARY SPANISH I**

Students acquire novice-level Spanish proficiency in listening, speaking, reading, and writing. Examination of Spanish and Latin American cultural products encourages students to view diverse peoples as different yet interrelated.

**102****ELEMENTARY SPANISH II**

Students continue to acquire novice-level Spanish proficiency in listening, speaking, reading, and writing. Examination of Spanish and Latin American cultural products encourages students to view diverse peoples as different yet interrelated. *Prerequisite: SPAN 101 or equivalent.*

**111****INTERMEDIATE SPANISH I**

Intensive review and development of intermediate proficiency in all language skills. Focus on the development of interpersonal, interpretive, and presentational modes of communication. Cultural and short literary readings are broader in scope, and the study of Spanish and Latin American films is incorporated in the curriculum. *Prerequisite: SPAN 102 or equivalent.*

**112****INTERMEDIATE SPANISH II**

Continued review and development of intermediate proficiency in all language skills. Focus on the development of interpersonal, interpretive, and presentational modes of communication. Cultural and short literary readings are broader in scope, and the study of Spanish and Latin American films is incorporated in the curriculum. In addition a task-based component is featured in this course. *Prerequisite: SPAN 111 or equivalent.*

**221****SPANISH CONVERSATION AND REVIEW**

Refinement and improvement in the development of interpersonal, interpretive, and presentational modes of communication with a view to increasing proficiency toward the advanced level. Conversations and writing focus on contemporary cultural readings, literary texts, and film. Also includes an in-depth grammar review. *Prerequisite: SPAN 112 or equivalent. Fulfills Global Cultural Diversity Requirement.*

**223****SPANISH FOR HERITAGE SPEAKERS**

Provides heritage speakers of Spanish with the opportunity to improve strategic speaking, reading, and writing skills; to master grammar points of particular concern to heritage speakers; and to enhance understanding and appreciation of Hispanic cultures, including language variation, customs, geography, history, and current events. Emphasis is placed on usage appropriate to academic and professional settings. Not open to students who have completed lower level Spanish classes. *Prerequisite: This course is limited to students placed therein by the Modern Language Studies Department. Fulfills either Domestic or Global Cultural Diversity Requirement.*

**225****SPANISH COMPOSITION AND REVIEW**

Intensive reading and writing program based largely on current topics in Spanish-speaking countries, and on literature, film, music, art, and other cultural products. Literary texts include poetry, short fiction, and a novel. Strong emphasis placed on reading comprehension and the further development of writing skills toward the advanced level. *Prerequisite: SPAN 221 or 223. Fulfills Global Cultural Diversity Requirement.*

**311****HISPANIC CULTURE**

To introduce students to Spanish-speaking peoples, and their values, customs, and institutions, with reference to the geographic and historical forces governing present-day Spain and Latin America. *Prerequisite: SPAN 225, 223 with consent of instructor, or a 300-level Spanish course. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**315****INTRODUCTION TO HISPANIC LITERATURES**

Diverse readings include both Spanish and Latin American literatures designed to acquaint the student with significant Hispanic authors and literary movements. Designed to acquaint the student with genre study, literary terms in Spanish, literary concepts and forms, as well as the basic skills of literary analysis. Fulfills the major requirement as either a course in the literature of Spain or in the literature of Latin America. *Prerequisite: SPAN 225, 223 with consent of instructor, or a 300-level Spanish course. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**321****SPECIAL TOPICS IN HISPANIC LITERATURE AND CULTURE**

Examination of significant cultural or literary topics concerning the Spanish-speaking world. Possible topics include Latin American short stories, Spanish theatre, Latin American women writers, Hispanic film, Hispanic art. Depending on topic, this course may fulfill the major requirement as either a course in the literature of Spain or in the literature of Latin America. *Prerequisite: SPAN 225, 223 with consent of instructor, or a 300-level Spanish course. May be repeated for credit with consent of instructor when topics are different. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**418****ADVANCED LANGUAGE PRACTICE**

Intensive practice for advanced students who wish to improve their spoken and written Spanish. Includes work in oral comprehension, pronunciation, and oral and written composition. Also includes an introduction to linguistics, including phonology, morphology, semantics, and syntax. *Prerequisite: Either two Spanish courses at the 300 level, one at the 400 level, or consent of instructor. Alternate years.*

**426****SPECIAL TOPICS IN HISPANIC LITERATURE AND CULTURE**

Readings of important works in Spanish and/or Latin American literature. Reading selections may focus on a particular genre or they may be a combination of drama, poetry, and prose. Cultural topics may be explored with an interdisciplinary approach. Possible topics include Medieval literature, the Golden Age, Romanticism and Realism in Spain and Latin America, the Modernist movement in Latin America, 20th century poetry, Lorca and the avant-garde, the Latin American novel or short story, the literature of the Civil War and Franco Spain, the theme of honor in Spanish literature, dramatic revisions of Spanish history in modern Spanish theatre. Depending on topic, this course may fulfill the major requirement as either a course in the literature of Spain or in the literature of Latin America. *Prerequisites: Either two Spanish courses at the 300 level, one at the 400 level, or consent of instructor. May be repeated for credit with consent of instructor when topics are different. Fulfills Global Cultural Diversity Requirement.*

**435****LITERARY TRANSLATION**

Students workshop the translation of a significant literary text and reflect upon and discuss both the theory and practice of translation. Emphasizes issues related to Spanish and English lexical, syntactical, and semantic differences as well as the various cultural issues involved in the act of literary translation. *Prerequisite: One Spanish course at the 300 or 400 level or consent of instructor. Alternate years.*

**470-479****INTERNSHIP****N80-N89****INDEPENDENT STUDY**

Recent studies include literary, linguistic, and cultural topics and themes such as urban problems as reflected in the modern novel.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

## MUSIC (MUS)

Associate Professors: W. Ciabattari (Chair), Gunderson

Assistant Professor: Chiu

Applied Music Instructors: R. Adams, S. Adams, Boll, Breon, Burke, R. Ciabattari, Cummings, Decker, DuMont, Fisher, Fortuna, B. Hall, D. Heffner, Holdren, R. Hunter, J. Johnson, Kendall, Kline, Klinger, Orris, Radspinner, Tobin, Valda, Yang

- Major: Music
- Courses required for major: 8 (exclusive of all ensemble, applied music, instrumental and vocal methods courses, and colloquium). Also MUS 167, 168, and/or 169 and 1 hour applied music per semester as major (4 semester minimum).
- Colloquium: 2 semesters
- Capstone requirement: MUS 446 or 447 and Piano proficiency examination
- Minor: Music

### Major Requirements

The student majoring in music is required to take a balanced program of music theory, history, applied music, and ensemble. A minimum of eight courses (exclusive of all ensemble, applied music, and instrumental and vocal methods courses) is required and must include MUS 120, 219, 220, 221, 335, and 336. Majors must complete the senior project (MUS 446 or MUS 447), participate in an ensemble (MUS 167, 168, and/or 169), and take one hour of applied music per week for a minimum of four semesters including the entire period in which the individual is registered as a music major (see MUS 160-166, 170-171). Majors must also pass a piano proficiency exam. The Department strongly recommends that students begin applied study in piano and a major applied instrument or voice as soon as possible, preferably in their first semester at the College. Anyone declaring music as a second major must do so by the beginning of the junior year. Two semesters of Music Colloquium are required of all students majoring in music.

Students interested in teacher certification should refer to the Department of Education listing.

The Music Department recommends that non-majors select courses from the following list to meet Distribution Requirements: MUS 116, 117, 224, 234, and 238. Applied music and ensemble courses (MUS 122-124 and MUS 160-171) may also be used to meet Distribution Requirements.

Student recitals offer opportunities to gain experience in public performance. Music majors and other students qualified in performance may present formal recitals.

### Capstone Requirements

All majors must successfully complete MUS 446 or 447 and a Piano proficiency examination.

## **Minor Requirements**

The minor in music requires MUS 116 or 120, plus four additional 4-credit courses in music, at least two of which must be at the 200 level or above. In addition, students must complete 2 credits of applied music, 1/2 (0.5) credit of which must be in piano. Students may substitute 7 semesters of ensemble performance (band, choir, or orchestra) for one of the courses below the 200 level. Students may substitute an additional 4.0 credits of applied music for one of the courses below the 200 level.

### **116**

#### **INTRODUCTION TO MUSIC**

A basic introduction to the materials and techniques of music. Examples drawn from various periods of western and non-western styles enhance perception and appreciation through careful and informed listening.

### **117**

#### **SURVEY OF WESTERN MUSIC**

A chronological survey of music in Western civilization from the Middle Ages to the present. Composers and musical styles are considered in the context of the broader culture of each major era.

### **120**

#### **MELODY IN MOTION**

A study of the fundamentals of music beginning with melody and progressing to melodic combinations of consonance and dissonance. Basic concepts of scales and keys are complimented by approaches to pitch organization from outside the traditions of Western tonality. While focusing on the compositional approaches in medieval chant, Renaissance counterpoint, and Baroque fugue, this course also explores the legacy of these melodic approaches in popular music and post-tonal traditions such as serialism.

### **125**

#### **MUSIC FUNDAMENTALS**

Music Fundamentals trains students to audiate music notation by engaging in solfege singing for pitch recognition and percussion instrument playing for rhythm. Through these activities, students enhance their aural skills, internalizing and recognizing musical patterns. This comprehensive approach fosters stronger overall musicianship and deeper musical literacy. *May be repeated once for credit.*

### **219**

#### **THE LANGUAGE OF HARMONY**

Chords and harmony form the building blocks of musical structures ranging from Mozart minuets to Beethoven symphonies to the top Billboard hits. This course explores the interaction of triads and seventh chords as the essential building blocks of harmony and provides language for interpreting and writing chords in contexts such as 4-part chorales and popular lead sheets. Composition and analysis projects explore basic harmonic formulas such as the 12-bar blues, gallant schemas, and other popular progressions. Finally, the course introduces colorful



chromatic chords and analytical techniques for studying chords outside of the tonal idiom using pitch class sets. *Prerequisite: MUS 116 or 120, or consent of instructor.*

## **220**

### **FORM & ANALYSIS**

Repetition, contrast, and development serve as the backdrop for studying musical organization at a large scale. This course builds upon the understanding of harmony, melody, and motivic development as agents in the organizational process. Examples emphasize forms that have shaped the history of Western classical and popular music alike: marches and minuets, ragtime and rondos, blues and baroque dances, songs and sonatas. *Prerequisite: MUS 219 or consent of instructor.*

## **224**

### **MUSIC AND TECHNOLOGY I**

An introduction to electronic music and MIDI (Musical Instrument Digital Interface) for the major and non-major alike. The course traces the development of MIDI from its origin to present-day. Students utilize relevant equipment and software to create music and other sounds. Particular focus is given to those technologies that are commonly used in public school music classrooms today.

## **225**

### **MUSIC AND TECHNOLOGY II**

Further consideration of recording techniques. Introduction of microphones, multi-track recording, mixing, special effects devices, and synchronization. Students take part in live recording of concerts and rehearsals of a variety of ensembles. Student projects include complete recording sessions and the production of electronic music compositions utilizing classical studio techniques and real-time networks. *Prerequisite: MUS 224 or consent of instructor.*

## **234**

### **HISTORY OF JAZZ**

A survey of jazz styles, composers, and performers from 1890 to the present: origins, ragtime, blues, New Orleans, Chicago, swing, bebop, cool, funky, free jazz, third stream, and contemporary. *Fulfills Domestic Cultural Diversity Requirement.*

## **238**

### **WORLD MUSIC**

An exploration of the music of non-Western cultures as well as the influences of non-Western music on Western musical development. Primary course content includes the musical traditions from Asia, Africa, and Australia. *Fulfills Global Cultural Diversity Requirement.*

## **245**

### **SPECIAL TOPICS IN MUSIC**

An introductory study of a selected area of music. Topics may include Beethoven, Impressionism, Vienna 1900-1914. *May be repeated for credit with consent of instructor when topics are different.*

**320****BEYOND TONALITY**

An introduction to the social, political, and artistic context surrounding composers' abandonment of tonality in the early 20th century. Includes compositional approaches and analytical techniques for exploring melody, harmony, and form in a sonic landscape no longer governed by Western scales and keys. Topics may include modes, pitch collections, serialism, and pitch class set theory. *Prerequisite: MUS 116 or 120 or consent of instructor.*

**335****HISTORY OF WESTERN MUSIC I**

The development of musical styles and forms from Gregorian chant through Mozart, including composers from the medieval, Renaissance, baroque, and early classical eras. *Fulfills Global Cultural Diversity Requirement. Prerequisite: MUS 120 and 219 or consent of instructor. Alternate years.*

**336****HISTORY OF WESTERN MUSIC II**

The development of musical styles and forms from Beethoven to the present, including composers from the late classical, romantic, and modern eras. *Fulfills Global Cultural Diversity Requirement. Prerequisite: MUS 120 and 219 or consent of instructor. Alternate years.*

**337****CONDUCTING**

A study of the techniques and philosophy of conducting both choral and instrumental ensembles. Topics include the physical skills and intellectual preparation necessary for clear, expressive, and informed conducting. Other areas such as the development of rehearsal techniques and improvement of aural skills are addressed on a continual basis. *Prerequisite: MUS 120 and 219 or consent of instructor. Alternate years.*

**339****ORCHESTRATION**

A study of modern orchestral instruments and examination of their use by the great masters with practical problems in instrumentation. The College Music Organizations serve to make performance experience possible. *Prerequisites: MUS 120 and 219 or consent of instructor. Alternate years.*

**340****TEACHING MUSIC IN THE ELEMENTARY SCHOOL**

Methods and materials of teaching music in the elementary school with emphasis on conceptual development through singing, moving, listening, playing classroom instruments, and creating music. Course work includes peer teaching demonstrations, practical use of the recorder and autoharp, as well as observation of music classes in elementary schools in the Greater Williamsport area. *Alternate years.*

**341****TEACHING MUSIC IN SECONDARY SCHOOLS**

Methods and materials of teaching music in the secondary schools with emphasis on the development of concepts and skills for effective instruction in all aspects of music learning. Examines the teaching of general music and music theory, as well as the organizing and conducting of choral and instrumental ensembles. Course work includes evaluation of instructional and performance materials, practical use of the recorder and guitar in middle school settings, as well as observation of music classes in secondary schools in the Greater Williamsport area. *Alternate years.*

**345****SPECIAL TOPICS IN MUSIC**

The intensive study of a selected area of music literature, composition, or performance, designed to develop advanced techniques in music. *Prerequisite: MUS 220 or consent of instructor. May be repeated for credit with consent of instructor when topics are different.*

**367****ADVANCED CONDUCTING**

A continuation of applied study in conducting. Topics include the physical skills and intellectual preparation necessary for clear, expressive, and informed conducting. Other areas such as the development of rehearsal techniques and improvement of aural skills are addressed on a continual basis. *Prerequisites: MUS 337 or consent of instructor.*

**445****SPECIAL TOPICS IN MUSIC**

The intensive study of a selected area of music literature, designed to develop research techniques in music. The topic is announced at Spring pre-registration. Sample topics include: Beethoven, Impressionism, Vienna 1900-1914. *Prerequisite: MUS 116, 117, 320, or consent of instructor.*

**446****MUSIC CAPSTONE**

The preparation and presentation of a full-length public recital, presentation, or portfolio of creative work normally during the student's senior year. *Prerequisite: Approval by the department. May be repeated for credit.*

**447****SENIOR PROJECT**

For this capstone course, students complete a portfolio of work to represent the culmination of their creative and academic achievements in music. The portfolio may include: a revised and expanded paper from an upper-level musicology or theory course and a public lecture-presentation; an interdisciplinary study (e.g., in Psychology, Business) culminating in a paper or portfolio of work and presentation; a portfolio of musical compositions and a public performance/lecture; or a public recital, including printed program notes or lecture notes, a recording of the recital. *1 credit.*

**348, 448****MUSIC COLLOQUIUM**

A non-credit seminar in which faculty, students, and invited professionals attend concerts and discuss topics related to musical composition, performance, history, and pedagogy. Two semesters of Music Colloquium are required for all majors. *Meets 7-8 times per semester. Pass/fail. Non-credit seminar.*

**470-479****INTERNSHIP****N80-N89****INDEPENDENT STUDY****490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

## APPLIED MUSIC AND ENSEMBLES

The study of performance in piano, harpsichord, voice, organ, strings, guitar, brass, woodwinds, percussion, jazz improvisation, conducting, or composition is designed to develop sound technique and a knowledge of appropriate literature within each performance area. Student recitals offer opportunities to gain experience in public performance. Credit for applied music courses (private lessons) and ensembles (choir, orchestra, and band) is earned on a fractional basis. One hour lesson per week earns one credit. One half-hour lesson per week earns 1/2 credit. Ensemble credit totals one credit if the student enrolls for one or two ensembles (for more information, see course descriptions below). When scheduling please note that an applied course or ensemble should not be substituted for an academic course, but should be taken in addition to the normal four academic courses.

Applied music courses are private lessons given for 13 weeks. Extra fees apply. See additional charges under Financial Matters.

- 160 Piano or Harpsichord
- 161 Voice
- 162 Guitar
- 163 Organ
- 164 Brass
- 165 Woodwinds
- 166 Percussion
- 170 Jazz Improvisation
- 171 Composition

### 122

#### BEGINNING CLASS PIANO

Begins with basic piano literacy including finger numbers, the piano keyboard, and music notation. It then progresses into beginning piano repertoire selected by the students and instructor. The dynamic and interactive Getchell Piano Lab features twelve digital keyboards that can accommodate individual practice time, one-on-one instruction, and group activities, including ensembles. No prior music study required. *1 Credit. May be repeated once for credit.*

### 123

#### BEGINNING CLASS GUITAR

Explores concepts for continued learning and life-long enjoyment of the guitar. It introduces basics of guitar performance and explores the evolution of pop/rock/blues styles. *1 Credit. May be repeated once for credit.*

### 124

#### WORLD DRUMMING LAB

Introduces a variety of percussion instruments and musical styles from around the globe. The group setting provides a relaxed atmosphere to develop skills ranging from rhythm and percussion technique to improvisation and non-verbal communication. While the class is primarily conducted as a group drumming lesson, students also learn about the historical and cultural background connected to these folkloric traditions. *1 Credit. May be repeated for credit.*

## 167

### ORCHESTRA

The Lycoming College Community Orchestra (LCCO) allows students with some instrumental experience to become acquainted with orchestral literature and develop personal musicianship through participation in group instrumental activity. Participation in the LCCO is contingent upon audition. *Students are allowed a maximum of one Ensemble credit per semester. A student who is only enrolled in orchestra should register for MUS 167B (one credit). A student may belong to two ensembles, choosing either Choir or Concert Band as the second group. Such a student then registers for MUS 167A (1/2 credit) plus either MUS 168A (1/2 credit) or MUS 169A (1/2 credit).*

## 168

### CHOIR

The Lycoming College Choir is open to all students who would like to sing in an ensemble setting. Emphasis is on performing quality choral literature while developing good vocal technique. *Students are allowed a maximum of one Ensemble credit per semester. A student who is only enrolled in Choir should register for MUS 168B (one credit). A student may belong to two ensembles, choosing either Orchestra or Band as the second ensemble. Such a student then registers for MUS 168A (1/2 credit) plus either MUS 167A (Orchestra - 1/2 credit) or MUS 169A (Band - 1/2 credit). Students who have auditioned and been selected for the Chamber Choir (no credit available) should register for MUS 168C in addition to registering for the Lycoming College Choir.*

## 169

### BAND

The College Concert Band allows students with some instrumental experience to become acquainted with good band literature and develop personal musicianship through participation in group instrumental activity. *Participation in the Band is contingent upon audition. Students are allowed a maximum of one Ensemble credit per semester. A student who is only enrolled in Band should register for MUS 169B (one credit). A student may belong to two ensembles, choosing either Orchestra or Choir as the second group. Such a student then registers for MUS 169A (1/2 credit) plus either MUS 167A (1/2 credit) or MUS 168A (1/2 credit). Students who have auditioned and been selected for the woodwind or brass quintets (no credit available) should register for MUS 169C or 169D.*

**261-267****INSTRUMENTAL AND VOCAL METHODS**

Instrumental and vocal methods classes are designed to provide students seeking certification in music education with a basic understanding of all standard band and orchestral instruments as well as a familiarity with fundamental techniques of singing.

|              |                                             |
|--------------|---------------------------------------------|
| MUS 261      | Brass Methods (one credit)                  |
| MUS 262      | Percussion Methods (one credit)             |
| MUS 263, 264 | String Methods I and II (one credit each)   |
| MUS 265      | Vocal Methods (one credit)                  |
| MUS 266, 267 | Woodwind Methods I and II (one credit each) |

# NEUROSCIENCE (NEURO)

Professor: Berger

Associate Professors: Drumm-Hewitt, Holstein

Assistant Professors: Andrew, Curtindale, Morrison (Coordinator)

- Major: Neuroscience
- Courses required for major: 11 (B.A.) and 14 (B.S.) (not including zero or 1 credit courses)
- Non-credit Colloquium: 1 semester
- Capstone requirement: Deliver a talk in NEURO 449 on a research experience based on PSY 412, BIO 447, an independent study, honors project, clinical internship, or research experience (includes NSF Research Experiences for Undergraduate) of at least 10 weeks full-time.
- Minor: Neuroscience

The Neuroscience Program offers a Neuroscience major that applies to either the Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) degrees as well as a minor in Neuroscience.

## Major Requirements for the B.A. Degree

The neuroscience major is designed for students who are interested in theory and research on the mind, brain, and nervous system.

The core courses train students to access, read, and critically analyze primary neuroscience literature, develop hypotheses, design and carry out experiments, analyze data, present the results, and engage in discussion of ethical issues related to neuroscience research. The elective courses allow students to explore interdisciplinary developments in biology, chemistry, computer science, mathematics, philosophy, psychology, and sociology that enrich and extend our understanding of the brain and of human thought and behavior. The Capstone Research or Internship experience ensures that students can apply their neuroscience knowledge outside of a traditional classroom setting.

### **Required core courses:**

|           |                                      |
|-----------|--------------------------------------|
| BIO 111   | Introduction to Biology II           |
| NEURO 110 | Unraveling the Mysteries of the Mind |
| NEURO 210 | Introduction to Neuroscience I       |
| NEURO 211 | Introduction to Neuroscience II      |
| PSYCH 110 | Introductory Psychology              |
| NEURO 449 | Neuroscience Colloquium              |



**One course from:**

|              |                                                        |
|--------------|--------------------------------------------------------|
| BIO 110      | Introduction to Biology I                              |
| CHEM 122/123 | General Chemistry I and General Chemistry Laboratory I |

**One course from:**

|          |                                  |
|----------|----------------------------------|
| CPTR 125 | Introduction to Computer Science |
| MATH123  | Statistics                       |
| MATH 127 | Precalculus                      |
| MATH 128 | Calculus                         |
| MATH 214 | Multivariable Statistics         |

**Neuroscience Electives**

Two courses from different prefixes from:

|         |                              |
|---------|------------------------------|
| BIO 222 | Genetics                     |
| BIO 322 | Neurogenetics                |
| BIO 435 | Cell Biology                 |
| PSY 242 | Drugs, Behavior, and Society |
| PSY 315 | Clinical Neuroscience        |
| PSY 325 | Cognitive Neuroscience       |

**Related Electives**

One course from:

|              |                                                           |
|--------------|-----------------------------------------------------------|
| BIO 323      | Human Physiology                                          |
| BIO 342      | Animal Behavior                                           |
| BIO 347      | Immunology                                                |
| BIO 447      | Cell and Molecular Biology Research Methods               |
| BIOCH 444    | Biochemistry I                                            |
| CHEM 124/125 | General Chemistry II                                      |
| PSY 212      | Research Methods and Analysis                             |
| PSY 215      | Child and Adolescent Development                          |
| PSY 216      | Abnormal Child Psychology                                 |
| PSY 217      | Lifespan Development                                      |
| PSY 219      | Abnormal Psychology                                       |
| PSY 237      | Cognitive Psychology                                      |
| PSY 322      | Sensation and Perception                                  |
| PSY 342      | Health Psychology                                         |
| PSY 412      | Advanced Psychology Research I—when not used for Capstone |
| SOC 210      | Sociology of Mental Health and Illness                    |
| SOC 310      | Medical Sociology                                         |

An Independent Study or Honors Project in Psychology or Sociology not used to fulfill the capstone requirement, with approval from the Program Coordinator and the Academic Standards Committee.

**Cognate Electives**

One course from:

|          |                |
|----------|----------------|
| PHIL 225 | Symbolic Logic |
|----------|----------------|

|          |                                                                                  |
|----------|----------------------------------------------------------------------------------|
| PHIL 330 | Knowledge and Reality                                                            |
| PHIL 333 | Philosophy of Natural Science                                                    |
| PHIL 335 | Philosophy of Mind and Cognitive Science                                         |
| PHIL 340 | Special Topics—when Neuroscience-related and approved by the program coordinator |

Experimental or special topics courses may be considered for inclusion in the major, with approval from the program coordinator.

### **Capstone Requirement**

Deliver a talk in NEURO 449 on a research experience based on PSY 412, BIO 447, an independent study, honors project, clinical internship, or research experience (includes NSF Research Experiences for Undergraduate) of at least 10 weeks full-time.

### **Major Requirements for the B.S. Degree**

The neuroscience major is designed for students who are interested in theory and research on the mind, brain, and nervous system. The neuroscience major consists of 9 required courses, 5 elective courses, and a capstone experience.

NEURO 210 Introduction to Neuroscience I and NEURO 211 Introduction to Neuroscience II provide students with an interdisciplinary approach to the fundamental structure and function of the brain that includes laboratory experiences across the breadth of current neuroscience research. These core courses train students to access, read, and critically analyze primary neuroscience literature, develop hypotheses, design and carry out experiments, analyze data, present the results, and engage in discussion of ethical issues related to neuroscience research. The five elective courses allow students to explore interdisciplinary developments in biology, chemistry, computer science, mathematics, philosophy, psychology, and sociology that enrich and extend our understanding of the brain and of human thought and behavior. The Capstone Research or Internship experience ensures that students can apply their neuroscience knowledge outside of a traditional classroom setting.

#### **Required core courses:**

|              |                                                        |
|--------------|--------------------------------------------------------|
| BIO 110      | Introduction to Biology I                              |
| BIO 111      | Introduction to Biology II                             |
| CHEM 122/123 | General Chemistry I and General Chemistry Laboratory I |
| NEURO 110    | Unraveling the Mysteries of the Mind                   |
| NEURO 210    | Introduction to Neuroscience I                         |
| NEURO 211    | Introduction to Neuroscience II                        |
| PSYCH 110    | Introductory Psychology                                |
| NEURO 449    | Neuroscience Colloquium                                |

#### **One course from:**

|          |                                  |
|----------|----------------------------------|
| CPTR 125 | Introduction to Computer Science |
| MATH123  | Statistics                       |
| MATH 127 | Precalculus                      |

|          |                          |
|----------|--------------------------|
| MATH 128 | Calculus                 |
| MATH 214 | Multivariable Statistics |

**Three courses from at least two prefixes from:**

|              |                                                          |
|--------------|----------------------------------------------------------|
| BIO 222      | Genetics                                                 |
| BIO 322      | Neurogenetics                                            |
| BIO 435      | Cell Biology                                             |
| CHEM 124/125 | General Chemistry II and General Chemistry Laboratory II |
| PSY 242      | Drugs, Behavior, and Society                             |
| PSY 315      | Clinical Neuroscience                                    |
| PSY 325      | Cognitive Neuroscience                                   |

**Related Electives**

Two courses from the following:

|              |                                                           |
|--------------|-----------------------------------------------------------|
| BIO 323      | Human Physiology                                          |
| BIO 342      | Animal Behavior                                           |
| BIO 347      | Immunology                                                |
| BIO 447      | Cell and Molecular Biology Research Methods               |
| BIOCH 444    | Biochemistry I                                            |
| CHEM 222/223 | Organic Chemistry I and Organic Chemistry Laboratory I    |
| CHEM 224/225 | Organic Chemistry II and Organic Chemistry Laboratory II  |
| PSY 212      | Research Methods and Analysis                             |
| PSY 215      | Child and Adolescent Development                          |
| PSY 216      | Abnormal Child Psychology                                 |
| PSY 217      | Lifespan Development                                      |
| PSY 219      | Abnormal Psychology                                       |
| PSY 237      | Cognitive Psychology                                      |
| PSY 322      | Sensation and Perception                                  |
| PSY 342      | Health Psychology                                         |
| PSY 412      | Advanced Psychology Research I—when not used for capstone |
| SOC 210      | Sociology of Mental Health and Illness                    |
| SOC 310      | Sociology of Health, Illness, and Health Care             |

An Independent Study or Honors Project in Psychology or Sociology not used to fulfill the capstone requirement, with approval from the Program Coordinator and the Academic Standards Committee.

**Electives**

One course from:

|          |                                                                                           |
|----------|-------------------------------------------------------------------------------------------|
| PHIL 225 | Symbolic Logic                                                                            |
| PHIL 330 | Knowledge and Reality                                                                     |
| PHIL 333 | Philosophy of Natural Science                                                             |
| PHIL 335 | Philosophy of Mind and Cognitive Science                                                  |
| PHIL 340 | Special Topics—when Neuroscience-related and approved by the Academic Standards Committee |

### Capstone Requirement

Deliver a talk in NEURO 449 on a research experience based on PSY 412, BIO 447, an independent study, honors project, clinical internship, or research experience (includes NSF Research Experiences for Undergraduate) of at least 10 weeks full-time.

### Minor Requirements

The interdisciplinary minor in Neuroscience requires five courses, including NEURO 210, 211, and 3 electives from the list below.

#### **Three electives, chosen from:**

|               |                                                                                           |
|---------------|-------------------------------------------------------------------------------------------|
| BIO 222       | Genetics                                                                                  |
| BIO 322       | Neurogenetics                                                                             |
| BIO 323       | Human Physiology                                                                          |
| BIO 347       | Immunology                                                                                |
| BIO 342       | Animal Behavior                                                                           |
| BIO 435       | Cell Biology                                                                              |
| BIO 447       | Cell and Molecular Biology Research Methods                                               |
| BIO 490-491   | Departmental Honors                                                                       |
| BIO N80-89    | Independent Study                                                                         |
| BIOCH 444     | Biochemistry I                                                                            |
| CHEM 122/123  | General Chemistry I and General Chemistry Laboratory I                                    |
| CHEM 124/125  | General Chemistry II and General Chemistry Laboratory II                                  |
| CHEM 219      | Organic and Biochemistry                                                                  |
| CPTR 125      | Introduction to Computer Science                                                          |
| NEURO 110     | Unraveling the Mysteries of the Mind                                                      |
| NEURO 490-491 | Departmental Honors                                                                       |
| NEURO N80-89  | Independent Study                                                                         |
| PHIL 330      | Knowledge and Reality                                                                     |
| PHIL 333      | Philosophy of Natural Science                                                             |
| PHIL 335      | Philosophy of Mind and Cognitive Science                                                  |
| PHIL 340      | Special Topics—when Neuroscience-related and approved by the Academic Standards Committee |
| PSY 212       | Research Methods and Analysis                                                             |
| PSY 237       | Cognitive Psychology                                                                      |
| PSY 242       | Drugs, Behavior, and Society                                                              |
| PSY 315       | Clinical Neuroscience                                                                     |
| PSY 322       | Sensation and Perception                                                                  |
| PSY 325       | Cognitive Neuroscience                                                                    |
| PSY 342       | Health Psychology                                                                         |
| PSY 412       | Advanced Psychology Research I                                                            |
| PSY 490-491   | Departmental Honors                                                                       |
| PSY N80-89    | Independent Study                                                                         |
| SOC 210       | Sociology of Mental Health and Illness                                                    |
| SOC 310       | Sociology of Health, Illness, and Healthcare                                              |

Note: Independent Studies and Honors Thesis projects require advance consultation with the project advisor and the program coordinators, and advance approval of a formal application by the Individual Studies Committee. Research projects outside of Biology, Psychology, and Neuroscience may be considered for fulfillment of the minor requirements, with approval by the Academic Standards Committee.

Experimental or special topics courses may be considered for inclusion in the minor, with approval from the Academic Standards Committee.

## **110**

### **UNRAVELING THE MYSTERIES OF THE MIND**

The human brain is one of our most complex and widely-studied organs. The field of neuroscience takes an interdisciplinary approach to studying the structure, function, development, and pathology of the brain. This course provides a broad overview of the field with a focus on brain anatomy and function, cognition, and behavior, helping students understand not only how the brain produces our conscious experiences, thoughts, and behaviors, but also how disease can lead to alterations in thinking and behavior. *This course is not open to juniors or seniors, except with consent of instructor. Four hours of lecture per week.*

## **206**

### **BRAIN AND BEHAVIOR**

An introduction to the biological bases of behavior. Topics include the anatomy, organization, and function of the nervous system; the biological basis of sensation, perception, and movement; and the neural basis of behavior and cognition. *Credit may not be earned for both PSY/NEURO 206 and PSY 433 or NEURO 211. Prerequisite: PSY 110 or consent of instructor. Cross-listed as PSY 206.*

## **210**

### **INTRODUCTION TO NEUROSCIENCE I**

An introduction to the study of neuroscience for students planning to major or minor in Neuroscience. Major topics include cellular, molecular, and developmental approaches to neuroscience. The laboratory component includes experimentation and exploration of current neuroscience literature. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 or 111 or consent of instructor.*

## **211**

### **INTRODUCTION TO NEUROSCIENCE II**

An introduction to the study of neuroscience for students planning to major or minor in Neuroscience. Major topics include behavioral and systems approaches to neuroscience. The laboratory component includes experimentation and exploration of current neuroscience literature. *Four hours of lecture and one three-hour laboratory per week. Prerequisites: BIO 110 or 111 or consent of instructor.*

**449****NEUROSCIENCE COLLOQUIUM**

Allows students to present their capstone experiences and the relevant background literature to fellow Neuroscience students and faculty members. Required of majors in their junior or senior year. *One hour per week. Pass/Fail. Non-credit course.*

**N80-N89****INDEPENDENT STUDY**

Studies are experimentally oriented and may include either laboratory or clinical field work. May include fly neurogenetics, mouse developmental neuroscience, parasite neurotransmission, or rodent behavior studies.

**490-491****INDEPENDENT STUDY FOR HONORS**

Neuroscience studies that are more in-depth or technically demanding than a regular Independent Study project. May include fly neurogenetics, mouse developmental neuroscience, parasite neurotransmission, or rodent behavior studies.

# PERFORMING ARTS MANAGEMENT

Professor: Stoytcheva-Horissian (Coordinator)

- Major: Performing Arts Management
- Courses required: 11 (not including zero or 1 credit courses)
- Production credits required for all Concentrations: 6
- Capstone requirement: THEA 460 or THEA 470-479

The Performing Arts Management major is built on a multidisciplinary approach, combining a strong core of business, entrepreneurship, corporate communications, and theatre courses and blending the artistic and business elements (essentials) of a career in the arts. It is designed to provide a theoretical and practical foundation for the arts management professional. Through the coursework, practica, and internship experiences, students graduating with this major are well prepared to enter the arts management field and apply their expertise to bring quality artistic events to the public.

## Major Requirements

### Required Courses

BUS 228 Marketing Principles

BUS 244 Management and Organizational Behavior

CMS 200 Media and Communication

ENTR 200 Entrepreneurship

THEA 100 Understanding Theatre

THEA 161 Theatre Performance Practicum and/or THEA 162 Theatre Leadership Practicum (6 credits total)

THEA 246 Fall Theatre Colloquium (0 credits)

THEA 247 Spring Theatre Colloquium (0 credits)

THEA 303 Performing Arts Management

THEA 470 – 479 Internship or THEA 460 Senior Project

### Two Communication and Media Studies electives:

CMS 221 Events Management

CMS 222 Entertainment Industry Promotion

CMS 324 Public Relations

CMS 332 Advertising

### One Entrepreneurship elective:

ENTR 210 Human Performance in Entrepreneurship

ENTR 315 Privately Owned Business Management

ENTR/BUS 325 Digital Marketing

### One Finance elective:

ENTR 220 Entrepreneurial Finance

BUS 238 Fundamentals of Financial Management

**Capstone Requirement**

All majors must complete THEA 460 Senior Project or THEA 470-479 Internship



# PHILOSOPHY (PHIL)

Professor: Berger

Assistant Professor: Shoemaker, Young (Chair)

- Major: Philosophy
- Courses required for major: 8
- Capstone requirement: PHIL 440
- Minors: Philosophy, Philosophy and Law, Philosophy and Science, History of Philosophy, Ethics and Political Philosophy

Philosophy at Lycoming is an introduction to questions that have been asked in the philosophical tradition for 2400 years. The Department teaches courses in Ancient, Medieval, Modern, and Contemporary Philosophy.

In addition, Philosophy at Lycoming is a vantage point from which to think about questions that often occur to thoughtful students as they pursue majors other than philosophy. The Philosophy Department offers courses directly relevant to students majoring in Accounting, Archaeology, Biology, Business, Criminal Justice, Education, International Studies, Mathematics, Physics, Political Science, Psychology, and Religion, among others.

The philosophy curriculum is flexible and, therefore, students at Lycoming can combine a major or minor in philosophy with a major in just about any other subject. Students who pursue philosophy as a minor or as a second major will deepen their liberal arts education while at the same time preparing themselves for a career.

## Major Requirements

The major in Philosophy requires eight courses, including PHIL 225, 440; any two of PHIL 201, 202, and 203; and at least three other PHIL courses numbered 300 or above. PHIL 340 may be counted toward the major more than once with departmental approval.

Students interested in teacher certification should refer to the Department of Education listing.

## Capstone Requirement

All majors must successfully complete PHIL 440.

## Minor Requirements

The Philosophy Department offers five minors:

- (1) **Philosophy:** any four Philosophy courses (except PHIL 105, 216, 217, 219, and 228) with at least two 300-level courses.
- (2) **Philosophy & Law:** four courses from PHIL 225, 318, 334, 336, a departmentally-approved 340, or a departmentally-approved independent study.
- (3) **Philosophy & Science:** PHIL 333 and three courses from PHIL 203, 225, 228, 330, 335, a departmentally-approved 340, or a departmentally-approved independent study.

- (4) **History of Philosophy:** PHIL 201, 202, 203, and either PHIL 225 or any 300-level course.
- (5) **Ethics & Political Philosophy:** PHIL 318; 334; 336; and a departmentally-approved 340 or a departmentally-approved independent study.

### **105**

#### **PRINCIPLES OF CRITICAL THINKING**

An introduction to the elements of critical thinking centered on developing the skills necessary to recognize, describe, and evaluate arguments. *Not open to juniors or seniors except with consent of instructor.*

### **120**

#### **INTRODUCTION TO MORAL PHILOSOPHY**

An introduction to philosophy focusing on central problems and basic texts in moral philosophy. Problems may include the relation of reason and morality, proposed justifications for killing human beings and animals, the nature of the good life, and other general problems of moral philosophy. Texts may include works by Plato, Aristotle, Augustine, Aquinas, Hume, Kant, or Mill as well as writing by contemporary philosophers. *Not open to juniors or seniors except with consent of instructor.*

### **125**

#### **INTRODUCTION TO POLITICAL PHILOSOPHY**

An introduction to philosophy focusing on central problems and basic texts in political philosophy. Problems may include the obligation to obey the law and the right to enforce it, the nature and desirability of democracy, the nature and possibility of political rights. Texts may include writing by Plato, Aristotle, Hobbes, Locke, Hume, or Rousseau as well as writing by contemporary philosophers. *Not open to juniors or seniors except with consent of instructor. Fulfills Global Cultural Diversity Requirement.*

### **130**

#### **INTRODUCTION TO PHILOSOPHY OF SCIENCE**

Scientific ideas and inferences have a huge impact on our daily lives and the lives of practicing scientists. But what is science, how does it work, and what does it enable us to know? In this introductory course, we consider some traditional philosophical questions applied to the foundations and practice of natural science. Topics may include the history of philosophical approaches in science, the nature of scientific knowledge, changes in scientific knowledge over time, how science provides explanations of what we observe, the justification of false assumptions in science, the nature of scientific theories, and some questions about the ethics and values involved in scientific practice. *Not open to juniors or seniors except with consent of instructor.*

### **140**

#### **CENTRAL PROBLEMS IN PHILOSOPHY**

An introduction to philosophy focusing on central problems and basic texts. The problems may include free will and determinism, the relationship between mind and body, the nature and limits of human knowledge, and arguments for the existence of God. Texts may include works by Plato, Aristotle, Augustine, Aquinas, Hume, and Kant as well as writing by contemporary

philosophers. *Not open to juniors or seniors except with consent of instructor. Credit may not be earned for both PHIL 140 and 145.*

## **145**

### **PHILOSOPHY THROUGH FILM**

An introduction to philosophy using film and basic texts to focus on central problems. Those problems may include the value of philosophy, moral responsibility, arguments about the existence of God, the nature and limits of human knowledge, the relationship between mind and body, and the nature of art. Texts may include works by Plato, Descartes, Locke, Aquinas, Mill, Hume, Kant, and Russell as well as writing by contemporary philosophers. *Not open to juniors or seniors except with consent of instructor. Credit may not be earned for both PHIL 140 and 145.*

## **201**

### **ANCIENT GREEK PHILOSOPHY**

A critical examination of the ancient Greek philosophers, with particular emphasis on Plato and Aristotle. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

## **202**

### **MEDIEVAL PHILOSOPHY**

A survey of the philosophical developments that took place primarily in Western Europe in the period from about 400 to about 1400 CE, roughly between the fall of Rome and the beginning of the Renaissance. Philosophers from the Christian, Islamic, and Jewish philosophical traditions are studied. The course is devoted to questions concerning philosophical theology (proofs for God's existence, the problem of evil, God's foreknowledge, the possibility of free action, and the immortality of the soul) and to non-theological questions (the role of the state, theories of knowledge and perception). Readings are drawn from Augustine, Boethius, Anselm, Avicenna, Averroes, Maimonides, Aquinas, Duns Scotus, and William of Ockham. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

## **203**

### **MODERN PHILOSOPHY**

A survey of seventeenth- and eighteenth-century European philosophy which examines important philosophical texts from some of the following: Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Rousseau, and Kant. The course considers these texts in their historical context and also tries to see how the views of these philosophers have influenced ours on a variety of issues, particularly those concerning mind and matter, science and knowledge, and the nature of a morally acceptable government. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

## **216**

### **BUSINESS ETHICS**

A systematic and philosophically informed consideration of some typical moral problems faced by individuals in a business setting and a philosophical examination of some common moral criticisms of the American business system.

**217**

**PHILOSOPHICAL ISSUES IN EDUCATION**

An examination of the basic concepts involved in thought about education and a consideration of the various methods for justifying educational proposals. Typical of the issues discussed are: Are education and indoctrination different? What is a liberal education? Are education and schooling compatible? What do we need to learn? *Alternate years.*

**219**

**PHILOSOPHICAL ISSUES IN HEALTH CARE**

An investigation of some of the philosophical issues which arise in therapy and in health research and planning. Topics typically include euthanasia, confidentiality, informed consent, behavior control, experimentation on humans and animals, abortion, genetic engineering, population control, and distribution of health care resources.

**225**

**SYMBOLIC LOGIC**

A study of modern symbolic logic and its application to the analysis of arguments. Included are truth-functional relations, the logic of propositional functions, and deductive systems. Attention is also given to various topics in the philosophy of logic. *Students who have taken or are taking MATH 234 may not receive credit for PHIL 225.*

**227**

**RELIGION & REASON**

Examines philosophical questions about the idea of God found in the Jewish, Christian, and Islamic religious traditions. What attributes must God have? Must God be a perfect being? Is the concept of a perfect being coherent? Is the existence of a perfect God compatible with the presence of evil in the world and the existence of human freedom? Does human morality depend in any important way on the will of God? Can the existence of God be proven? Can it be disproven? Is it rational to believe in God? The course approaches these questions via readings from classic and contemporary philosophical texts. *Fulfills either Domestic or Global Cultural Diversity Requirement. Alternate years.*

**228**

**PHILOSOPHY AND THE ENVIRONMENT**

A reexamination of views about nature and the relation of human beings to it. Many intellectual, spiritual, ethical, and aesthetic traditions have taken a stance on this issue. This course examines some of the most influential of these traditions philosophically and considers how these views influence thoughts about the environment. Topics might include the following: how sentient, non-human animals factor in human moral reasoning, the status of the wilderness, the preservation of diverse ecosystems, the human relationship to the greater biotic community, moral questions pertaining to the transformation of the natural world into economic commodities, and the relationship between conceptions of beauty and the natural world. *Fulfills either Domestic or Global Cultural Diversity Requirement.*

**318**

**PHILOSOPHICAL ISSUES IN CRIMINAL JUSTICE**

A philosophical examination of some important controversies which arise in connection with the American criminal justice system. Typically included are controversies about the nature and purpose of punishment, the proper basis for sentencing, the correct understanding of criminal responsibility, and the rationale and extent of our basic human rights with respect to criminal law. *Fulfills Domestic Cultural Diversity Requirement.*

**330**

**KNOWLEDGE AND REALITY**

Explores two broad areas of philosophical inquiry: metaphysics, which is concerned with general questions about the ultimate nature of the universe (reality), and epistemology, which is concerned with general questions about what we know or have reason to believe (knowledge). *Alternate years.*

**333**

**PHILOSOPHY OF NATURAL SCIENCE**

A consideration of philosophically important conceptual problems arising from reflection about natural science, including such topics as the nature of scientific laws and theories, the character of explanation, the importance of prediction, the existence of “non-observable” theoretical entities such as electrons and genes, the problem of justifying induction, and various puzzles associated with probability. *Alternate years.*

**334**

**CONTEMPORARY POLITICAL PHILOSOPHY**

A close reading of four or five defining works of contemporary political philosophy, beginning with the work of John Rawls. *Fulfills either Domestic or Global Cultural Diversity Requirement. Alternate years.*

**335**

**PHILOSOPHY OF MIND AND COGNITIVE SCIENCE**

Cognitive science is the interdisciplinary study of the mind, encompassing fields such as psychology, neuroscience, philosophy, computer science, anthropology, and linguistics. This course explores philosophical questions about the mind and our cognitive-scientific study of it. Topics may include the relationship of the mind to the body, psychological architecture, thought and mental representation, perception, language, emotion, consciousness, and artificial intelligence. Students read works in philosophy as well as studies in psychology and neuroscience. *Alternate years.*

**336**

**CONTEMPORARY MORAL PHILOSOPHY**

A close reading of four or five centrally important works of contemporary moral philosophy. *Alternate years.*

**340****SPECIAL TOPICS**

Study of selected philosophical problems, texts, writers, or movements. Recent topics include ethical obligations to animals, lying and lawbreaking, artificial intelligence, intelligent design, and homicide. *May be repeated for credit when topics are different. May be counted toward a major more than once, with departmental approval.*

**440****PHILOSOPHICAL RESEARCH AND WRITING**

In-depth instruction in both the independent and the cooperative aspects of philosophical research and writing. Each student undertakes an approved research project and produces a substantial philosophical paper. *Open only to, and required of, senior philosophy majors.*

**470-479****INTERNSHIP****N80-N89****INDEPENDENT STUDY**

Recent independent studies in philosophy include Nietzsche, moral education, Rawls' theory of justice, existentialism, euthanasia, Plato's ethics, and philosophical aesthetics.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

## **PHYSICS (See Astronomy/Physics)**

## **POLITICAL SCIENCE (PSCI)**

Associate Professor: Payne (Chair)

Assistant Professors: Achury, Kantack

- Major: Political Science
- Courses required for major: 10
- Capstone requirement: PSCI 400
- Minors: Political Science, American Politics, World Politics

The major is designed to provide a systematic understanding of government and politics at the international, national, state, and local levels. Majors are encouraged to develop their skills to make independent, objective analyses which can be applied to the broad spectrum of the social sciences.

Although the political science major is not designed as a vocational major, students with such training may go directly into government service, journalism, teaching, or private administrative agencies. A political science major can also provide a solid foundation for the study of law or for graduate studies leading to administrative work in federal, state, or local governments, international organizations, or teaching at the university level.

Students seeking certification to teach secondary school social studies should refer to the Department of Education listing and consult their advisors and the Education Department. For political science majors who student teach, EDUC 465 Professional Semester of Student Teaching may count as one course at the 200 level for the political science major.

### **Major Requirements**

A major in Political Science consists of ten courses as follows: PSCI 110, 300, and 400; two other introductory courses from PSCI 130, 140 and 160; two additional PSCI courses numbered 300 or higher; and three additional courses from PSCI or EDUC 465. These additional PSCI elective courses must cover at least two subfields of Political Science—American Politics and Public Policy (designated by course numbers in the 10s or 20s), Legal Studies (designated with course numbers in the 30s), Comparative Politics (designated with course numbers in the 40s), or International Relations (designated with course numbers in the 60s).

### **Capstone Requirement**

All majors must successfully complete PSCI 400.



## Minor Requirements

The department offers three minors:

1. **Political Science:** any five courses, three of which are numbered 200 or above.
2. **American Politics:** PSCI 110 and four courses selected from those with course numbers ending in the 10s or 20s.
3. **World Politics:** PSCI 140 or 160 and four courses selected from those with course numbers ending in the 40s or 60s.

Students are encouraged to consult with department members on the selection of a minor.

### 110

#### U.S. GOVERNMENT AND POLITICS

The ideologies, institutions, and processes of American politics at the national level, with attention to the internal workings of government and the extra-governmental actors—including voters, political parties, and interest groups—that influence policy.

### 130

#### THE AMERICAN LEGAL SYSTEM

An introduction to all aspects of the American legal system. Students examine the historical development of the American court system, its current incarnation and organization, the “players” who participate in this system (i.e., lawyers, judges, interest groups), and the stages of the trial process. In addition, students explore the special role that the Supreme Court plays in the American legal system, focusing on the structure of the Court, which cases the Court agrees to hear and why, judicial decision-making, opinion assignment and bargaining, and the notion of constraints on the Court.

### 140

#### COMPARATIVE POLITICS AND GEOGRAPHY

The politics and geography of states in Europe, Asia, the Middle East, Africa, and South America in a search for comparisons and patterns. Includes history, institutions, cultures, borders, regions, and map exercises. *Fulfills Global Cultural Diversity Requirement.*

### 160

#### INTERNATIONAL RELATIONS

The basic factors and concepts of international relations, such as international systems, national interest and security, wars, decolonization, nationalism, economic development, trade blocs, and international law and organizations. *Fulfills Global Cultural Diversity Requirement.*

### 201

#### APPLIED POLITICS EXPERIENCE

Short-term course that takes an in-depth look at specific political science topics with emphasis on their application at the local, state, national, or international level. Includes approximately 20 hours in the classroom and 20 hours of field experience. *Prerequisite: One PSCI course or consent of the instructor. May be repeated for credit with consent of the department when topics/experiences are different. 1 Credit.*

**211**

**STATE AND LOCAL GOVERNMENT**

An examination of the general principles, major problems, and political processes of the states and their subdivisions, together with their role in a federal type of government. *Alternate years.*

**220**

**PUBLIC POLICY IN AMERICA**

An investigation of the public policymaking process in the United States. Students examine how issues get on the public policy agenda, the processes policymakers work through in making policy choices, the challenges and associated politics of implementing policy, and the substantive issues that remain once policymakers address a problem. To illustrate the concepts and principles of the public policy process, the course also explores controversial issues ranging from abortion and climate change to gun control and same-sex marriage. *Alternate years.*

**222**

**POLITICAL PARTIES AND INTEREST GROUPS**

The role and impact of political parties and interest groups in America, focusing on individual-level partisanship and group affiliation, organizational structures of parties and interest groups, and how parties and interest groups cooperate and compete to influence elections and government policy in the United States. *Alternate years.*

**224**

**CAMPAIGNS AND ELECTIONS**

The complex relationship between the rules of the American electoral system and the strategic behavior of voters, candidates, parties, and other political actors within that system. *Alternate years.*

**227**

**MEDIA AND POLITICS**

The mediated nature of politics and government, including the role of news media in a democracy, the historical evolution of the media environment, trends and tendencies in political and electoral news coverage, effects of political media consumption on citizens, and media bias. *Alternate years.*

**229**

**SPECIAL TOPICS IN AMERICAN POLITICS AND PUBLIC POLICY**

Study of selected American politics and public policy topics, problems, and questions. *May be repeated for credit with consent of department when topics are different.*

**232**

**CONSTITUTIONAL LAW**

Examines the power struggle in allocating authority among branches of the federal government, states, and the people. Using the case law method, the class focuses on the role of the Supreme Court in crafting, interpreting, implementing, and refining the U.S. Constitution to critically

assess the underlying social, moral, and political theories that affect the Court's decision-making process.

**239**

#### **SPECIAL TOPICS IN LEGAL STUDIES**

Study of selected legal studies topics, problems, and questions. *May be repeated for credit with consent of department when topics are different.*

**242**

#### **HUMAN RIGHTS**

Examination of the historical, philosophical, and religious documents upon which contemporary human rights are grounded, accompanied by discussions of how these rights change over time and space. Analysis of the future effectiveness of human rights legislation and organizations. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**245**

#### **LATIN AMERICAN POLITICS**

Surveys the essential elements of Latin American politics. It focuses on persistent inequality in a region of contrast, exploring political events and institutions over long periods. The overarching objective is to understand the origins of Latin American inequality and the role of political institutions in perpetuating or mitigating it. The course also covers current policies towards equity and social transformation and their implications for democratic consolidation.

**249**

#### **SPECIAL TOPICS IN COMPARATIVE POLITICS**

Study of selected comparative politics topics, problems, and questions. *May be repeated for credit with consent of department when topics are different.*

**260**

#### **GLOBALIZATION AND SUSTAINABLE DEVELOPMENT**

An examination of globalization's effects on the developing world, with specific attention paid to sustainable development. Emphasis is placed on the Dominican Republic. The course typically meets regularly during the semester and finishes with a required 1-credit field experience in the Dominican Republic where students take part in community and economic development projects. *Alternate years. Fulfills Global Cultural Diversity Requirement.*

**261**

#### **INTERNATIONAL ORGANIZATIONS**

Exploration of the international organizations that purportedly facilitate cooperation within the international system. Discussions focus on the origins of these institutions, their past and present functions, as well as the role they might play in the future of international politics and international law. Students will examine these issues in the context of IOs such as the United Nations, European Union, African Union, Organization of American States, World Bank, and World Trade Organization. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**269**

## SPECIAL TOPICS IN INTERNATIONAL RELATIONS

Study of selected international relations topics, problems, and questions. *May be repeated for credit with consent of department when topics are different.*

### 300

#### POLITICAL SCIENCE RESEARCH METHODS

An examination of conceptual and analytical tools in political science research. Topics include research design, issues of measurement, and empirical analysis. *Prerequisite: Junior standing and 2 courses in Political Science or consent of instructor.*

### 316

#### PUBLIC OPINION AND POLLING

Examines the general topic and methodology of polling. Content includes exploration of the processes by which people's political opinions are formed, the manipulation of public opinion through the uses of propaganda, and the American response to politics and political issues. *Prerequisite: PSCI 110 or consent of instructor.*

### 320

#### POLITICAL PSYCHOLOGY

Examination of the mental mechanisms by which individuals make sense of their political environment and the implications of those mechanisms for their political behavior. Topics include identity, personality, socialization, values, knowledge, emotion, bias, and trust. *Prerequisite: PSCI 110, PSY 110, or consent of instructor. Alternate years.*

### 321

#### CONGRESS

Study of the U.S. Congress emphasizing internal structure and operations, rules and procedures, party leadership, committee system, external influences, incentives for congressional behavior, and elections. *Prerequisite: PSCI 110 or consent of instructor. Alternate years.*

### 322

#### THE PRESIDENCY

The structure and behavior of the American presidency, including elections, organization of the office, and relation to other national institutions. *Prerequisite: PSCI 110 or consent of instructor. Alternate years.*

### 331

#### CIVIL RIGHTS AND LIBERTIES

An investigation of the Bill of Rights and its place in American democracy. Civil rights and liberties are studied based on the decisions of the United States Supreme Court. Students read, critically analyze, and discuss cases pertaining to controversial issues ranging from abortion and flag burning to obscenity and zoning restrictions. *Prerequisite: PSCI 130, 231, 232, or consent of instructor. Alternate years. Fulfills Domestic Cultural Diversity Requirement.*

**334**

**LEGAL RESEARCH AND WRITING**

Designed to develop the skills needed to find, read, and analyze legal sources in order to write persuasive briefs, memoranda, and pleadings. While useful for all, this skill set provides a great advantage to students hoping to attend law school or work in the legal profession. Some class meetings may be held at the James V. Brown Library. *Prerequisite: PSCI 130, 231, or consent of instructor. Alternate years.*

**339**

**JUDICIAL POLITICS AND BEHAVIOR**

An exploration of the academic scholarship on judicial politics and behavior designed to develop students' ability to read and critically analyze such research. Questions examined in the course include: Why do judges decide cases the way they do? What effect does public opinion have on judicial decision-making? How do interest groups pursue their objectives in the court system? How are state and federal benches staffed? What effect do institutional differences have on judicial decision-making? *Prerequisite: Junior or senior standing and PSCI 130, 231, or consent of instructor. Alternate years.*

**341**

**GENDER AND THE LAW**

Examines the relationship between gender and the law through a comparative lens. Students explore how legal systems construct and respond to gender, focusing on issues such as employment, family law, reproductive rights, and gender-based violence. The course also introduces key feminist and critical gender theories to analyze how law can reinforce or challenge inequality. *Prerequisite: PSCI 130, PSCI 140, or consent of instructor. Alternate years.*

**342**

**CIVIL CONFLICT**

Examination of the contemporary dominant form of conflict: civil war. Discussion of the political, economic, and institutional sources of civil conflict; determinants of length and intensity; the actors involved and their diverse motivations and actions; the various consequences; and finally, some potential solutions. *Prerequisite: PSCI 140, PSCI 160, CJCR 346, or consent of instructor. Alternate years. Fulfills Global Cultural Diversity Requirement.*

**362**

**TERRORISM**

Examination of the causes and strategies of terrorism as well as potential solutions. Students engage a variety of theories and debate whether terrorism has psychological, religious, cultural, and/or rational causes. Also examines terrorism as a strategy, with particular attention to primary texts on insurgency and counterinsurgency. Application of what we have learned in an effort to evaluate a number of potential solutions. *Prerequisite: PSCI 140, PSCI 160, CJCR 346, or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**400****POLITICAL ANALYSIS**

Capstone course required of majors, normally taken in their senior year. Integrates and deepens knowledge and methods of the study of politics by means of empirical political inquiry and quantitative techniques. *Prerequisite: PSCI 300. Open to non-majors with consent of instructor.*

**470-479****INTERNSHIPS**

Students may receive academic credit for serving as interns in structured learning situations with a wide variety of public and private agencies and organizations. Students have served as interns with the Public Defender's Office, the Lycoming County Court Administrator, and the Williamsport City government.

**N80-N89****INDEPENDENT STUDY**

Examples of past studies include local, state, and federal elections; and Soviet and world politics.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

# PSYCHOLOGY (PSY)

Associate Professors: Beery, Drumm-Hewitt, Holstein (Chair)

Assistant Professors: Curtindale, Norton, Vargas

- Major: Psychology
- Courses required for major: 9 (B.A.), 13-14 (B.S.)
- Capstone requirement: PSY 412
- Minor: Psychology

The major provides training in both theoretical and applied psychology. It is designed to meet the needs of students seeking careers in psychology or other natural or social sciences. It also meets the needs of students seeking a better understanding of human behavior as a means of furthering individual and career goals in other areas. Psychology majors and others are urged to discuss course selections in psychology with members of the department to help ensure appropriate course selection.

## Major Requirements

### The B.A. Degree

To earn the B.A. degree in Psychology, students must complete nine courses, distributed as follows:

#### A. Required Core Courses

|         |                                |
|---------|--------------------------------|
| PSY 110 | Introductory Psychology        |
| PSY 212 | Research Methods and Analysis  |
| PSY 412 | Advanced Psychology Research I |

#### B. Biological and Cognitive Foundations (choose one)

|               |                      |
|---------------|----------------------|
| NEURO/PSY 206 | Brain and Behavior   |
| PSY 237       | Cognitive Psychology |

#### C. Developmental and Social Foundations (choose one)

|         |                                |
|---------|--------------------------------|
| PSY 215 | Child & Adolescent Development |
| PSY 217 | Lifespan Development           |
| PSY 244 | Social Psychology              |

#### D. Clinical and Applied Foundations (choose one)

|         |                                        |
|---------|----------------------------------------|
| BUS 244 | Management and Organizational Behavior |
| PSY 216 | Abnormal Child Psychology              |
| PSY 219 | Abnormal Psychology                    |
| PSY 239 | Applied Behavior Analysis              |

#### E. One additional 300-level PSY Course

#### F. Topical Electives (select two courses – at least one must have a PSY prefix)

|         |                      |
|---------|----------------------|
| BUS 228 | Marketing Principles |
|---------|----------------------|

|                                                                    |                                           |
|--------------------------------------------------------------------|-------------------------------------------|
| BUS 244                                                            | Management and Organizational Behavior    |
| BUS 331                                                            | Decision Making                           |
| EDUC 465                                                           | Professional Semester of Student Teaching |
| NEURO 206                                                          | Brain and Behavior                        |
| Any additional PSY courses, including PSY 249 (totaling 4 credits) |                                           |

### **Capstone Requirement**

All majors must successfully complete PSY 412 Advanced Psychology Research I.

### **The B.S. Degree**

It is strongly recommended that students have a math placement level of 3 or 4 if they plan to pursue the B.S. degree. Strong math skills are needed for many of the Natural Science and Computer Science courses required for this degree.

To complete the B.S. degree, students must complete the B.A. requirements as described above and the following additional requirements:

A. A statistics course of at least 3 credits

B. Natural Science Laboratory Courses (choose two):

|              |                                                        |
|--------------|--------------------------------------------------------|
| BIO 110      | Introduction to Biology I                              |
| BIO 111      | Introduction to Biology II                             |
| BIO 323      | Human Physiology                                       |
| BIO 338      | Human Anatomy                                          |
| CHEM 122/123 | General Chemistry I / General Chemistry Laboratory I   |
| CHEM 124/125 | General Chemistry II / General Chemistry Laboratory II |
| NEURO 210    | Introduction to Neuroscience I                         |
| NEURO 211    | Introduction to Neuroscience II                        |
| PHYS 225     | Fundamentals of Physics I                              |
| PHYS 226     | Fundamentals of Physics II                             |

C. Quantitative Courses (choose one):

|          |                                   |
|----------|-----------------------------------|
| CPTR 124 | Programming for Data Science      |
| CPTR 125 | Introduction to Computer Science  |
| MATH 127 | Precalculus                       |
| MATH 128 | Calculus with Analytic Geometry I |
| MATH 214 | Multivariable Statistics          |
| MATH 332 | Mathematical Statistics I         |

D. Advanced research or internship:

|            |                                 |
|------------|---------------------------------|
| PSY 422    | Advanced Psychology Research II |
| PSY 448    | Practicum in Psychology I       |
| PSY 449    | Practicum in Psychology II      |
| PSY N80-89 | Independent Study (4 credits)   |
| PSY N90-91 | Honors Project in Psychology    |



Students may also complete this requirement with four credits of PSY 249 Supervised Research, a supervised internship, Lycoming College summer research fellowship, or an approved REU (research experience for undergraduates) with departmental approval and an Academic Standards Committee appeal.

### **Capstone Requirement**

All majors must successfully complete PSY 412 Advanced Psychology Research I.

### **Minor Requirements**

A minor in psychology consists of PSY 110, PSY 212, and three additional PSY courses. No more than one course can be from PSY 422, 448, 449, independent study, internship, or honors courses.

## **110**

### **INTRODUCTORY PSYCHOLOGY**

An introduction to the empirical study of human and other animal behavior. Areas considered may include learning, personality, social, physiology, sensory, cognition, and development.

*Three hours of lecture and one two-hour laboratory per week.*

## **206**

### **BRAIN AND BEHAVIOR**

An introduction to the biological bases of behavior. Topics include the anatomy, organization, and function of the nervous system; the biological basis of sensation, perception, and movement; and the neural basis of behavior and cognition. *Credit may not be earned for both PSY/NEURO 206 and PSY 433 or NEURO 211. Prerequisite: PSY 110 or consent of instructor. Cross-listed as NEURO 206.*

## **211**

### **LEARNING DISABILITIES**

An examination of learning disabilities, emotional problems, and social problems of children. Topics include the legal and educational rights of children with disabilities, the categories of disability qualifying for Special Education services, assessment of children with learning disabilities, characteristics of and interventions to help children with learning disabilities and attention difficulties, available educational placements and support services, and Individualized Educational Programs (IEPs). *Prerequisite: PSY 110.*

## **212**

### **RESEARCH METHODS AND ANALYSIS**

A study of the scientific method and the role of statistics in psychological research, with a strong focus on understanding and applying statistical concepts. Students compare qualitative methods (e.g. case studies, naturalistic observation) with quantitative approaches (e.g. correlational studies, surveys, experiments, and quasi-experiments) while learning the statistical concepts needed to analyze data and interpret results. This course provides students with the research and analytical skills needed for advanced psychology coursework, independent research, and data-

driven careers in psychology and related fields. *Three hours of lecture and one two-hour laboratory per week. Prerequisites: PSY 110 and a math placement of level 2 or higher.*

## **215**

### **CHILD AND ADOLESCENT DEVELOPMENT**

Examines how children and adolescents grow and develop physically, emotionally, socially, and cognitively. An introduction to theoretical influences, fundamental concepts, and empirical research on development during the infancy, childhood, and adolescent years of life. Reviews the implications of development at different points in life for parenting and education.

Recommended for students pursuing additional education and career paths in fields that focus on childhood and adolescent development. *Credit may not be earned for both PSY 215 and 217.*

*Prerequisite: PSY 110.*

## **216**

### **ABNORMAL CHILD PSYCHOLOGY**

Examines in detail the symptoms, assessment, causes, and treatments for psychological disorders primarily experienced by children and adolescents. These include separation anxiety, Attention Deficit Hyperactivity Disorder (ADHD), oppositional defiant disorder, conduct disorder, learning disabilities, autism, Asperger's disorder, and mental retardation. Also explores the application of specific treatment approaches to children/adolescents for disorders that can be experienced by both children and adults (e.g., phobias, obsessive-compulsive disorder, post traumatic stress disorder, depression, bipolar disorder). Also considers interventions for peer/social problems; physical conditions/illness; traumatic brain injury; and the effects of poverty, divorce, and abuse. *Prerequisite: PSY 110.*

## **217**

### **LIFESPAN DEVELOPMENT**

A general introduction to lifespan development. Provides a broad overview of several areas of development (e.g., physical, cognitive, emotional, social, moral) from prenatal development to death. Recommended for students who are interested in pursuing careers as physical therapists, occupational therapists, physicians' assistants, and other health-related or human service fields. *Credit may not be earned for both PSY 217 and 215. Prerequisite: PSY 110.*

## **219**

### **ABNORMAL PSYCHOLOGY**

An introduction to the patterns of deviant behavior with emphasis on cause, function, and treatment. The various models for the conceptualization of abnormal behavior are critically examined. *Prerequisite: PSY 110.*

## **221**

### **ENVIRONMENTAL PSYCHOLOGY**

Explores the relationship between the individual and the environment. Uses theory and research to explore issues concerning the relationship between the physical environment and human behavior. Environmental Psychology promotes a more socially conscious relationship between humans and our physical environment. Topics include population control, conservation, urbanization, and environmental design. *Prerequisite: PSY 110 or consent of instructor.*

**223**

**FOUNDATIONS OF SPORT AND EXERCISE PSYCHOLOGY**

An introduction to sport and exercise psychology, from the history and development of the field to the theories and principles that are central to its study. Topics include the evolution of the field of sport psychology, theories surrounding sport participants and sport environments, the group processes that are an essential part of sport, the basic principles of performance enhancement within the field, issues related to enhancing health and well-being in sport and exercise, and issues related to the facilitation of psychological growth and development in sport and exercise.

*Prerequisite: PSY 110.*

**225**

**INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY**

The application of the principles and methods of psychology to selected industrial and organizational situations. *Prerequisite: PSY 110 or consent of instructor.*

**237**

**COGNITIVE PSYCHOLOGY**

An introduction to the mental processes that underlie our everyday thinking. We examine how people perceive the world, represent knowledge, store and retrieve memories, use language, reason through complex problems, and make decisions. Emphasis is placed on understanding the scientific nature of the discipline. This course is especially relevant for students interested in psychology, education, communication, or any field where understanding how people think and learn is important. *Prerequisite: PSY 110.*

**239**

**APPLIED BEHAVIOR ANALYSIS**

A detailed examination of the applied analysis of behavior. Focuses on the application of experimental method to the individual clinical case. Covers targeting behavior, base-rating, intervention strategies, and outcome evaluation. Examines learning-based modification techniques such as contingency management, counter-conditioning, extinction, discrimination training, aversive conditioning, and negative practice. *Prerequisite: PSY 110 or consent of instructor.*

**242**

**DRUGS, BEHAVIOR, AND SOCIETY**

Examines the effects of drugs on the brain, behavior, and society. Focuses on legal and illegal psychoactive drugs, including their origins, history of use, mechanisms of action, and physical and behavioral effects. Distinctions are made between drug use, abuse, and addiction, with special emphasis placed on the transition from recreational drug use to addiction. Various approaches to the prevention and treatment of addiction are discussed, and the societal impact of drug use and addiction, including their intersection with the criminal justice system, are explored. Students are encouraged to think critically about drug use and its impact on society.

*Prerequisite: PSY 110 or consent of instructor.*

**244****SOCIAL PSYCHOLOGY**

An introduction to the influence of social environments on our own and others' thoughts, feelings, and behaviors. Students learn to apply psychological principles to everyday social situations and develop a basic understanding of the research methodology and ethical principles used to study social behavior. Topics may include attitudes, social perception, interpersonal relationships, group processes, conformity, persuasion, prejudice, aggression, and prosocial behavior. *Credit may not be earned for both PSY 244 and 424. Prerequisite: PSY 110 or consent of instructor.*

**245****CROSS-CULTURAL PSYCHOLOGY: SPECIAL TOPICS**

An introduction to the field of cross-cultural psychology that examines how cultural factors influence various aspects of the human experience. Topical focus of the course will vary according to the instructor. May be repeated for credit when topics are different. *Fulfills Global Cultural Diversity Requirement.*

**249****SUPERVISED RESEARCH IN PSYCHOLOGY**

Students work with a faculty member to conduct research in the field of psychology. Research activities may include conducting literature reviews, assisting with data collection, data entry and analyses, or other activities detailed via contract with the instructor. *Prerequisites: PSY 110, either a 200-level PSY course or NEURO 206, and consent of instructor. May be repeated for credit with consent of the instructor. 0.5-2 credits.*

**310****FORENSIC PSYCHOLOGY**

An examination of psychological theories and research on topics related to psychology and law. Areas covered include forensic pathology, psychological theories of criminal behavior, eyewitness testimony, jury decision making, expert witnesses, the insanity defense, and criminal profiling analysis. *Prerequisites: PSY 110 and either a 200-level PSY course or NEURO 206.*

**312****PSYCHOLOGY RESEARCH PROSEMINAR**

Students are led through the process of independent research from conception of research, development of design, conduction, analysis, and presentation of work. Students are supervised as they devise and conduct their own research projects. *Prerequisites: PSY 110, a statistics course of at least 3 credits, and grade of C- or better in PSY 212, or consent of instructor.*

**313****COGNITIVE DEVELOPMENT**

An examination of cognitive development from infancy to adolescence through the analysis of primary scientific research. Emphasis is placed on both classic and current experimental findings, methodology, and theoretical influences. Topics may include development of perception, attention, learning, memory, language, problem solving, and social cognition. *Prerequisites: PSY 110 and either a 200-level PSY course or NEURO 206.*

**314****DYSFUNCTIONAL FAMILIES AND CHILD DEVELOPMENT**

Explores the relations between a variety of types of family dysfunctions and child development and psychopathology. Topics include child abuse, neglect, sexual abuse, and children from violent homes and homes with mentally ill parents. The course focuses on empirical literature about dysfunctional families and child development, biographical, and political perspectives.

*Prerequisites: PSY 110 and either a 200-level PSY course or NEURO 206.*

**315****CLINICAL NEUROSCIENCE**

An examination of the structure and function of the human nervous system through the exploration of neurological and psychiatric disorders. This course provides students with an in-depth analysis of the symptoms, etiology, and treatment of various neurological and psychiatric disorders through the analysis of case studies and primary scientific research. *Prerequisite: PSY 110 and either a 200-level PSY course or NEURO 206.*

**317****ATTACHMENT ACROSS THE LIFESPAN**

Attachment refers to the emotional bonds that we form with other individuals. These “bonds” are more than mere “ties” to others—according to attachment theory, our attachment to others influences our self-perceptions, social cognition, and social interaction. This class is an upper-level seminar where students engage in an in-depth exploration of the literature pertaining to attachment from infancy into adulthood. Students complete advanced readings, are actively engaged in in-class discussions, and make several in-class presentations. *Prerequisite: PSY 110.*

**320****PSYCHOLOGY OF LANGUAGE**

A study of how people learn, understand, and use language. Students explore the mental and brain processes that make language possible, drawing on research from psychology, linguistics, and neuroscience. Topics may include how children acquire language; how people perceive and produce speech; and how we recognize words, build sentences, and interpret meaning. Students also explore ideas such as embodied cognition and brain-based approaches to language. This course is especially valuable for students interested in education, speech-language pathology, child development, or any field where language and learning matter. *Prerequisites: PSY 110 and either a 200-level PSY course or NEURO 206.*

**322****SENSATION AND PERCEPTION**

A seminar exploring how our senses gather information from the world and how the brain processes that information into meaningful experiences. Drawing on research from psychology and neuroscience, the course offers insight into the strengths and limits of human perception. The course is valuable for students interested in psychology, neuroscience, communication, or fields where understanding how people experience the world can make a difference. *Prerequisites: PSY 110 and either a 200-level PSY course or NEURO 206.*

**325****COGNITIVE NEUROSCIENCE**

An exploration of how the brain makes complex mental processes such as learning, memory, attention, and perception possible. Students gain an understanding of how neurons and neural networks support these functions and how psychologists and neuroscientists study them. By combining perspectives from psychology, neuroscience, and cognitive science, the course provides a more in-depth look at how the brain and mind work together. *Prerequisites: PSY 110 and either a 200-level PSY course or NEURO 206.*

**340****SPECIAL TOPICS IN PSYCHOLOGY**

An in-depth study of a selected psychological subfield, problem, or topic. Possible topics include addiction, prejudice, and positive psychology. *May be repeated for credit when topics are different. Prerequisites: PSY 110 and either a 200-level PSY course or NEURO 206.*

**341****PSYCHOLOGY OF GENDER AND GENDER IDENTITY**

A review of contemporary theory and research on the psychology of gender differences. Special topics include sex differences in achievement, power, and communication; sex-role stereotypes; beliefs about masculinity and femininity; and gender influences on mental health. *Prerequisites: PSY 110 and either a 200-level PSY course or NEURO 206. Fulfills either Domestic or Global Cultural Diversity Requirement.*

**342****HEALTH PSYCHOLOGY**

Serves as an introduction to the field of Health Psychology, which is concerned with the role of biological, social, and psychological factors in health and illness. Addresses the relevant research methodology and ethical considerations of four general topic areas: 1) attitudes, behaviors, and lifestyle factors affecting disease prevention and development; 2) stress and the related personality and social processes associated with disease development and progression; 3) social and psychological implications of chronic illness; and 4) social and psychological factors involved in the illness experience. *Prerequisite: PSY 110 or consent of instructor.*

**344****THE PSYCHOLOGY OF CLOSE RELATIONSHIPS**

An examination of the demographic, psychological, social, and behavioral factors that affect the development, maintenance, and dissolution of close relationships. Students explore the methodological and ethical considerations of research on interpersonal relationships. Topics may include attraction, love and attachment, communication, interdependency, and conflict. *Prerequisites: PSY 110 and either a 200-level PSY course or NEURO 206.*

**412****ADVANCED PSYCHOLOGY RESEARCH I**

An introduction to the process of independent research. Students are guided through the process of developing a research question and designing a study, collecting and analyzing data, and presenting their findings in oral and written forms. Students gain hands-on experience in each

step of the research cycle. Emphasis is placed on critical thinking, methodological rigor, and effective communication of results. *Prerequisites: PSY 110, a grade of C- or better in PSY 212, and one 300-level PSY course, or consent of instructor.*

#### **422**

##### **ADVANCED PSYCHOLOGY RESEARCH II**

Provides additional experience with independent research. This course guides students through the process of developing a research question and designing a study, collecting and analyzing data, and presenting their findings. Students are supervised as they design and conduct their own research projects; however, students work more independently than in PSY 412. *Prerequisites: PSY 412 and consent of instructor.*

#### **424**

##### **ADVANCED SOCIAL PSYCHOLOGY**

The scientific exploration of interpersonal communication and behavior. Topics include attitudes and attitude change, attraction and communication, social perception and social influence, prosocial and antisocial behavior, and group processes. *Three hours of lecture and one two-hour laboratory per week. Prerequisite: A grade of C- or better in 312 and a statistics course of at least 3 credits, or consent of instructor.*

#### **433**

##### **BIOLOGICAL PSYCHOLOGY**

An introduction to the biological psychologist's method of approach to the understanding of behavior as well as the set of principles that relate the function and organization of the nervous system to the phenomena of behavior. *Three hours of lecture and one two-hour laboratory per week. Prerequisite: A grade of C- or better in 312 and a statistics course of at least 3 credits, or consent of instructor.*

#### **448**

##### **PRACTICUM IN PSYCHOLOGY I**

An off-campus experience in a community setting offering psychological services, supplemented with classroom instruction and discussion. Covers the basic counseling skills. *Prerequisite: Consent of instructor.*

#### **449**

##### **PRACTICUM IN PSYCHOLOGY II**

An off-campus experience in a community setting offering psychological services, supplemented with classroom instruction and discussion. Covers the major theoretical approaches to counseling. *Prerequisite: PSY 448 or consent of instructor.*

#### **470-479**

##### **INTERNSHIP**

Internships give students an opportunity to relate on-campus academic experiences to society in general and to their post-baccalaureate objectives in particular. Students have, for example, worked in prisons, public and private schools, county government, and for the American Red Cross.

**N80-N89****INDEPENDENT STUDY**

Independent study is an opportunity for students to pursue special interests in areas for which courses are not offered. In addition, students have an opportunity to study a topic in more depth than is possible in the regular classroom situation.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

Honors in psychology requires original contributions to the literature of psychology through independent study.



# **PUBLIC POLICY**

Associate Professor: Payne (Coordinator)

Students may select either the Domestic Public Policy or International Public Policy minor.

## **Domestic Public Policy Minor**

Students are required to take PSCI 110, PSCI 220, either ECON 110 or 111, and MATH 123 or MATH 214. Students intending to pursue graduate work are strongly encouraged to enroll in MATH 214 and at least one social science research methods course. In addition to these four core courses, students are also required to take three electives from the following list. The three electives must be from three different departments, and at least one elective course must be numbered 300 or above. Only one elective may count toward any other major or minor program of student study.

### **Domestic Public Policy Electives:**

|          |                                               |
|----------|-----------------------------------------------|
| CJCR 201 | Policing and Society                          |
| CJCR 203 | Correctional Systems                          |
| CJCR 300 | Criminology                                   |
| CJCR 341 | Crime Prevention                              |
| ECON 224 | Urban Economics                               |
| ECON 225 | Environmental Economics                       |
| ECON 337 | Public Finance                                |
| HIST 230 | African American History                      |
| HIST 338 | Rights, Reform, and Protest                   |
| HIST 404 | Modern America                                |
| PHIL 334 | Contemporary Political Philosophy             |
| PSCI 211 | State and Local Government                    |
| PSCI 231 | Law in America                                |
| PSCI 316 | Public Opinion and Polling                    |
| SOC 210  | Sociology of Mental Health                    |
| SOC 228  | Aging and Society                             |
| SOC 310  | Sociology of Health, Illness, and Health Care |
| SOC 334  | American Immigration                          |

## **International Public Policy Minor**

Students are required to take PSCI 140 or PSCI 160, PSCI 261, ECON 110, and MATH 123 or MATH 214. Students intending to pursue graduate work are strongly encouraged to enroll in MATH 214 and at least one social science research methods course. In addition to these four core courses, students are also required to take three electives from the following list. The three electives must be from three different departments. Only one elective may count toward any other major or minor program of student study.

### **International Public Policy Electives:**

|          |                       |
|----------|-----------------------|
| ANTH 103 | Cultural Anthropology |
|----------|-----------------------|

|          |                                   |
|----------|-----------------------------------|
| ANTH 230 | Anthropology of Latin America     |
| ANTH 232 | Environmental Anthropology        |
| ANTH 334 | Economic Anthropology             |
| ECON 343 | International Trade               |
| HIST 217 | 20th Century Europe               |
| HIST 232 | Rise of Islam                     |
| HIST 243 | Asia in a Global Context          |
| HIST 246 | Africa and the World              |
| PHIL 334 | Contemporary Political Philosophy |
| PSCI 242 | Human Rights                      |
| PSCI 245 | Latin American Politics           |
| PSCI 341 | Gender and the Law                |
| PSCI 342 | Civil Conflict                    |

## RELIGION (REL, GRK, HEBR, LAT)

Professor: S. Johnson

Associate Professor: Heyes (Chair)

Assistant Professor: Knauth

Instructors: Karl, McNassor

- Major: Biblical Studies, Religion
- Courses required for Biblical Studies, Religion: 10
- Capstone requirement for Biblical Studies: REL 433, Essay in self-understanding, Oral Defense
- Capstone requirement for Religion: REL 447, Essay in self-understanding, Oral Defense
- Minors: Religion, Biblical Languages, Biblical Studies

The Religion Department offers two majors: Biblical Studies and Religion. The major in Religion encourages exploration into personal questions of living such as “Who are we?” “Does life have meaning or purpose?” and “Is there an ultimate reality?” At the same time, students are encouraged to consider the public effects of religion on the world: “How do people act religiously?” “How does religion impact politics, society, and conflict?” and “What does it mean to be a ‘secular’ society?” The Biblical Studies major is designed especially for pre-ministerial students and students interested in the critical, analytical study of texts held sacred in Judeo-Christian traditions.

## RELIGION (REL)

### Major Requirements

A major in Religion consists of 10 courses, including:

#### **A. Four core courses in the comparative study of religion:**

|         |                                 |
|---------|---------------------------------|
| REL 110 | Introduction to World Religions |
| REL 220 | What Is Religion?               |
| REL 320 | Topics in Comparative Religion  |
| REL 447 | Research in Religion            |

#### **B. One course in analysis of scriptures from the following:**

|         |                                   |
|---------|-----------------------------------|
| REL 113 | Introduction to the Old Testament |
| REL 114 | Introduction to the New Testament |

#### **C. One additional course in analysis of scriptures from the following:**

|         |                      |
|---------|----------------------|
| REL 237 | What is Justice?     |
| REL 333 | Old Testament Women  |
| REL 337 | Biblical Topics      |
| REL 433 | The Sayings of Jesus |

**D. Take four additional courses from the following:**

Any REL course

|          |                                                       |
|----------|-------------------------------------------------------|
| GRK 221  | Readings in the Synoptic Gospels                      |
| GRK 222  | Readings in the Pauline Epistles                      |
| HEBR 221 | Readings in the Biblical Hebrew Narrative             |
| HEBR 222 | Readings in the Prophetic Books and Wisdom Literature |
| HIST 232 | The Rise of Islam                                     |
| PHIL 202 | Medieval Philosophy                                   |
| PHIL 227 | Religion and Reason                                   |
| PHIL 228 | Philosophy and the Environment                        |

## **BIBLICAL STUDIES**

### **Major Requirements**

A major in Biblical Studies consists of 10 courses, including:

A. Required courses:

|         |                                   |
|---------|-----------------------------------|
| REL 113 | Introduction to the Old Testament |
| REL 114 | Introduction to the New Testament |
| REL 433 | The Sayings of Jesus              |

B. Three courses from:

|         |                                                                   |
|---------|-------------------------------------------------------------------|
| REL 237 | What is Justice?                                                  |
| REL 333 | Old Testament Women                                               |
| REL 337 | Biblical Topics (which can be repeated when topics are different) |

C. One comparative religions elective from:

|         |                                 |
|---------|---------------------------------|
| REL 110 | Introduction to World Religions |
| REL 220 | What is Religion?               |
| REL 320 | Topics in Comparative Religion  |

D. One biblical backgrounds elective from:

|              |                                                 |
|--------------|-------------------------------------------------|
| REL 221      | The Hellenistic-Roman World                     |
| REL/ARCH 226 | Archaeology of Ancient Israel and Its Neighbors |
| REL 228      | History and Culture of the Ancient Near East    |
| REL 401      | Field Archaeology                               |

E. Two additional electives in REL; or GRK 101 and 102; or HEBR 101 and 102.

The following courses are recommended for students considering running a church or nonprofit: one or both biblical languages, REL 120, CMS 221, PSY 110, BUS 228 or 244, and/or a church or non-profit internship (REL 470).

### **Capstone Requirements**

Biblical studies majors must complete REL 433, and Religion majors must complete REL 447. Both majors must also write an essay in self-understanding and arrange an oral defense with the department faculty, consisting of an assessment interview occurring during the last two months of the final semester.

REL 120 is strongly recommended for pre-ministerial students after their first year, regardless of their major.

### **Minor Requirements**

A minor in **Religion** consists of five courses: one course from REL 110, 113, or 114; and four REL courses numbered 200 or above. Of these, at least one course must be taken from REL 110, 210, 211, 212, 220, 225, or 320.

A minor in **Biblical Studies** consists of REL 113 and 114 and 3 courses from REL 237, 333, 337, and 433 (REL 337 may be repeated with different topics; one course from GRK 221, GRK 222, HEBR 221, or HEBR 222 may be substituted for an upper-level scriptures course).

An interdisciplinary minor in **Biblical Languages** requires the completion of GRK 101, 102; HEBR 101, 102; and two from GRK 221, GRK 222, HEBR 221, and HEBR 222.

### **110**

#### **INTRODUCTION TO WORLD RELIGIONS**

An introductory, interdisciplinary examination of the phenomena we have come to associate with “religion.” Students become familiar with the worldviews of the major world religions and engage in comparative analysis of these traditions’ texts and practices. The course also looks at the interconnection between religion and other elements of life, as well as the ways in which our own worldviews influence our understanding of religion. *Fulfills either Domestic or Global Cultural Diversity Requirement.*

### **112**

#### **BIBLE ACCORDING TO HOLLYWOOD**

The Bible is a collection of sacred literature reflecting the culture, history, and theology of its various authors, which has been foundational to Western culture. It is also an expression of religious faith, and its many stories have provided inspiration and material for a variety of theatrical and artistic portrayals, songs, films and television productions – historically through time as well as in today’s popular media. Students discuss a selection of these in relation to the biblical text itself and in relation to each other, seeking to understand the intended underlying messages/purposes both within and beyond the biblical texts, and the significance of varying interpretations through time. *Fulfills Global Cultural Diversity Requirement.*

### **113**

#### **INTRODUCTION TO THE OLD TESTAMENT**

Who are we? Who is God? Who are we in relation to God? Human grappling over centuries with these and many other questions about the nature of God and the world are reflected in the collection of laws, stories, and other writings that eventually became the Jewish/Hebrew Bible

(Christian Old Testament). This course engages students in a critical examination of this literature in the light of archaeology, and in its historical, cultural, literary, and theological contexts to promote understanding of the scriptures.

## **114**

### **INTRODUCTION TO THE NEW TESTAMENT**

Who is Jesus? What did he teach? What was his relationship to God? His early followers grappled with these questions, and some of their writings became the Christian New Testament. This course engages students in a critical examination of this literature in its historical and cultural setting and provides an introduction to methods of analyzing and interpreting the texts.

## **120**

### **DEATH AND DYING**

A study of death from personal, social, and universal standpoints with emphasis upon what the dying may teach the living. Principal issues are the stages of dying, bereavement, suicide, funeral conduct, and the religious doctrines of death and immortality. Includes optional practical projects with terminal patients under professional supervision.

## **122**

### **WHERE DO WE GO FROM HERE?**

An examination of the question of life after death in terms of contemporary research, ancient Near Eastern concepts of death and afterlife, Asian concepts of rebirth and reincarnation, the Greco-Roman religious and philosophical traditions, the biblical concepts of resurrection and ascension, mysticism, purgatory, science, spiritualism, out-of-body experiences, living ancestors, and more. *Fulfills either Domestic or Global Cultural Diversity Requirement.*

## **210**

### **JUDAIC STUDIES: FROM THE EXODUS TO THE ROMANS**

An examination of the Jewish vision of the foundation stories, the history, and the impact of events upon the Jewish worldview. The sources of the Bible are examined in detail, and the changing self-perception of the Israelites is a major focus. This period is formative in the development of what will become the Jewish People. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

## **211**

### **JUDAIC STUDIES: TALMUD TO TODAY**

An examination of the development of Jewish traditions from the destruction of the second temple in 70 C.E. to the present day. Particular attention is paid to the relationship between the living situations of Jews in the Diaspora to the development of interpretation of Jewish law. *Fulfills either Domestic or Global Cultural Diversity Requirement. Alternate years.*

## **212**

### **ISLAM**

A comprehensive examination of the many religious dimensions of Islam, including the life of Muhammad, key textual sources such as the Quran and Hadith, basic beliefs and practices, Sufism, Muslim theology, differences between Sunni and Shi'ite interpretations of the faith, the

historical evolution of Islam and its interaction with other cultures, and the theological and socio-political roots of the recent worldwide resurgence of Islam. *Fulfills either Domestic or Global Cultural Diversity Requirement. Alternate years.*

### **213**

#### **MEDIEVAL WOMEN'S RELIGIOUS LITERATURE**

This course challenges traditional stereotypes of women of the Middle Ages. In this course, we explore writing by women and about women with a particular focus on the High Middle Ages. This offers the opportunity to challenge assumptions about women's roles in the Middle Ages and to understand women in the period as well-educated, powerful, and able to effect change on a continental scale. *Fulfills the Global Cultural Diversity Requirement.*

### **214**

#### **CONSTRUCTING GENDER IN CHRISTIANITY**

Religion is a significant contributing factor to the idea of gender in societies. This course explores the development of gender in Christianity from its antique infancy to its influence upon contemporary gender norms in the US. Particular attention is paid to the formative periods in the Middle Ages which established prevailing conceptions of gender that continue to influence the modern world. *Fulfills either Domestic or Global Cultural Diversity Requirement.*

### **219**

#### **SPECIAL TOPICS IN RELIGION**

Study of selected topics in religion. May be repeated for credit with consent of instructor when topics are different. Credit may not be earned for both REL 219 and 320 or 337 on the same topic.

### **220**

#### **WHAT IS RELIGION?**

Introduces students to the academic study of religion. Religious thought and behavior are examined from a variety of methodological perspectives, and students gain experience working with theorists common to the discipline of Religious Studies.

### **221**

#### **THE HELLENISTIC-ROMAN WORLD**

A survey of historical, cultural, and religious aspects of the eastern Mediterranean world that helped shape the development of second-temple Judaism and early forms of Christianity. Topics include political history, patronage and other Roman social structures, education, rhetoric, literature, philosophy, and Hellenistic-Roman modes of religious expression, including Judaism, the mysteries, and imperial religion. *Fulfills Global Cultural Diversity Requirement.*

### **225**

#### **ASIAN RELIGIONS**

A phenomenological study of the basic content of Hinduism, Buddhism, and Chinese Taoism with special attention to social and political relations, mythical and aesthetic forms, and the East-West dialogue. *Fulfills either Domestic or Global Cultural Diversity Requirement. Alternate years.*

**226**

**ARCHAEOLOGY OF ANCIENT ISRAEL AND ITS NEIGHBORS**

A brief introduction to basic archaeological method as currently practiced in the eastern Mediterranean region and an in-depth study of the typological development of architecture, mortuary practices, artifacts and material culture of ancient Israel and Canaan (the land of the Bible) from representative excavations through different historical periods. Special attention is given to the role of archaeology in reconstructing the world in which biblical literature originated, along with archaeological results that help illuminate or clarify the biblical text. *Cross-listed as ARCH 226. Fulfills Global Cultural Diversity Requirement. Alternate years.*

**227**

**EARLY HISTORY AND THEOLOGIES OF CHRISTIANITY**

Traces the development of Christianity from the early Jesus movements up to the post-Constantinian, institutional Church. Issues include early apostolic preaching; the formation of the New Testament canon; the structuring of the community; and controversies regarding the person and nature of Christ, the trinity, the nature of salvation, and the sacraments.

**228**

**HISTORY AND CULTURE OF THE ANCIENT NEAR EAST**

A study of the history and culture of Mesopotamia, Anatolia, Syria-Palestine, and Egypt from the rise of the Sumerian culture to Alexander the Great. Careful attention is given to the religious views prevalent in the ancient Near East as far as these views interacted with the culture and faith of the biblical tradition. *Fulfills Global Cultural Diversity Requirement. Alternate years.*

**231**

**MAGIC AND MYTH IN POPULAR CULTURE**

Explores elements of popular culture in the contemporary United States and the religious and historical aspects that contribute to their creation. Specifically, it aims to trace the under-acknowledged mythical material from the Middle Ages and Antiquity that develops into the present representations of beings such as vampires, zombies, werewolves, wizards, and others. *Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

**232**

**RELIGION AND FILM**

From film to works of literature, stories have the power to shape what we believe and why we believe it. Given this, the course begins with a simple premise: religion not only influences our perception of media, but media also influence our perception of religion. In this course, we investigate the way in which popular media both make use of religious ideas and themes and create them. *Fulfills Domestic Cultural Diversity Requirement. Alternate years.*

**233**

**ARCHAEOLOGY OF RITUAL**

In-depth cross-cultural study of the archaeological remains of ancient ritual practices. While the meaning of ancient rituals is not directly accessible to us today, archaeologists study the spaces, objects, actors, and material residues of past ritual practices to understand their role and significance in past societies. Case studies drawn from the ancient Near East, Mediterranean, and



the Americas. *Cross-listed as ANTH 233 and ARCH 233. Fulfills Global Cultural Diversity Requirement. Alternate years.*

### **234**

#### **ANGELS AND DEMONS**

What is an angel? What is a demon? This course comparatively views the two categories as they appear in the Abrahamic Traditions (Judaism, Christianity, and Islam). Our study marches from Hebrew Bible through the development of Christianity, the rise of Islam, and all the way to the contemporary United States. *Fulfills either Domestic or Global Cultural Diversity Requirement. Alternate years.*

### **237**

#### **WHAT IS JUSTICE?**

Focuses on the nature of "Justice" in today's world as informed by biblical texts. How can we recognize injustice in our society? On what basis do we judge right from wrong – not only for individual actions, but also for wider systems of governance? Students examine foundational legal principles in biblical laws and stories along with the ancient Near Eastern law codes that shaped them, comparing them with modern concepts of justice to see how those principles can be applied to a variety of tough issues today. Topics addressed include capital punishment and euthanasia, wealth distribution and economic injustice, systems of retribution vs. restitution, systemic biases and incentives, problems of proportionality, bribery and false testimony, standards of evidence, and the role of legal precedent. *Alternate years.*

### **320**

#### **TOPICS IN COMPARATIVE RELIGION**

A topics course with a comparative religion focus. Possible topics include mysticism, magic, monstrosity, sacrifice, and religion and gender. *Prerequisite: REL 110, 220, or consent of instructor./\* May be repeated for credit with consent of instructor when topics are different. Fulfills either Domestic or Global Cultural Diversity Requirement.*

### **333**

#### **OLD TESTAMENT WOMEN**

An in-depth study of a variety of biblical texts and themes relevant to the roles and character of women in the Old Testament, including selections from Genesis, Ruth, Esther, Song of Songs, Proverbs (esp. ch. 31), and the songs of Deborah and Miriam. Also considers excerpts from the prophecies of Hosea and Ezekiel. *Fulfills either Domestic or Global Cultural Diversity Requirement. Alternate years.*

### **337**

#### **BIBLICAL TOPICS**

An in-depth study of biblical topics related to the Old and New Testaments. Recent topics include Exodus, King David, Kingship Ideologies, and The Gospels of Mark and Thomas. *May be repeated for credit with consent of instructor when topics are different.*

**401****FIELD ARCHAEOLOGY**

Participation in an approved archaeological dig, survey, or field research program, usually in the Near East or Mediterranean region. Includes instruction in excavation or survey techniques, recording and processing of artifacts, and exposure to the wider results of related excavation and research and the use of archaeology as a tool for elucidating historical and cultural changes. This course acquaints students with the basic techniques and procedures used in modern archaeology through intensive hands-on fieldwork. *Cross-listed as ARCH 401 and ANTH 401. Students desiring credit toward the Religion major or Humanities Distribution Requirement should register for REL 401; students desiring credit toward the Social Science Distribution Requirement or majors in Anthropology or Archaeology may register for either ANTH 401 or ARCH 401. Fulfills Global Cultural Diversity Requirement. Special fees apply. May Term or Summer Sessions only.*

**433****THE SAYINGS OF JESUS**

An exploration of the ways in which early followers understood the nature and person of Jesus of Nazareth through their appropriation and interpretation of his teachings. An examination of the means and methods by which the teachings of Jesus were passed down from community to community and adapted to changing social and theological contexts in the first centuries of the Christian era. *Prerequisite: REL 113, 114, or consent of instructor. Alternate years.*

**447****RESEARCH IN RELIGION**

Explores a particular comparative topic, tradition, or time-period. Students engage in a scholarly manner with the topic under consideration, produce a well-researched paper, and present that research in a conference-style format. *Prerequisites: REL 220 and 320, or consent of instructor. May be repeated for credit with consent of instructor when topics are different.*

**470-479****INTERNSHIP**

Interns in religion usually work in local churches, hospitals, or other religion-based organizations or programs under the supervision of the pastor, chaplain, or supervisor and a member of the faculty.

**N80-N89****INDEPENDENT STUDY**

Current study areas are in the biblical languages, biblical history and theology, biblical archaeology, comparative religion, and the ethics of technology.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

## ANCIENT LANGUAGES

Greek, Hebrew, and Latin satisfy the Modern and Ancient Language Distribution Requirement, not the Humanities Distribution Requirement. They are not offered as majors. An interdisciplinary minor in Biblical Languages requires the completion of GRK 101 and 102; HEBR 101 and 102; and two from GRK 221, GRK 222, HEBR 221, and HEBR 222.

### GREEK (GRK)

#### 101

##### BIBLICAL GREEK GRAMMAR AND READINGS I

Fundamentals of biblical Greek grammar, with an emphasis on the writings of the Greek New Testament. *Alternate years.*

#### 102

##### BIBLICAL GREEK GRAMMAR AND READINGS II

Continuation of fundamentals of biblical Greek grammar, with readings from selected passages of the Greek New Testament. Introduction to the use of lexicons, library resources, and the critical apparatus of the UBS *Greek New Testament* for word study and exegesis. *Prerequisite: GRK 101 or equivalent or consent of instructor. Alternate years.*

#### 221

##### READINGS IN THE SYNOPTIC GOSPELS

A comparative study of the synoptic tradition in Greek. *Prerequisite: GRK 102 or equivalent or consent of instructor. Alternate years.*

#### 222

##### READINGS IN THE PAULINE EPISTLES

Selected readings from the letters of Paul in Greek with a focus on the translation of one letter in its entirety. *Prerequisite: GRK 221 or equivalent or consent of instructor. Alternate years.*

### HEBREW (HEBR)

#### 101

##### BIBLICAL HEBREW GRAMMAR AND READINGS I

Fundamentals of biblical Hebrew grammar and readings of selected passages of the Hebrew Bible. *Alternate years.*

#### 102

##### BIBLICAL HEBREW GRAMMAR AND READINGS II

Continuation of fundamentals of biblical Hebrew grammar and readings of selected passages of the Hebrew Bible. Introduction to the use of lexicons, library resources, and the critical apparatus of BHS for word study and exegesis. *Prerequisite: HEBR 101 or equivalent or consent of instructor. Alternate years.*

**221****READINGS IN BIBLICAL HEBREW NARRATIVE**

A critical reading of the Hebrew text of selected narrative portions of the Old Testament with special attention being given to exegetical questions. The texts vary from year to year.

*Prerequisite: HEBR 102 or equivalent or consent of instructor. Alternate years.*

**222****READINGS IN THE PROPHETIC BOOKS AND WISDOM LITERATURE**

A critical reading of the Hebrew text of selected portions of Old Testament prophecy and wisdom literature, with special attention being given to poetic texts and to exegetical questions. The texts vary from year to year.

*Prerequisite: HEBR 221 or equivalent or consent of instructor. Alternate years.*

**LATIN (LAT)****101****LATIN GRAMMAR AND READINGS I**

Fundamentals of classical Latin grammar and readings of selected passages from Latin authors.

**102****LATIN GRAMMAR AND READINGS II**

Continuation of fundamentals of classical Latin grammar and readings of selected passages from Latin authors. *Prerequisite: LAT 101 or equivalent or consent of instructor.*

**221****LATIN READINGS AND CULTURE I**

Readings in a variety of classical Latin texts, including a brief grammar review. *Prerequisite: LAT 102 or equivalent or consent of instructor.*

**222****LATIN READINGS AND CULTURE II**

Readings in a variety of classical Latin texts, including the study of Latin inscriptions. *Prerequisite: LAT 221 or equivalent or consent of instructor.*

## **SCHOLARS PROGRAM (See Lycoming Scholars)**

# SOCIAL AND ECONOMIC JUSTICE

Associate Professors: Adams (Coordinator), Yingling (Coordinator)

The Social and Economic Justice minor is designed to provide students with a framework to address the causes, consequences, and expressions of social and economic inequalities.

## Minor Requirements

### 1. One core course from:

- SOC 240 Sociology of Race and Ethnicity
- SOC 241 Sociology of Gender and Sexuality

### 2. One course from the list below:

- AMST 200 Perspectives on America
- ARHI 339 Gender and Sexuality in Art
- ARHI 342 Art and Politics in Latin America
- ARHI 344 Race and Ethnicity in US-American Art
- HIST 217 20th Century Europe
- HIST 221 Latin America
- HIST 226 Era of the American Revolution
- HIST 230 African American History
- HIST 233 Civil War and Reconstruction
- HIST 242 Vietnam War at Home and Abroad
- HIST 243 Asia in Global Context
- HIST 244 The Pacific World
- HIST 246 Africa and the World
- HIST 324 Early American Law and Society
- HIST 329 Empires and Resistance
- HIST 338 Rights, Reform, and Protest
- HIST 342 Women and Reform
- PHIL 125 Introduction to Political Philosophy
- PHIL 334 Contemporary Political Philosophy

### 3. One course from the list below:

- ANTH 210 Talking Trash
- ANTH 230 Anthropology of Latin America
- ANTH 232 Environmental Anthropology
- ANTH 311 Power and Prestige
- CJCR 201 Policing and Society
- CJCR 203 Correctional Policy
- CJCR 210 Introduction to the Administration of Justice
- CJCR 211 Ethics in Criminal Justice
- CJCR 213 Justice in Popular Culture and Media
- CJCR 223 Human Trafficking
- CJCR 334 Race, Class, Gender, and Crime

|          |                                           |
|----------|-------------------------------------------|
| PSCI 231 | Law in America                            |
| PSCI 242 | Human Rights                              |
| PSCI 245 | Latin American Politics                   |
| PSCI 260 | Globalization and Sustainable Development |
| PSCI 331 | Civil Rights and Liberties                |
| PSCI 341 | Gender and the Law                        |
| PSCI 342 | Civil Conflict                            |

**4. One course from the list below:**

|          |                                          |
|----------|------------------------------------------|
| ANTH 334 | Economic Anthropology                    |
| BUS 300  | Business and Society                     |
| BUS 320  | Social Entrepreneurship                  |
| ECON 110 | Principles of Macroeconomics             |
| ECON 224 | Urban Economics                          |
| ECON 225 | Environmental and Resource Economics     |
| ECON 226 | American Economic History                |
| ECON 332 | Government and the Economy               |
| ECON 335 | Labor Economics                          |
| ECON 337 | Public Economics                         |
| ECON 343 | International Trade                      |
| ENTR 320 | Social Entrepreneurship                  |
| HIST 200 | Energy, Security, and Global Competition |

**5. Any two additional elective courses from those listed above or below:**

|          |                                                                                   |
|----------|-----------------------------------------------------------------------------------|
| ARCH 210 | Talking Trash                                                                     |
| ARCH 311 | Power and Prestige                                                                |
| BIO 108  | Public Health                                                                     |
| CMS 324  | Public Relations                                                                  |
| CMS 349  | Political Communication                                                           |
| CEAE 220 | Civic Engagement                                                                  |
| EDUC 233 | Teaching Culturally and Linguistically Diverse Learners in the Dominican Republic |
| ENGL 229 | African American Literature                                                       |
| ENV 215  | Introduction to Geographic Information Systems (GIS)                              |
| ENV 220  | Environmental Biology                                                             |
| FILM 212 | Multicultural America on Screen                                                   |
| FILM 300 | Film and Social Change                                                            |
| FVA 330  | Documentary Filmmaking                                                            |
| GSWS 200 | Gendered Perspectives                                                             |
| SOC 222  | Introduction to Human Services                                                    |
| SOC 240  | Sociology of Race and Ethnicity                                                   |
| SOC 241  | Sociology of Gender and Sexuality                                                 |
| SOC 334  | American Immigration                                                              |

**SOCIOLOGY (See Anthropology and Sociology)**

**SPANISH (See Modern Language Studies)**



## **SPORT MANAGEMENT (SMGT)**

Coordinator: Mark Zajack (Associate Professor)

- Major: Sport Management
- Courses required for major: 11
- Capstone: SMGT 440

The major in Sport Management provides a strong focus on foundational theories, interdisciplinary knowledge, and practical application in the sports industry. Students will develop business, leadership, and communication skills and gain a broad understanding of the social and cultural contexts in which those skills are applied. A focus on ethical approaches to management provides students with the knowledge and strategies to promote gender and racial equity across sports organizations. The core of the major addresses key administrative, monetary, and legal aspects of the sports industry along with an emphasis on gaining significant practical experience with sports organizations.

In addition, the interdisciplinary nature of the major encourages students to explore their individual areas of interest. A student interested in the business aspects of sport may take electives in areas such as marketing, finance, economics, accounting, and communication. Students interested in human performance and leadership may take electives in management, psychology, sociology, exercise science, and anthropology. Sport management majors engage in critical thinking, writing, and interdisciplinary coursework that strengthens their ability to analyze complex issues. This major prepares students for diverse careers in the sport industry by combining practical, industry-focused learning with the adaptability and perspective that defines a liberal arts education.

### **Major Requirements:**

#### **Core courses:**

|          |                                             |
|----------|---------------------------------------------|
| SMGT 110 | Introduction to Sport Management            |
| SMGT 310 | Financial Management in Sport Organizations |
| SMGT 320 | Sport Law & Governance                      |
| SMGT 440 | Sport Management Capstone                   |

#### **Take two business-related courses from:**

|          |                                      |
|----------|--------------------------------------|
| ACCT 110 | Financial Accounting                 |
| BUS 228  | Marketing Principles                 |
| BUS 238  | Financial Management                 |
| BUS 244  | Management & Organizational Behavior |
| BUS 300  | Business & Society                   |
| ECON 111 | Microeconomics                       |

#### **Take five courses, at least one of which is numbered 300 or higher, from a minimum of three prefixes:**

|          |                              |
|----------|------------------------------|
| ANTH 101 | Ancient Bodies, Modern Lives |
| ANTH 310 | Food & Culture               |

|                |                                                                       |
|----------------|-----------------------------------------------------------------------|
| BIO 106        | Cells, Genes & Society                                                |
| BIO 107        | Human Biology                                                         |
| BIO 115        | Medical Terminology <u>and</u> BIO 116 First Aid/CPR (2 credits each) |
| BUS any course | 310 or higher                                                         |
| CMS 221        | Event Management                                                      |
| CMS 222        | Entertainment Industry Promotion                                      |
| CMS 327        | Sports & Media                                                        |
| DSCI 101       | Introduction to Data Science                                          |
| ECON 241       | Introduction to Economic Research                                     |
| EXSC 110       | Introduction to Exercise Science                                      |
| MATH 123       | Introduction to Statistics                                            |
| PHIL 216       | Business Ethics                                                       |
| PSY 110        | Introductory Psychology                                               |
| PSY 342        | Health Psychology                                                     |
| SOC 240        | Sociology of Race and Ethnicity                                       |
| SOC 241        | Sociology of Gender and Sexuality                                     |
| SMGT 210       | Special Topics in Sport Management                                    |
| SMGT 430       | Sport Management Practicum                                            |

### **Capstone Requirement**

Sport Management majors must complete SMGT 440.

### **110**

#### **INTRODUCTION TO SPORT MANAGEMENT**

Introduces students to the business, leadership, and operational foundations of the sports industry, with a focus on how teams, events, and organizations are managed in today's competitive sports landscape. Explores the need for ethical approaches to management, addressing issues of gender and racial bias in sport with an eye toward fostering a more inclusive environment. *Not open to juniors or seniors.*

### **210**

#### **SPECIAL TOPICS IN SPORT MANAGEMENT**

Explores emerging issues, trends, and innovations shaping the sports industry. Topics vary by offering. *May be repeated once for credit when topics are different. Prerequisite: SMGT 110 or consent of instructor.*

### **310**

#### **FINANCIAL MANAGEMENT IN SPORT ORGANIZATIONS**

Introduces students to the essential financial principles that guide decision-making in professional, collegiate, and nonprofit sport settings. The course explores budgeting, revenue generation, financial analysis, economic impact, and the unique financial structures that shape teams, events, and facilities. *Prerequisite: SMGT 110 and BUS 238 or ACCT 110, or consent of instructor.*

**320****SPORT LAW & GOVERNANCE**

Provides students with a clear foundation in the legal frameworks and organizational structures that shape modern sports organizations. The course examines key areas such as risk management, contracts, compliance, athlete rights, and the governance models used by professional, collegiate, and amateur sport bodies. Students learn how rules, policies, and legal decisions influence operations and leadership, preparing them to navigate the regulatory landscape of the sports industry with confidence. *Prerequisite: SMGT 110 or consent of instructor.*

**430****SPORT MANAGEMENT PRACTICUM**

Gives students the opportunity to apply classroom knowledge in a real-world sports setting through supervised, hands-on work with a professional, collegiate, or community sport organization. The course emphasizes practical skill development, professional communication, and reflective learning as students engage in day-to-day operations, event support, or administrative tasks. Students work 10-12 hours per week for their sponsor organizations, in addition to attending a weekly seminar on management topics relevant to their work assignments. To be enrolled in the course, students must submit a resume, cover letter, and recommendation letters, complete an interview with the department, and may be required to interview with the host organization for placement. *Prerequisites: completion of at least one SMGT 300-level course, or consent of instructor. May be repeated for credit.*

**440****SPORT MANAGEMENT CAPSTONE**

Challenges students to integrate and apply the knowledge, skills, and experience gained throughout the program to a research study or comprehensive sport industry project. This course provides students with an opportunity to demonstrate applied knowledge, critical thinking, ethical judgment, and effective communication skills necessary for early-career roles in sport management. *Prerequisites: completion of two SMGT 300-level courses, or consent of instructor.*

# THEATRE (THEA)

Professor: Stoytcheva-Horissian (Chair)

Associate Professor: Innerarity

Assistant Professor: Ripa

Instructor: Barba

- Majors: Acting, Design & Technical Theatre, Directing, Musical Theatre, Stage Management
- Courses required for Acting, Design & Technical Theatre, Directing Concentrations, and Musical Theatre: 11 (not including zero or 1 credit courses)
- Courses required for Stage Management: 10.5 (not including zero or 1 credit courses)
- Production credits required for all majors: 6
- Non-credit Colloquium: THEA 246 and 247 (Theatre trips)
- Capstone requirement: THEA 460
- Minors: Design & Technical Theatre, Acting

Theatre is a combination of many art forms, and the theatre curriculum provides opportunities to explore all its aspects in regards to the entertainment industry: dramatic literature, theatre history, acting, directing, stage management, design, and technical theatre. The rigorous production program offers practical training to complement the comprehensive curriculum.

Theatre students may want to consider a second major in Performing Arts Management.

## Major Requirements

All majors must complete the core courses: THEA 145, 146, 148, 210, 226, 227, 246, 247, and 332 or 333, as well as 6 credits of THEA 161 and/or 162. Should a student elect to pursue two theatre majors, the student is required to complete 9 total credits of THEA 161 and/or 162 and two semesters of THEA 460. Additionally, students must complete the requirements specific to each theatre major.

1. **Acting major:** THEA 237 or 345; 241, 245, and 460
2. **Design & Technical Theatre major:** two courses from THEA 229, 230, 316; one course from ART 113 or 225, CMS 221 or 222; and THEA 460
3. **Directing major:** THEA 245, 326, 426, and 460
4. **Musical Theatre major:** four credits from THEA 135, 136, 235, 236, or 325; THEA 237, 245, 460; one credit from MUS 122 or 160; and two credits from MUS 161 and/or 168
5. **Stage Management major:** THEA 245, 326, 460; one credit from MUS 122 or 160, and two credits from THEA 135, 136, 235, 236, or 325

### **Capstone Requirement**

All majors must successfully complete THEA 460

### **Minor Requirements**

Two minors are available in the Theatre Department.

A minor in **Design & Technical Theatre** consists of THEA 145; 146 or other 4-credit theatre class in consultation with the department; 226; 246; one from 210, 332, or 333; one from 229, 230, or 316; and 4 credits of THEA 161 and/or 162.

A minor in **Acting** consists of THEA 145; 146 or other 4-credit theatre class in consultation with the department; 226; 245; 246; one of 210, 332, or 333; and 4 credits of THEA 161 and/or 162.

### **100**

#### **UNDERSTANDING THEATRE**

A comprehensive introduction to the theatre as a distinctive art form. Explores the creative process of the various artists involved in developing a theatrical production—actors, directors, designers, technicians, etc.—and examines the unique characteristics of dramatic literature.

### **135**

#### **INTRODUCTION TO DANCE I**

A survey of basic and beginner movements in contemporary dance techniques and practices. *2 credits.*

### **136**

#### **INTRODUCTION TO DANCE II**

A survey of refined beginner movements in contemporary dance techniques and practices. *Prerequisite: THEA 135 or consent of instructor. 2 credits.*

### **145**

#### **INTRODUCTION TO ACTING**

An introductory study of the actor's preparation with emphasis on developing the actor's creative imagination through improvisation, character analysis, and scene study.

### **146**

#### **FUNDAMENTALS OF PRODUCTION DESIGN**

A methods course exploration into the world of theatrical design including the historical aspects of theatrical design, the fundamentals of digital rendering, CAD drafting, color theory, and the use of various color media for design renderings and scale models.

### **148**

#### **PLAY PRODUCTION**

Stagecraft and the various aspects of production are introduced. Through material presented and laboratory work on the Mary L. Welch Theatre productions, students acquire experience with design, scenery, properties, costumes, and lighting.

**161****THEATRE PRODUCTION PRACTICUM**

Faculty-supervised participation in the creation of productions in the Mary L. Welch Theatre, which includes but is not limited to actors and all running crews involved in each production. Students do not register for Theatre Practicum; the department chair registers all students for Practicum after productions have been cast and all duties have been assigned each semester.

*Prerequisite: Instructor Approval. 0.5 credit. May be repeated for credit.*

**162****THEATRE PRODUCTION LEADERSHIP PRACTICUM**

Faculty-supervised participation in the production process through positions of leadership, which includes but is not limited to actors in major roles (eligible roles determined prior to casting), crew heads, stage management, assistant directors, assistant designers, and assistant technical directors. Students may not register for Theatre Practicum; the department chair registers all students for Practicum after productions have been cast and all duties have been assigned each semester.

*Prerequisite: Instructor Approval. 1 credit. May be repeated for credit.*

**210****MODERN DRAMA**

The study and application of various analytical methodologies using plays selected from the canon of modern drama, 1875 to the present. *Prerequisites: ENGL 106 or consent of instructor.*

*Alternate years. Fulfills Domestic Cultural Diversity Requirement.*

**215****SPECIAL TOPICS IN THEATRE**

Study of selected theatrical subjects, such as plays, writers, movements, or technical projects.

Recent topics include sound design, stagecraft, and professional development. *May be repeated for credit with consent of instructor when topics are different.*

**226****INTRODUCTION TO DIRECTING**

An introductory study of the functions of the director, with emphasis on script analysis, the rehearsal process, and communicating with collaborators. Practical scene work directing student actors is a major component of the course.

*Prerequisites: THEA 145 and 146. Majors may take concurrently with THEA 146. Alternate years.*

**227****STAGE MANAGEMENT**

A practical exploration and application of the standard practices of stage management, including the areas of the design process, the rehearsal process, and performance.

*Prerequisite: THEA 145. Alternate years.*

**229****LIGHTING DESIGN & SOUND DESIGN**

A course in the design of entertainment industry lighting and sound, with a special emphasis on

theatre and the practical application of those designs, including laboratory work on the stage.  
*Prerequisites: THEA 146 or consent of instructor. Alternate years.*

### **230**

#### **COSTUME DESIGN & TECHNOLOGY**

A detailed introduction to costuming for theatre and the entertainment industry. Includes elements of design, script analysis, planning, and production of all costume elements for the stage, film, dance, and private productions. *Prerequisites: THEA 146 or consent of instructor. Alternate years.*

### **235**

#### **INTERMEDIATE DANCE**

Further exploration of the expressive and technical qualities of intermediate movements in contemporary dance techniques and practices. *Prerequisite: THEA 135 or consent of instructor. Alternate semesters. 2 credits.*

### **236**

#### **ADVANCED DANCE**

In-depth exploration of the expressive and technical qualities of advanced movements in contemporary dance techniques and practices. *Prerequisite: THEA 235 or consent of instructor. Alternate semesters. 2 credits.*

### **237**

#### **MUSICAL THEATRE PERFORMANCE**

Exploration of the unique performing challenges of the genre through work with individual songs, scenes, and ensemble pieces; analysis and characterization; and choreography. Addresses audition process, musical theatre history, and repertoire. *Alternate years.*

### **241**

#### **AUDITIONS**

Examination of artistic and business aspects of acting as a career. A focus on the actor's preparation for professional auditions for stage, film, commercials, and graduate programs.

### **245**

#### **ACTING: REALISM**

Exploration of contemporary realism through intensive character analysis, monologue work, and scene study. *Prerequisite: THEA 145.*

### **246**

#### **FALL THEATRE COLLOQUIUM**

A non-credit seminar in which faculty and students travel to a major theatre city in the United States or Canada to view and discuss required plays, expanding their cultural and theatrical experiences. *Enrollment in one Fall Theatre Colloquium over the 4-year course of study is required for all students majoring or minoring in Theatre. Pass/Fail. Non-credit seminar. Prerequisite: Consent of instructor. This course may be repeated.*

**247**

**SPRING THEATRE COLLOQUIUM**

A non-credit seminar in which faculty and students travel either to Kennedy Center American College Theatre Festival to participate in various professional activities or to New York City to view and discuss required plays, expanding their cultural and theatrical experiences. *Enrollment in one Spring Theatre Colloquium over the 4-year course of study is required for all students majoring in Theatre. Pass/Fail. Non-credit seminar. Prerequisite: Consent of instructor. This course may be repeated.*

**303**

**PERFORMING ARTS MANAGEMENT**

Overview of the performing arts industry and the manager's role in leading and operating non-profit arts organizations. *Prerequisites: ENGL 106, or consent of instructor.*

**315**

**SPECIAL TOPICS IN THEATRE**

Study of selected theatrical subjects, such as plays, writers, movements, or technical projects. Recent topics include stage management, sound design, stagecraft, and professional development. *Prerequisite: 3 THEA courses. May be repeated for credit with consent of instructor when topics are different.*

**316**

**PROPS ARTISTRY**

A methods course based on the practical application of properties design and construction in relation to the department's production season. Fundamental crafting techniques include carving techniques, special effects, 3D printing, mold making, and casting. *Prerequisite: THEA 146. Alternate years.*

**325**

**SPECIAL TOPICS IN DANCE**

Study of selected topics in dance, which may include theory, history, practice, appreciation, conditioning, or other areas determined by student interest and departmental needs. Specific content will vary by semester. *May be repeated for credit when topics are different.*

**326**

**DIRECTING: ONE-ACTS AND SHORT PLAYS**

Continued exploration of the director's role in the production process with emphasis on the director's work in rehearsal. Practical application includes the direction of a one-act play with student actors. *Prerequisite: THEA 226. Alternate years.*

**332**

**THEATRE HISTORY I**

An investigation of theatre as the evolution of a multidisciplinary artistic, cultural, social, economic, religious, and political phenomenon. Dramatic texts representing specific eras are studied as historical evidence of theatre practice. Focuses on the origins of the theatre through



1700. *Prerequisites: ENGL 106 or consent of instructor. Fulfills Global Cultural Diversity Requirement. Alternate years.*

### **333**

#### **THEATRE HISTORY II**

An investigation of theatre as the evolution of a multidisciplinary artistic, cultural, social, economic, religious, and political phenomenon. Dramatic texts representing specific eras are studied as historical evidence of theatre practice. Focuses on the early 18th century through the theatre today. *Prerequisite: ENGL 106 or consent of instructor. Alternate years. Fulfills either Domestic or Global Cultural Diversity Requirement.*

### **345**

#### **ACTING: PERIOD STYLES**

Exploration of various acting styles, including Greek, commedia dell'arte, Elizabethan, comedy of manners, absurdism, and expressionism. Practical application includes character analysis, monologue work, and scene study. *Prerequisite: THEA 145.*

### **415**

#### **SPECIAL TOPICS IN THEATRE**

Study of selected theatrical subjects, such as plays, writers, movements, or technical projects. Recent topics include stage management, sound design, stagecraft, and professional development. *Prerequisites: THEA 332, 333, or consent of instructor. May be repeated for credit with consent of instructor when topics are different.*

### **426**

#### **ADVANCED DIRECTING**

Practical application of script analysis and directing a production in the Mary L. Welch Theatre. *Prerequisites: THEA 226 and consent of instructor. May be repeated for credit.*

### **460**

#### **SENIOR PROJECT**

The application of analytical and practical skills in a self-proposed project that allows students to demonstrate expertise in their concentration. Students are required to submit a formal written proposal by March 1 of their junior year that must be approved by all full-time Theatre Department faculty. *This course is open to seniors only. Students completing two majors in Theatre may repeat this course for credit.*

### **470 – 479**

#### **INTERNSHIP**

Students work off campus in professional theatres such as the George Street Theatre in New Jersey and the Walnut Street Theatre and Inter Arts Theatre in Philadelphia.

### **N80/N89**

#### **INDEPENDENT STUDIES**

Subjects for Independent Studies are chosen in conjunction with faculty members.

**490-491****INDEPENDENT STUDY FOR DEPARTMENTAL HONORS**

Students who qualify for Departmental Honors produce a major independent project in research and/or theatre production.

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*B.A., Lycoming College*

*M.S., Southwestern College*

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**Melissa A. Masse (2001)**

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*B.A., Lycoming College*

**Bernard J. McFadden (2009)**

Application Analyst

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*B.S., Lycoming College*

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Chemistry Lab Manager / Chemical Hygiene Officer

*B.S., Millersville University*

*M.A., University of Scranton*

**Amy Rogers (2007)**

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*B.A., Lycoming College*

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\* On Sabbatical Fall 2026

\*\* On Sabbatical Spring 2027

\*\*\* On Sabbatical Academic Year 2026-27

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**Jacob Berger (2019)\*\***

Philosophy

*B.A., Swarthmore College*

*M.Phil., Ph.D., The Graduate Center, City University of New York*

**Cullen Chandler (2003)**

History

The Frank and Helen Lowry Professor

Director of Lycoming Scholars

*B.A., Austin College*

*M.A., Fordham University*

*Ph.D., Purdue University*

**Sascha Feinstein (1995)**

English

The Shangraw Chair in the Liberal Arts

*B.A., University of Rochester*

*M.F.A., Ph.D., Indiana University*

**David G. Fisher (1984)**

Astronomy/Physics

*B.S., The Pennsylvania State University*

*M.S., Ph.D., University of Delaware*

**Steven R. Johnson (1999)**

Religion/Archaeology

M.B. Rich Endowed Chair

*B.A., California State University, Fullerton*

*M.Div., San Francisco Theological Seminary*



*M.A., Miami University of Ohio*  
*M.A., Ph.D., Claremont Graduate University*

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*B.A., Lawrence University*  
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*M.S., Ph.D., College of William and Mary*

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English  
*B.A., University of Alabama, Tuscaloosa*  
*M.A., Ph.D., University of N.C., Chapel Hill*

**Betty McCall (2004)\***

Anthropology and Sociology  
*B.A., Lamar University*  
*M.S., Baylor University*  
*M.A., Ph.D., Vanderbilt University*

**Elizabeth Moorhouse (2007)**

Economics  
Director, Institute for Management Studies  
Marshal of the College  
*B.S., M.A., Ph.D., University of Nebraska, Lincoln*

**Jeffrey D. Newman (1995)**

Biology  
*B.S., University of South Carolina*  
*Ph.D., Marquette University*

**Christopher Pearl (2013)\*\***

History  
*B.A., St. John Fisher College*  
*M.A., State University of New York at Brockport*  
*Ph.D., Binghamton University*

**Leah B. Peterson (2007)**

Film and Video Arts  
*B.F.A., Pratt Institute*

*M.F.A., Tufts University*

**Todd Preston (2003)**

English

*B.A., State University of New York at Geneseo*

*M.A., State University of New York at Albany*

*Ph.D., The Pennsylvania State University*

**Kerry Richmond (2009)\*\*\***

Criminal Justice-Criminology

*B.A., Boston College*

*M.S., Central Connecticut State University*

*Ph.D., University of Maryland*

**Amy Rogers (2007)**

Education

*B.A., Lycoming College*

*M. Ed., Bloomsburg University*

*Ph.D., The Pennsylvania State University*

**Sarah Silkey (2008)**

History

*B.A., Carleton College*

*M.A., Ph.D., University of East Anglia, UK*

**Biliana Stoytcheva-Horissian (2015)**

Theatre

*M.F.A., National Academy for Theatre and Film Arts, Sofia Bulgaria*

*M.A., Ph.D., University of Oregon*

**Howard Tran (2002)**

Art

The Logan A. Richmond Endowed Professor

*B.F.A., Academy of Art College*

*M.F.A., Boston University*

**Associate Professors**

**Ryan Adams (2010)**

Anthropology and Sociology

*B.S., M.A., Ph.D., Indiana University*

**Susan Beery (1999)**

Psychology

*B.A., Duke University*

*M.S., Ph.D., University of Miami*

**Holly D. Bendorf (1995)**

Chemistry

*B.S., The Pennsylvania State University*

*Ph.D., University of California-Los Angeles*

**David R. Broussard (2006)**

Biology

*B.S., M.S., Baylor University*

*Ph.D., Auburn University*

**Len Cagle (2005)**

Modern Language Studies

*B.A., M.A., University of Arkansas*

*Ph.D., Brown University*

**William Ciabattari (2006)**

Music

*B.S.E., University of Arkansas*

*M.M., Cleveland Institute of Music*

*Ph.D., Case Western Reserve University*

**April Drumm-Hewitt (2021)**

Psychology

*B. A., The College of New Jersey, Psychology*

*M.S., Ph.D., Binghamton University*

**Seth Goodman (2008)**

Art

*B.F.A., University of North Carolina at Asheville*

*M.F.A., Towson University*

**Georg Gaylor Grassmuck (2007)**

Business Administration

*B.S., Sacred Heart University*

*M.B.A., John F. Welch College of Business, Sacred Heart University*

*Ph.D., The Pennsylvania State University*

**Amanda Gunderson (2012)**

Music

*B.M., M.A., M.M., The Pennsylvania State University*

*D.M.A., University of Wisconsin*

**Michael Heyes (2017)**

Religion

*B.A., St. Olaf College*

*M.A., University of Washington*  
*Ph.D., Rice University*

**Rachel Hickoff-Cresko (2009)**

Education  
*B.S., Kutztown University*  
*M.Ed., Universidad del Turabo*  
*Ph.D., Widener University*

**Sarah Holstein (2015)**

Psychology  
*B.A., Randolph-Macon Woman's College*  
*Ph.D., Oregon Health & Science University*

**Jathan Innerarity (2012)**

Theatre  
*B.F.A., Stephen F. Austin State University*  
*M.F.A., The University of Memphis*

**Jennifer Irwin (2017)\*\***

Business Administration  
*B.A., Western Michigan University*  
*Masters of Information and Library Science, University of Washington*  
*Ph.D., University of Oregon*

**Lauri L. Kremer (2006)**

Accounting  
*B.A., Lycoming College*  
*M.B.A., Wilkes University*  
*C.P.A. (Pennsylvania)*

**Michael Kurtz (2015)**

Economics  
*B.S., Quinnipiac University*  
*M.A., Ph.D., University of New Hampshire*

**Charles H. Mahler (1994)**

Chemistry  
*B.A., The Ohio State University*  
*M.S., Ph.D., Northwestern University*

**Heather M. Moon (2012)**

Accounting  
*B.S., Old Dominion University*  
*M.S., Liberty University*

**Jessica Munson (2015)**

Latin American Archaeology  
*A.B., Princeton University*  
*M.A., Ph.D., University of Arizona*

**Caroline Payne (2010)**

Political Science  
*B.A., Berea College*  
*M.A., Ph.D., Louisiana State University*

**Andreas Rentsch (2017)**

Art  
*B.F.A., Ecole d'Arts Appliqués, Vevey, Switzerland*  
*M.F.A., Stony Brook University*

**Allison Saunders (2019)**

Biochemistry  
*B.S., Rochester Institute of Technology*  
*Ph.D., The Pennsylvania State University*

**Laura Seddelmeyer (2014)**

History  
*B.A., Roger Williams University*  
*M.A., Ph.D., Ohio University*

**Philip W. Sprunger (1993)**

Economics  
*B.S., B.A., Bethel College*  
*M. A., Ph.D., Indiana University*

**Rubén Varona (2021)**

Modern Language Studies  
*B.A., University of Cauca, Colombia*  
*M.F.A., University of Texas, El Paso*  
*Ph.D., Texas Tech University*

**Julie Yingling (2019)**

Criminal justice-Criminology  
*B.A., Valparaiso University*  
*M.A., Villanova University*  
*Ph.D., Michigan State University*

**Mark Zajack (2020)**

Business Administration  
*B.A., Colgate University*  
*M.S., San Jose State University*

*Ph.D., Clemson University*

## **Assistant Professors**

### **Susan Achury (2021)**

Political Science

*J.D., Universidad Nacional de Colombia*

*M.A., University of Texas at El Paso*

*Ph.D., University of Houston*

### **David R. Andrew (2015)**

Biology

*B.A., Oberlin College*

*Ph.D., University of Arizona*

### **Rachid Belhachemi (2025)**

Mathematics

*B.S., University of Central Oklahoma*

*M.S., University of Toronto*

*Ph.D., Oklahoma State University*

### **Kira Braham (2023)**

English

*B.A., Kent State University*

*M.A., University of Vermont*

*Ph.D., Vanderbilt University*

### **Andrew Brandon (2015)**

Mathematical Sciences

*B.S., Arizona State University*

*M.S., Ph.D., The University of Maryland*

### **Ben Brigandi (2026)**

Communication and Media Studies

*B.A., Pennsylvania State University*

*M.A., Lock Haven University*

### **John Capo (2020)**

Communication

*B.F.A., Conservatory of Theatre Arts and Film Purchase College*

*M.A., Stony Brook University*

### **Patrick Chiu (2023)**

Music

*B.A., Chinese University of Hong Kong*

*M.M., University of Cincinnati, College-Conservatory of Music*

*Ph.D., Florida State University*

**Lori Curtindale (2020)**

Psychology

*B.A., Otterbein University*

*M.A., Bowling Green State University*

*Ph.D., University of Kansas*

**Hannah Espy (2023)**

Sociology

*B.A., Colorado College*

*M.A., University of Iowa*

*Ph.D., University of Iowa*

**Rosheka Faulkner (2026)**

Criminal Justice-Criminology

*B.A., M.A., Stockton University*

*Ph.D., Rutgers University*

**John Han (2024)**

Business

*B.A., Emory University*

*M.A., New York University*

*M.S., Carnegie Mellon University*

*Ph.D., McGill University*

**Tyler Houser (2025)**

Criminal Justice-Criminology

*B.S., M.A., Radford University*

**Benjamin Kantack (2020)**

Political Science

*B.A., University of Nebraska*

*M.A., Ph.D., University of Illinois*

**Robin DeWitt Knauth (1999)**

Religion/Archaeology

*A.B., Princeton University*

*M.T.S., Regent College*

*Th.D., Harvard University Divinity School*

**Kimberly Kohler (2020)**

Education

*B.A., M.Ed., The Pennsylvania State University*

**Donald McClelland (2025)**

Biology

*Associate of Arts, Bard College at Simon's Rock*

*B.A., Bard College at Simon's Rock*

*M.A., Ph.D., City University of New York*

**Maybel Mesa Morales (2021)**

Modern Language Studies

*B.A., Universidad de La Habana, Cuba*

*Ph.D., Texas A&M University*

**Manuel Moreno-Lee (2020)**

Art

*B.F.A., University of Massachusetts*

*M.F.A., Rochester Institute of Technology*

**Melissa Morris (2023)**

Astronomy

*B.S., University of Texas at Austin*

*Ph.D., University of Wisconsin-Madison*

**Mary E. Morrison (2004)**

Biology

*B.A., Princeton University*

*M.A./M.Phil., Ph.D., Columbia University*

**Robert Nguyen (2024)**

English

*B.A., M.A., Fordham University*

*M.A., Ph.D., The Pennsylvania State University*

**Tina R. Norton (2011)**

Psychology

*B.A., M.A., Edinboro University of Pennsylvania*

*Ph.D., Kent State University*

**Mary Kate O'Donnell (2021)**

Biology

*B.S., Saint Joseph's University*

*Ph.D., University of South Florida*

**Andrew Paulhamus (2023)**

Accounting

*B.A., Lycoming College*

*M.A., College of William and Mary*

**Krish Pillai (2021)**



Computer Science  
*B.Tech, University of Kerala, India*  
*M.S., Ph.D., South Methodist University, Dallas, Texas*

**Jeremy D. Ramsey (2005)**  
Chemistry  
*B.S., Clarion University of Pennsylvania*  
*Ph.D., The Ohio State University*

**Zachary Reese (2023)**  
Film and Video Arts  
*B.A., Millersville University*  
*M.F.A., Temple University*

**Leslie Rieck (2019)**  
Biology  
*B.S., Allegheny College*  
*Ph.D., The Ohio State University*

**Matthew Ripa (2023)**  
Theatre  
*B.A., Salisbury University*  
*M.F.A., The Catholic University of America*

**Adrian Rublein (2024)**  
Computer Science  
*B.S., Lock Haven University of Pennsylvania*  
*Ph.D., The Pennsylvania State University*

**Marisa Sánchez (2023)**  
Art History  
*B.A., Villanova University*  
*M.A., The School of Art Institute of Chicago*  
*Ph.D., University of British Columbia*

**Eric Shoemaker (2025)**  
Philosophy  
*B.A., M.A., J.D., Ph.D., University of Toronto*

**Michael Smith (2011)**  
Mathematical Sciences  
*B.A., Connecticut College*  
*Ph.D., University of Virginia*

**Andrew Stafford (2016)**

Modern Language Studies  
*B.A., Montclair State University*  
*M.A., Ph.D., The Pennsylvania State University*

**Phoebe Wagner (2021)**

English  
*B.A., Lycoming College*  
*M.F.A., Iowa State University*

**Emily Wilson (2022)**

Astrophysics  
*B.A., Franklin and Marshall College*  
*M.S., Ph.D., Rochester Institute of Technology*

**Douglas Young (2008)**

Philosophy  
*A.B., Brown University*  
*M.T.S., Harvard University*  
*M.A., Ph.D., Cornell University*

**Lecturer, Instructor, Special, and Part-time Appointments**

**Edwin Beitz (2016)**

Wellspan York Hospital  
*MHA*  
*MLS(ASCP)*

**Kristin Cowden (2023)**

Mathematical Sciences  
*B.A., Lycoming College*  
*M.Ed., Pennsylvania State University*

**William Dever (2008)**

Religion/Archaeology  
*B.A., Milligan College*  
*M.A., Butler University*  
*B.D., Christian Theological Seminary*  
*Ph.D., Harvard University*

**Maria Hebert-Leiter (2010)**

English  
*B.A., Loyola University*  
*M.A., Ph.D., University of North Carolina*

**Sarah L. Kauffman (2024)**

English

Director of Writing Center  
*B.A., Eastern University*  
*M.A., Middlebury College*

**Christopher Reed (2008)**

Mathematical Sciences  
Director of the Math Center  
*B.S., Lycoming College*  
*M.E., Mansfield University*

**Lauri Rintelman (2017)**

Modern Language Studies  
*B.A., Lycoming College*

**Edward Robbins (2001)**

Criminal Justice and Criminology  
*B.A., Mansfield University*  
*M.S., Shippensburg University*

**Jacob Vargas (2025)**

Psychology  
*B.S., Trinity College*  
*M.A., University of Nebraska-Lincoln*

**Emeriti**

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Associate Professor Emerita of Sociology  
*B.A., M.A., Ph.D., American University*

**Robert B. Angstadt**

Professor Emeritus of Biology  
*B.S., Ursinus College*  
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**Susan K. Beidler**

Associate Professor Emerita of Library Services  
*B.A., University of Delaware*  
*M.L.S., University of Pittsburgh*

**Howard C. Berthold, Jr.**

Professor Emeritus of Psychology  
*B.A., Franklin and Marshall College*  
*M.A., University of Iowa*  
*Ph.D., The University of Massachusetts*

**Frederick E. Blumer**

President Emeritus

*B.A., Millsaps College*

*B.D., Ph.D., Emory University*

**Gary M. Boerckel**

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*B.A., B.M., Oberlin College*

*M.Mus., Ohio University*

*D.M.A., University of Iowa*

**Michelle Briggs**

Associate Professor Emerita of Biology

*B.S., Cornell University*

*M.S., University of Iowa*

*Ph.D., The Pennsylvania State University*

**Barbara F. Buedel**

Professor Emerita of Modern Language Studies

*B.A., University of Kentucky*

*M.A., M. Phil., Ph.D., Yale University*

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*B.A., Lycoming College*

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*B. Sc., University of Sri Lanka*

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*B.S., M.A., Sam Houston State University*

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**Eugene Donati**

Assistant Professor Emeritus of Corporate Communication

*B.A., University of Pittsburgh*

*M.P.A., The American University*

*M.S.C.F., University of Toronto*

**James E. Douthat**

President Emeritus

*A.B., The College of William and Mary*

*M.Div., Ed.D., Duke University*

**Richard R. Erickson**

Associate Professor Emeritus of Astronomy

*B.A., University of Minnesota*

*M.S., Ph.D., University of Chicago*

**Lynn Estomin**

Professor Emerita of Art

*B.A., Antioch College*

*M.F.A., University of Cincinnati*

**Robert F. Falk**

Professor Emeritus of Theatre

*B.A., B.D., Drew University*

*M.A., Ph.D., Wayne State University*

**Morton A. Fineman**

Professor Emeritus of Physics

*B.A., Indiana University*

*Ph.D., University of Pittsburgh*

**Pamela Gaber**

Professor Emerita of Religion/Archaeology

*B.A., University of Wisconsin, Madison*

*A.M., Ph.D., Harvard University*

**Edward G. Gabriel**

Associate Professor Emeritus of Biology

*B.A., M.A., Alfred University*

*M.S., Ph.D., The Ohio State University*

**Charles L. Getchell**

Associate Professor Emeritus of Mathematics

*B.S., University of Massachusetts*

*M.A., Ph.D., Harvard University*

**Ernest P. Giglio**

Professor Emeritus of Political Science

*B.A., Queens College*

*M.A., SUNY at Albany*

*Ph.D., Syracuse University*

**Amy Golahny**

Professor Emerita of Art

*B.A., Brandeis University*

*M.A., Williams College – Clark Art Institute*  
*M. Phil., Ph.D., Columbia University*

**Stephen R. Griffith**

Professor Emeritus of Philosophy  
*A.B., Cornell University*  
*M.A., Ph.D., University of Pittsburgh*

**Gary Hafer**

Professor Emeritus of English  
*B.A., M.A., Kutztown University*  
*Ph.D., Purdue University*

**G. W. Hawkes**

Professor Emeritus of English  
Marshal of the College  
*B.A., University of Washington-Seattle*  
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**Owen F. Herring**

Assistant Professor Emeritus of Philosophy  
*B.A., Wake Forest College*

**Rachael Hungerford**

Assistant Professor Emerita of Education  
*A.A., Cayuga County Community College*  
*B.S., State University of New York at Plattsburgh*  
*Ph.D., University of Massachusetts/Amherst*

**Janet McNeil Hurlbert**

Professor Emerita of Library Services  
*B.A., M.A., University of Denver*

**Emily R. Jensen**

Professor Emerita of English  
*B.A., Jamestown College*  
*M.A., University of Denver*  
*Ph.D., The Pennsylvania State University*

**Bonita Kolb**

Associate Professor Emerita of Business Administration  
*B.A., Alaska Pacific University*  
*M.S., Ph.D., Golden Gate University*

**Eldon F. Kuhns, II**

Associate Professor Emeritus of Accounting

*B.A., Lycoming College*  
*M. Accounting, University of Oklahoma*  
*C.P.A. (Pennsylvania)*

**Robert H. Larson**

Professor Emeritus of History  
*B.A., The Citadel*  
*M.A., Ph.D., University of Virginia*

**Darby Lewes**

Professor Emerita of English  
*B.A., Saint Xavier College*  
*M.A., Northwestern University*  
*Ph.D., University of Chicago*  
*Litt.D., Wilson College (Honoris Causa)*

**Mehrdad Madresehee**

Professor Emeritus of Economics  
Robert L. and Mary Jackson Shangraw Professor  
*B.S., University of Tehran*  
*M.S., National University of Iran*  
*M.S., University of Idaho*  
*Ph.D., Washington State University*

**Chriss McDonald**

Professor Emeritus of Chemistry  
*B.S., Manchester College*  
*Ph.D., Miami University of Ohio*

**Richard J. Morris**

Professor Emeritus of History  
*B.A., Boston State College*  
*M.A., Ohio University*  
*Ph.D., New York University*

**Kurt H. Olsen**

Assistant Professor Emeritus of Psychology  
*B.S., St. Lawrence University*  
*M.S., Ph.D., University of Rochester*

**Kathleen D. Pagana**

Professor Emerita of Nursing  
*B.S.N., University of Maryland*  
*M.S.N., Ph.D., University of Pennsylvania*

**Doris P. Parrish**

Associate Professor Emerita of Nursing  
*B.S., SUNY at Plattsburgh*  
*M.S., Russell Sage College*  
*Ph.D., University of Texas at Austin*

**Eileen M. Peluso**

Associate Professor Emerita of Mathematical Sciences and Associate Provost Emerita  
*B.S., Bloomsburg University*  
*M.S., Ph.D., The Pennsylvania State University*

**John F. Piper**

Professor Emeritus of History and Dean Emeritus of the College  
*A.B., Lafayette College*  
*B.D., Yale University*  
*Ph.D., Duke University*

**David J. Rife**

Professor Emeritus of English  
*B.A., University of Florida*  
*M.A., Ph.D., Southern Illinois University*

**Susan M. Ross**

Professor Emerita of Sociology and Dean Emerita of the College  
*B.A., Millersville University*  
*M.A., Ph.D., University of New Hampshire*

**Kathryn M. Ryan**

Professor Emerita of Psychology  
*B.S., University of Illinois*  
*M.S., Ph.D., University of Pittsburgh*

**Roger D. Shipley**

Professor Emeritus of Art  
*B.A., Otterbein College*  
*M.F.A., Cranbrook Academy of Art*

**N. J. Stanley**

Associate Professor Emerita of Theatre  
*B.S., Louisiana State University*  
*M.F.A., Florida State Univ., Tallahassee*  
*Ph.D., Indiana University-Bloomington*

**Arthur Sterngold**

Associate Professor Emeritus of Business Administration  
*B.A., Princeton University*  
*M.B.A., Northwestern University*



*Ph.D., The Pennsylvania State University*

**Fred M. Thayer, Jr.**

Professor Emeritus of Music

*A.B., Syracuse University*

*B.M., Ithaca College*

*M.M., SUNY at Binghamton*

*D.M.A., Cornell University*

**Kent C. Trachte**

President Emeritus

*B.A., Dartmouth College*

*M.A., University of Kentucky*

*Ph.D., Binghamton University*

**John M. Whelan, Jr.**

Professor Emeritus of Philosophy

*B.A., University of Notre Dame*

*Ph.D., The University of Texas at Austin*

**Frederic M. Wild, Jr.**

Assistant Professor Emeritus of Communication

*B.A., Yale Divinity School*

*M.Div., Yale Divinity School*

*M.A., Ph.D., Ohio State University*

**Melvin C. Zimmerman**

Professor Emeritus of Biology

*B.S., SUNY at Cortland*

*M.S., Ph.D., Miami University*

**ATHLETIC STAFF**

**Morgan High**

Warrior Spirit Advisor

**Courtney Baer**

Assistant Softball Coach

*B.A., Mansfield University*

**Eric Berthold**

Assistant Volleyball Coach

*B.A., Lycoming College*

*M.S., University of Scranton*

**Kaitlin Bottorf**

Assistant Athletic Trainer

*B.S., Lock Haven University*

*M.S., California University of Pennsylvania*

**Rebecca Brown**

Assistant Tennis Coach

*B.A., Psychology*

**Joel Carr**

Assistant Equipment Manager

**Michael Clark**

Director of Athletics

Head Football Coach

*B.A., Lycoming College*

*M.B.A. Rowan University*

**Roger Crebs**

Head Wrestling Coach

*B.A., Lycoming College*

**Zac Cronk**

Assistant Baseball Coach

*B.A., Utica University*

**Mark Delucia**

Assistant Football Coach

*B.S., Delaware Valley University*

**Christen Ditzler**

Head Women's Basketball Coach

Assistant Athletic Director

*B.A., Franklin & Marshall College*

*M.B.A., West Chester*

**Andrew Dragunas**

Head Swimming Coach

*B.S., East Carolina University*

**Braeden Eckard**

Assistant Women's Soccer Coach

*B.A., Pennsylvania College of Technology*

**Kenny Fern**

Head Women's Soccer Coach

*B.A., University of Sussex*

**Jenny Foley**

Assistant Swimming Coach

*B.S., Marietta College*

*M.S., East Carolina University*

**Julie Gardner**

Assistant Women's Lacrosse Coach

*B.A., University of Virginia*

**Adam Gehr**

Assistant Football Coach

*B.S., Mansfield University*

**Dylan Geraty**

Assistant Strength & Conditioning Coach

*B.S., Lock Haven University*

**Nathan P. Gibboney**

Head Men's Soccer Coach

*B.S., Susquehanna University*

*M.Ed., Westminster College*

**Joshua Gildea**

Assistant Men's Soccer Coach

*B.A., Lycoming College*

**Cody Greenaway**

Assistant Tennis Coach

*B.A., Lycoming College*

**Tom Griffith**

Assistant Men's Basketball Coach

*B.S., Pennsylvania State University*

*M.S., Misericordia University*

**Megan Grimme**

Assistant Women's Soccer Coach

*B.A., Susquehanna University*

*M.S., Western Governors University*

*M.Ed., Capella University*

**Joseph A. Guistina**

Associate Director of Athletics/Communications

*B.A., Susquehanna University*

*M.A., SUNY at Buffalo*

**Troy Hembury**

Assistant Wrestling Coach

*B.A., Columbia University*

**George Henry**

Assistant Women's Basketball Coach

*B.A., Susquehanna University*

*M.S., Pennsylvania State University*

**Emma Humphrey**

Assistant Women's Soccer Coach

*B.A., Susquehanna University*

**Grant Huff**

Assistant Men's Lacrosse Coach

*B.A., Lycoming College*

**Dustin Johnson**

Assistant Baseball Coach

*B.S., M.S., Bloomsburg University*

**Allyson Kenyon**

Head Field Hockey

*B.A., Juniata College*

*M.S., James Madison University*

**Christopher Kish**

Assistant Football Coach

*B.A., Lycoming College*

*M.A., Wilkes University*

**Luke Klingler**

Assistant Men's Soccer Coach

*B.A., Lycoming College*

**Seth Lansberry**

Assistant Wrestling Coach

*B.A., Lycoming College*

**Mark Linebaugh**

Head Men's Basketball Coach

*B.A., Colgate University*

**Tony Mackin**

Head Men's Lacrosse Coach  
*B.A., Lycoming College*  
*M.A., Marymount University*

**Jack McAndrew**  
Assistant Men's Basketball Coach  
*B.A., Susquehanna University*  
*M.S., Bucknell University*

**Timothy P. McMahon**  
Head Women's Volleyball Coach  
*A.B., Penn College*  
*B.S. Mgnt., Lock Haven University*

**Greg Merchlinsky**  
Assistant Football Coach  
*B.A., Pennsylvania State University*

**Krystin Montoro**  
Assistant Softball Coach  
*B.S., Lock Haven University*

**Melissa Montoro**  
Head Softball Coach  
*B.A., Mansfield University*

**Keri Moriarity**  
Head Athletic Trainer  
*B.S., University of Pittsburgh*  
*M.S., Ohio University*

**Brent Newton**  
Assistant Football Coach  
*B.A., Lycoming College*

**Rick Oliveri**  
Head Baseball Coach  
*B.A., University at Buffalo*  
*M.B.A., Lincoln Memorial University*

**Tamara Pavlov**  
Assistant Cross Country Coach  
*B.S., Pennsylvania College of Technology*

**Andrew Pond**  
Assistant Men's Basketball Coach

*B.A., SUNY Delhi*  
*M.S., Concord University of Irvine*

**Sarah Quigley**

Head Women's Lacrosse Coach  
*B.A., Lycoming College*  
*M.S.W., New York University*

**Jeff Rauff**

Assistant Swimming Coach  
*B.A., Lycoming College*

**Kate Reese**

Assistant Volleyball Coach  
*B.S., Susquehanna University*  
*M.S., Syracuse University*

**Sean Reese**

Assistant Wrestling Coach  
*B.A., Lycoming College*  
*M.S., Marshall University*

**Joel Reid**

Head Men's and Women's Tennis Coach  
*B.S., Pennsylvania State University*

**Charlie Robinson-McGuriman**

Assistant Swimming Coach  
*B.A., Lebanon Valley College*

**Richard Roman**

Assistant Football Coach  
*B.A., Moravian University*

**Markus Rybak**

Assistant Women's Soccer Coach  
*B.S., Milligan College*

**McKenzie Seyler**

Assistant Softball Coach  
*B.A., Messiah University*  
*M.A., Liberty University*

**Brian Shermeyer**

Assistant Wrestling Coach  
*B.A., Messiah University*

*M.S., Western New England University*

**Katie Sick**

Head Cross Country Coach

*B.S., Lock Haven University*

**Scott Sick**

Assistant Cross Country Coach

*B.S., Lock Haven University*

**Jamie Spencer**

Head Golf Coach

*B.A., Lycoming College*

**Jeremy Street**

Equipment Manager

**Hadyn Swartwood**

Assistant Wrestling Coach

*B.A., Lycoming College*

**Andrew Wagner**

Assistant Football Coach

*B.A., Lycoming College*

**Katie Weaver**

Assistant Athletic Trainer

*B.S., M.S., Lock Haven University*

**Steve Wiser**

Assistant Head Football Coach and Defensive Coordinator

*B.A., Lycoming College*

**Adrienne Wydra**

Assistant Women's Basketball Coach

*B.A., Lycoming College*

*M.S., W. Virginia University*

**Cara Zortman**

Assistant Swimming Coach

*B.A., Lycoming College*

*M.Ed., York College of Pennsylvania*

## ALUMNI ASSOCIATION

The Lycoming College Alumni Association Executive Board consists of 30 to 40 alumni members-at-large elected to lead and represent current and former students in a mutually beneficial relationship with the college. It is a diverse group of alumni representing class years, geographic regions, and interests of the alumni base. The current and immediate past presidents of the Student Senate and the senior class serve as ex-officio members.

The AAEB meets on campus twice yearly, in the spring and in the fall, just before Homecoming and Alumni & Reunion Weekends.

The Lycoming College Alumni Association Executive Board endeavors to promote the mission and vision of the college to be recognized nationally among the best liberal arts and sciences academic institutions. The board will support alumni and students, current and future, by developing relationships and opportunities for personal and professional growth, philanthropic spirit, passion for service, and excellence in developing the overall foundation of the college community.

All former students of Williamsport Dickinson Seminary and all former students who have successfully completed one year of study at Williamsport Dickinson Junior College or Lycoming College are considered members of the Association.

The Assistant Vice President for Alumni Engagement manages the activities of the Alumni Office, which is responsible for keeping alumni informed of and engaged with the programs, growth, and activities of the College and the Alumni Association through regular publications, periodic mailings, and the alumni website ([www.lycoming.edu/alumni](http://www.lycoming.edu/alumni)). Arrangements for regional events, Homecoming, and Alumni & Reunion Weekend are coordinated through the Office of Alumni Relations. The Alumni Office works closely with the other departments within the Division for College Advancement.

Officers and members of the AAEB can be found here:

<https://www.lycoming.edu/alumni/alumni-association/executive-board.aspx>

Communications to the Alumni Association Executive Board should be addressed to [alumni@lycoming.edu](mailto:alumni@lycoming.edu) or the Office of Alumni Relations.



## **COMMUNICATING WITH LYCOMING COLLEGE**

**All correspondence should be addressed to:**

Lycoming College  
One College Place  
Williamsport, PA 17701-5192

**The College telephone number is (570) 321-4000**

**<http://www.lycoming.edu>**

### **Visitors**

Lycoming welcomes visitors to the campus. If you would like a guided tour, call the Office of Admissions (570) 321-4026 before your visit to arrange a mutually convenient time.

**Toll Free Number 1-800-345-3920**

**e-mail: [admissions@lycoming.edu](mailto:admissions@lycoming.edu)**