

Juniata College Catalog 2022-2023

August 25, 2022-August 24, 2023

Catalog provisions are not to be regarded as an irrevocable contract between the student and Juniata. While every attempt has been made to assure correct information, the College reserves the right to change any provisions or requirements when deemed appropriate.

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The College

Mission

Juniata's mission is to provide an engaging personalized educational experience empowering our students to develop the skills, knowledge and values that lead to a fulfilling life of service and ethical leadership in the global community.

Profile

BRIEF HISTORY

Juniata is an independent, co-educational college of liberal arts and sciences, founded in 1876 by members of the Church of the Brethren to prepare individuals "for the useful occupations of life."

Juniata's first classes were held on April 17, 1876 in a cramped, second-story room over a local printing shop. Two women and one man were in attendance. Unlike the common model at the time, Juniata was co-educational from the beginning. In 1879, classes were moved to Founders Hall (completely restored in 2009) on the present Juniata campus in Huntingdon. The town is a county seat of 10,000 and lies in the scenic Central Pennsylvania mountains, mid-way between Interstate 80 and the Pennsylvania Turnpike.

The Juniata community now has over 40 buildings on over 800 acres, including the 316-acre Baker-Henry Nature Preserve and Sparks Farm. In addition, the Raystown Field Station, located on Raystown Lake encompassing a complete watershed, consists of 365 acres for exclusive College use and a full 29,000 acres for additional research and study. The Field Station is leased from the Army Corps of Engineers and provides one of the most distinctive opportunities in environmental science in the nation.

Primarily residential (93% of degree seeking undergraduate students live in campus housing), Juniata maintains an enrollment of approximately 1,450 students. Sixty-three percent are from Pennsylvania. This year's student body represents 32 states and territories, and 31 foreign countries.

ACADEMIC PRINCIPLES

The success of students is directly linked to Juniata's strong, dedicated faculty who consider teaching and advising their primary responsibilities.

The College supports a flexible, "value-centered" curriculum, wherein students may design their own Programs of Emphasis, which often transcend traditional majors. Programs of Emphasis may be tailored to personal goals and needs, may lead to either a B.A. or B.S. degree, and may include courses from among 19 academic departments. Each student consults with two faculty advisors and may also seek counsel from QUEST, Career Services staff and Counseling staff. Coursework takes place both on and off campus and includes such varied experiences as seminars, fieldwork, "on-the-job" internships, study abroad, independent study and research.

PRINCIPLES OF A LIBERAL ARTS LIFESTYLE:

As a community, Juniata is dedicated to providing an academically rigorous and personally enriching liberal arts education. Students have a responsibility to expand and fulfill their lifestyles to embrace the opportunities that lead to well-rounded citizenship.

The Student Government of Juniata College, as servant of the students, approves the following principles of a liberal arts lifestyle, and believes that these principles serve as the vehicle to successful life experiences.

A Juniata student who fully engages in a liberal arts lifestyle:

- Recognizes the value of being a citizen of the world in an increasingly global and diverse community.
- Seeks opportunities to serve in activities that enrich communities and give back to humanity.
- Builds meaningful and lasting relationships with academic peers, faculty, staff, and future colleagues.
- Regards healthy lifestyle choices as the keystone to success.
- Embodies a spirit of sustainability through awareness of finite resources.
- Realizes that learning is a lifelong process encompassing many disciplines.
- Questions the assumptions and truths presented in life, as embodied in Juniata's maxim "Veritas Liberat."
- Understands that integrity and honesty in all of life's pursuits are virtues unto themselves.
- Assumes responsibility for choices made

Approved by Juniata College Student Government, April 14, 2006

JUNIATA'S APPROACH TO STUDENT DEVELOPMENT

As a community that focuses on the whole person, Juniata recognizes the importance of both curricular and co-curricular aspects of student development. Juniata has bridged the traditional higher education dichotomy between academic affairs and student affairs by merging these two branches of the College, a structural move that integrates the student's college experience. Academic affairs and student services officers meet regularly to coordinate efforts to meet students' educational and social development.

COMMENDATIONS

Juniata is mentioned in scores of diverse guides, articles, and measures of colleges and universities. Regardless of evaluation methods, the College is consistently praised as supportive, innovative, and a model for the best that liberal arts education can be.

We are praised for our overall offerings in *The College Solution: A Guide for Everyone Looking for the Right School at the Right Price*, *Baron's Best Colleges*, *Peterson's Competitive College Guide*, *U.S. News and World Report*, *The Princeton Review*, and *The Fiske Guide*.

We are recognized for our distinctive focus on experience and excellent outcomes in *Lauren Pope's Colleges That Change Lives*, *David L. Marcus's Acceptance*, *Weinstein's Making a Difference College Guide*, *Forbes.com's* rankings of 3,200 colleges and universities in the U.S., the *Teagle Foundation's* study, "The Nation's 13 Best Performing Colleges," and *The Unofficial, Unbiased, Insiders Guide to the 331 Most Interesting Colleges*.

Our accessibility and openness to students from diverse economic, social, racial and ethnic backgrounds has been recognized by the *Center for Student Opportunity's College Access Guide* and *Leland Miles' Provoking Thought: What Colleges Should Do for Students*.

We are lauded for our commitment to service and community in guides like *Rugg's Recommendations on Colleges*, *usnews.com's "America's Best Colleges--A+ Options for B Students"*, *Entrepreneur.com's "Colleges with an Entrepreneurship Emphasis"*, *Washington Monthly's College Rankings*, *Don Asher's Cool Colleges*, and *ELLEgirl magazine's "Top 50 Colleges that Dare to be Different."*

Our students themselves talk about the College in *Vault's College Buzz Book* and *College Prowler*.

DIVERSITY AND INCLUSION

Please visit the Office of Equity, Diversity, and Inclusion website at <https://www.juniata.edu/offices/diversity/>

RIGHT TO KNOW POLICIES

Non-discrimination

Juniata is an independent, privately supported, coeducational institution committed to providing a liberal arts education to qualified students regardless of sex, religion, race, color, national origin, ancestry, marital status, sexual orientation or disability. College policies comply with the requirements of Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and all other applicable federal, state and local statutes, regulations and guidelines. A complete affirmative action policy is available in the Office of Human Resources.

Family Educational Rights and Privacy Act of 1974

The Family Educational Rights and Privacy Act (FERPA) provides college students with certain rights relative to access and release of records that are personally identifiable. Juniata College's policy and procedures relating to FERPA are outlined below.

Student Records

Records that can be reviewed by students are maintained by the Registrar, the Director of Career Services, the Dean of Students, the Director of Student Financial Planning, and the Controller.

Students have the right to inspect records listed above by asking for an appointment with the appropriate administrator. Records will be produced within a 45 day period and students have the right to seek the correction of information they consider inaccurate.

Students have the right to copies of their records.

Personally identifiable information from these records will not be disclosed to a third party without written consent of the student with the exceptions listed below:

- To other Juniata College administrators and faculty with a legitimate educational need (including faculty advisors and coaches of intercollegiate athletes).

- To accrediting agencies, certain governmental agencies involved in educational research, legal officers presenting a subpoena, and in emergencies to protect the health and safety of the student or others.

Records of request and disclosure of student records will be maintained by the appropriate administrators. These records will indicate the name of the party making the request, any additional party to whom information may be re-disclosed, and the legitimate interest the party had in obtaining the information. These records are available to students.

According to FERPA students do not have the right to review the following documents:

- Confidential letters and statements of recommendation which were placed in a file before January 1, 1975.
- Letters of recommendation that students have waived their right to review.
- Personal notes of faculty members, counselors, and administrators which are written only for the use of the writer.
- Financial records and statements of parents.

Directory Information

Directory Information includes name, home and local address, home and local phone number, email address, POE, class level, co-curricular activities, dates of attendance, enrollment status, cumulative credit hours, degrees, honors and awards received, and College-sanctioned photographic imagery. College-sanctioned photographic imagery is defined as digital or photographically printed images captured and created by College-financed operations including but not limited to the Marketing Office, the Digital Media Studio, the Advancement Office, Student Services, and the Office of the Registrar. Juniata may use parents names to promote announcements of their student's activities.

Students may refuse to have the directory information listed above, or some of the categories, released to third parties by submitting a written request to the Dean of Students by the fourth week of any given semester. Juniata has determined that College-sanctioned photographic imagery is part of directory information, and thus is covered by blanket permissions implied in the Juniata policies regarding directory information.

Parental Notification

In the interest of promoting better communication regarding students' academic and personal development, parents of dependent students may opt to receive copies of all correspondences involving violations, charges, actions, awards and citations that are sent from the Dean of Students Office to respective students unless we are asked not to send copies (hard waiver). Revealing such information is permissible under section 4.1 Disclosure of Educational Record Information – 3i, which permits colleges to share educational records or components thereof without the written consent of the student to “parents of a student who have established that student’s status as a dependent” (chapter 5.3).

The Registrar’s Office will release grades and send copies of academic actions including academic probation, suspension and dismissal, to parents of dependent students provided there is a consent on file from the respective student. If students would like parents to receive grade reports for the semester, the student must request a Final Grade Report each time the final grades are to be sent to the parents. The Request for Final Grade Report form is available in the Office of the Registrar.

The Student Accounting Services Office will communicate with parents of dependent students about billing for course registration, room and board, and any incidental fees which are the responsibility of a registered Juniata College student. NOTE: By registering, students are obligated to pay tuition, fees and other charges associated with the registration. Failure to meet these obligations by scheduled due dates, may result in additional costs associated with collection efforts including late fees, collection agency commissions, court costs, and other collection costs that might be incurred.

ACCREDITATION

Juniata College is accredited by the Middle States Commission on Higher Education (MSCHE), 3624 Market Street, 2nd Floor West, Philadelphia, PA 19104, 267-284-5000. The Commission on Higher Education is recognized by the U.S. Secretary of Education to conduct accreditation and pre-accreditation activities for institutions of higher education in the region. MSCHE is also recognized by the Council on Higher Education Accreditation (CHEA) to accredit degree-granting institutions which offer one or more

post-secondary educational programs of at least one academic year in length.

The College is also certified by the American Chemical Society and the Council on Social Work Education. The Education Department is authorized by Pennsylvania’s Department of Education to offer teacher certification programs. The College is a member of the National Association of Independent Colleges and Universities, the Association of Independent Colleges and Universities of Pennsylvania, and the Council of Independent Colleges, as well as other state and national professional associations.

The Campus

Main Campus

INSTRUCTIONAL FACILITIES

Carnegie Hall (1907; renovated in 1998), once the College library, is a center for the fine arts. Its Henry and Mabelle Shoemaker Gallery and Edwin and Susan (Rabinowitz) Malloy Gallery of Art, replete with original stained glass windows and skylight, are used for exhibits, lectures, and receptions. Carnegie Hall is home to the Worth B. Stottlemeyer and Guenther Spaltmann art collections. The hall also includes studios, dark-room, and the Juniata College Museum of Art. The Sill Business Incubator (renovated 2013) was renovated to provide a spacious new home for the ceramics program.

For the musical arts, headquarters is Swigart Hall (1950), an attractive, white-brick building also on the northern side of the campus. Purchased for the College with a gift from W. Emmert Swigart '06, it contains faculty offices, practice rooms, teaching studios, and classrooms, one of which is home to a Yamaha Piano Laboratory.

The William J. von Liebig Center for Science (2002), is a state of the art facility for biology and chemistry. The facility has strengthened Juniata’s position as a premier college for undergraduate teaching and learning in biology and chemistry. For research of all kinds, von Liebig is among the best equipped undergraduate science centers in the nation. Housed there are a cell culture facility, a shared facility for light (fluorescence, laser scanning confocal and DIC) and electron micros-

copy, and a fully equipped laboratory for molecular biology research. Other instrumentation includes an atomic force microscope, a gas chromatograph-mass spectrometer, a nuclear magnetic resonance spectrophotometer, a liquid chromatograph-mass spectrometer, and an x-ray diffractometer.

In the Brumbaugh Academic Center (1968), three separate wings house seven departments. The Dale Hall wing houses business/accounting/economics, communication, information technology and computer science, and mathematics; with physics, earth and environmental science, geology, and the College Academic Computer Center located in the two corresponding wings. The circular hub of BAC includes Alumni Hall, a 400-seat auditorium, and one smaller lecture hall.

In addition, the 365-acre Raystown Field Station and the Davis and Robinson residence lodges on nearby Raystown Lake provides one of the country's most distinctive opportunities in environmental studies. The Raystown Field Station, encompassing a complete watershed, consists of 365 acres for exclusive College use and a full 29,000 acres for additional research and study.

The center for the social sciences, Good Hall (1967, renovated 2008) contains more than 30 classrooms, two computer facilities, and three instructional laboratories: psychology, modern languages, and human interaction. A second facility, the Early Childhood Education Center, is located in Maude-Lesher Hall.

The world languages are currently headquartered in the former Humanities Center (1979) now called World Languages Center (2011), Carnegie Hall (1907, renovated 1998) and Founders Hall (1878, restored 2009). The buildings house faculty offices, seminar rooms, classrooms, and art galleries while the surrounding lawn and campus areas accommodate outdoor classes and art displays.

GENERAL FACILITIES

Founders Hall is the oldest building on campus. Constructed in 1879 (restored 2009) on land donated by local citizens, houses most administrative offices, including the President's Office, Provost's Office, Dean of Students, QUEST, the Registrar's Office, College Advancement Offices and the departments of English and History.

The William E. Swigart, Jr. Enrollment Center (1975 re-

modeled in 1996) is located on 18th Street between Good Hall and the Brumbaugh Academic Center. It should be the first stop on any campus visit. The College Public Relations Office is located in the Pennington House, adjacent to Brumbaugh Academic Center. The Alumni Relations Office is located in the Harold B. Brumbaugh Alumni House on Mifflin Street behind Good Hall. Accounting Services, Digital Communications and Administrative Information Services are housed in The Stone House on Moore St. Business Services and Human Resources are located at 1923 Moore St.

The Oller Center for Peace and International Programs (1999) houses the offices of International Programs and Peace and Conflict Studies. The International Programs Office (IPO) coordinates Juniata's internationalization efforts. The office staff members support the College's international student population, maintain an active study abroad program, assist faculty in curricular and programmatic planning, and enhance the international environment of the College.

The Ellis Hall (1969 upgrades 2008) is noted for its imposing entrance columns, and honors Juniata's sixth and seventh presidents, Charles C. and Calvert N. Ellis. A focal point of student life, Ellis houses the Career Services Office, Public Safety Office, Information Desk, Office of Conferences and Events, Office of Student Activities, the bookstore, post office, broadcasting center for WKVR radio, and offices for Student Government, Juniata Activities Board (JAB), The Juniatian, Laughing Bush, and other student organizations. In addition, the dining hall, the 680-seat Baker Refectory (renovated 2005), Eagles Landing (renovated 2008), a ballroom, student lounge areas, and conference rooms are here.

Juniata's L.A. Beeghly Library (1963) provides the Juniata community with a web-based online public access catalog and library system, many full-text and other electronic databases, a book collection built to support undergraduate research, an extraordinary Special Collection, the College's Archives, and a staff eager to assist patrons and to collaborate. The library's online resources are accessible throughout the campus and beyond, and by study abroad students, making the library's web page a very convenient source for academic research. Laptops are available for patron checkout at the circulation desk and the basement contains an instruction room with 15 desktops.

The first floor has many desktop computers, two high

speed printers, and an Information Commons built to support comfort, technology and collaboration. The library contains some 208,000 bound volumes, microforms, government documents, audio-visual resource materials, and can offer access to over 15,000 periodicals (full-text online, microfilm and print), 200,000 e-books, as well as access to literally over a billion electronic documents, and several prominent rare book and document collections. The Library also has six collaborative areas with large screens and white boards for group study with laptops. Beeghly Library has the sixth ranked German-American rare book collection in the country. Study space can be found for over 400 patrons, including several interactive study rooms, and many network ports for laptops, including a wireless system. Almost all books and periodicals, except some rare editions in the W. Emmert Swigart Treasure Room, are accessible on an "open-stack" basis. The library offers interlibrary loan service, reserves, and classroom instruction, and welcomes suggestions for additions to the library collection. The library also houses the Writing Center and a Curriculum Library. The Friends of the Library is an active group which provide valuable support and is a very active group on behalf of the Beeghly Library. Many librarians teach College Writing Seminar Courses, as well as in the large library instruction program.

For cultural events, the Halbritter Center for the Performing Arts (2006) includes both the Rosenberger Auditorium and the Suzanne von Liebig Theatre. The Rosenberger Auditorium (built in 1940 remodeled in 2006) seats 850 and is used by most visiting speakers and performers as well as for student and faculty productions. The auditorium's acoustics are rated highly and large proscenium stage is equipped with modern lighting and sound equipment. The Suzanne von Liebig Theatre (2006) is a 200 seat, free form state of the art flexible theatre. The Center also includes a dance/movement theatre studio, costume shop, scene shop, classroom, green room, dressing rooms, and gallery space in its lobby.

The Kennedy Sports+Recreation Center (1983) provides Juniata students with modern recreational facilities. A hub for out-of-classroom activity, the Kennedy Center contains two gymnasiums; a six-lane, 25-meter swimming pool; and the F. Samuel Brumbaugh and Martha A. Brumbaugh Strength and Fitness Center (1998); racquetball/handball courts; and three expanded locker rooms. Dedicated to those from the College who served in World War I and II, the Memorial Gym (1951) serves as the center for varsity sports activity with a

seating capacity of 1,200 for basketball and volleyball.

Outdoor facilities include the Raffensperger Tennis Courts, several intramural and practice fields, Langdon/Goodale Field (baseball), the new Juniata/Huntingdon softball field, Goodman Field (2012) at Knox Stadium (football and field hockey), the Jefford F. Oller Track (2009) and the Winton Hill soccer fields.

RESIDENCE HALLS

With Juniata's residence halls and apartment facilities, the College can accommodate more than 1,200 students. Most on-campus residence halls have been completely renovated and all now include computer and cable hookups in each room. Residence halls also have lounges, and free laundry facilities.

Among the residence halls is The Cloister (1928; renovated in 1994) located at the center of campus. An outstanding example of Pennsylvania German architecture, it vividly recalls the heritage of the College. At the other end of the architectural spectrum are the East Houses (1970; renovated in 1999), a complex of four modern sections providing apartment-style living.

Tussey-Terrace (1966; renovated in 1997), Sunderland Hall (1955; renovated in 1992), and Sherwood Hall (1961; renovated in 1992) form part of the northern boundary of the campus. Maude-Lesher Hall (1957; renovated in 2005) is just across the street from the Ellis Hall, while South Hall (1962; renovated in 1995) overlooks College Field. Nathan Hall (2014) is the newest residence hall, located at the north end of campus next to the Winton Hill Soccer Fields. The residence hall features 77 single rooms, including suites with living rooms, as well as private and semi-private bathrooms.

College apartment buildings within convenient walking distance include the Mission House at 18th and Washington Streets, the "Pink Palace" on Moore Street, and Hess Apartments on 14th and Washington Streets. Five additional houses were added in 2004 and 2005, some of which house the Global Village, a globally themed living and learning community.

INSTRUCTIONAL TECHNOLOGY

Effectively using technology to strengthen the teaching-learning process is a high priority at Juniata. A Gigabit and fiber based network backbone provides

connectivity in residence halls, classrooms, laboratories and offices. All students are automatically given accounts to access the network, print and e-mail servers, and the UNIX web servers. These accounts provide e-mail, Internet access, access to the Juniata online library catalogs, and web-based searches for all students and faculty. In addition, the college provides wireless access in all academic buildings and residence halls. Currently, several major public computing areas provide students access to Windows and Mac OSX, word processing, spreadsheet, presentation, statistics and database software in addition to e-mail and Internet access. All classrooms are fitted with computer projection equipment (or large screen LCD), laptop hook-ups, and sound systems. All students are required to have access to a laptop. The college portal, 'the Arch', provides students with quick and easy access to online college services such as grades, course registration, event scheduling, campus calendars and job listings.

A description of individual facilities follows:

Brumbaugh Academic Center - including Dale Hall

- **Geographic Information Systems Lab (B201)** is a classroom/laboratory equipped with 18 Windows based machines and software focused on teaching and research using GIS tools. While this lab is primarily used for GIS, the equipment is available for general student use outside of normal class hours.
- **Networking and Telecommunications Lab (C102)** - This room is primarily used as an Information Technology and Computer Science classroom, but is available to all disciplines for daytime academic activities. This classroom has 24 Windows-based workstations with flat panel monitors, including an instructor's podium and SmartBoard. The true benefit from this room stems from the fact that there is a complete, private, internal network that is separate from Juniata's network (EagleNet). This network allows students to experiment with building their own servers, client workstations, and private sub-networks. There are dedicated machines, network equipment, simulated T1, and an internal wiring system to accommodate this private lab. This lab is not considered to be a public lab, but has been used to support Computer Science research projects, such as simulating a firewall and traffic-shaping design.
- **The Technology Solutions Center (C107)** provides faculty, staff and students the latest hardware, software and training to maximize instructional and dai-

ly use of information technology. Juniata recognizes the importance of technology in today's society and brings that technology into the classroom and across campus through the Technology Solutions Center (TSC). The TSC supports most of the newest media production software as well as standard office applications. With digital video editing software, digital video cameras available for student and faculty use, and staff to support projects, the Technology Solutions Center is the hub of digital video production for classroom projects. The TSC is always investigating new technologies (hardware and software), making it a popular work study opportunity for students. The TSC has iMac workstations and 15 laptops for faculty, staff and student checkout.

- In addition to the technology housed in the Technology Solutions Center, it is also home to much of the computer support and training on campus. The Help Desk provides support to campus employees and classroom technology. The TSC is responsible for the planning, deployment and maintenance of all classroom technology across campus. In addition, sound systems and other media for special events are maintained and coordinated through TSC.
- **Art and Theatre Studies Lab (P107)** provides faculty, staff and students the latest hardware, software for theatre and arts production. This lab houses 20 state of the art iMacs with a full compliment of software and high-end color printing.
- **On Demand Education Resource and Collaboration Center (C229)** is an area set aside for students specifically in the Innovations for Industry course sequence to gather in their respective teams to work on their client projects. Dedicated hardware, software and media presentation equipment is housed in this center specifically for the I4I course.
- **Physics Labs (P200 and P201)** - Classrooms/laboratories equipped with 8 windows based machines and software focused on teaching and research in Physics. These labs are used almost exclusively by Physics students but are available to all students outside of scheduled class times.

Good Hall

- **Video Conference Room (G201)** This room is equipped with LifeSize video conferencing equipment to facilitate distance education and online meetings.
- **Psychology Lab (G107)** This classroom/laboratory houses 11 Windows based computers focused

on teaching and research in Psychology. This room is dedicated to the Psychology students and faculty based on the nature of their research.

Beeghly Library

- The library has a laptop checkout program that enables students to sign out one of 15 wireless laptops for use anywhere within the library. There are also numerous ports in the library for wired connection to the network.
- Within the Reference Area are 30 computers used primarily by students and faculty for research using the library's online resources of over 100 databases and 10,000 periodicals, and access to over 200,000 e-books. The Library has six collaborative tables with large screens for group work with laptops, and two high speed printers.
- The **Writing Center/Library Instruction Room** in the basement of Beeghly Library is a multi-purpose facility. During the day it serves as a classroom for teaching library research techniques and resources, in the evening it serves as a writing center for peer tutoring in writing skills. The room offers the capability for hands on teaching, especially of library technology skills, with MAC workstations, video presentation equipment, and several white boards. At the same time, in the evening it can provide a quiet and private place for students to go in order to receive personal help with their writing assignments. When the room is not in use for classes or tutoring, it is available as open computer lab space for the campus.
- **The Ellis Hall (1969 upgrades 2008)** is noted for its imposing entrance columns, and honors Juniata's sixth and seventh presidents, Charles C. and Calvert N. Ellis. A focal point of student life, Ellis houses the Career Services Office, Public Safety Office, Information Desk, Office of Conferences and Events, Office of Student Activities, the bookstore, post office, broadcasting center for WKVR radio, and offices for Student Government, Juniata Activities Board (JAB), The Juniatian, Laughing Bush, and other student organizations. In addition, the dining hall (the 680-seat **Baker Refectory (renovated 2013)**, **Eagles Landing (renovated 2008)**, a ballroom, student lounge areas, and conference rooms are here.

von Liebig Center for Science

- **Public Lab (vLCS 2073)** -This classroom/laboratory is located in the von Liebig Center for Science. It contains 18 windows-based computers, Smart-

Board, and a projector. This room is primarily used for science classes, but when not in use, it acts as a public lab for all students and faculty. This room is equipped with many science oriented programs, including ChemOffice, HyperChem, ISIS Draw, and many more.

The Raystown Field Station

The Raystown Field Station is a 365-acre reserve operated as a center for environmental research and education. Located only 20 miles south of campus, the Station provides students with access to 29,000 acres of Army Corps of Engineers property, including the 8,300-acre Raystown Lake, the largest lake in Pennsylvania. The Station has modern facilities and accommodations including Shuster Hall (2003) that features state-of-the-art green architecture. Sustainable design was a central factor in the construction of the lakefront Shuster Hall. Two lakeside lodges (2006) adjacent to Shuster Hall provide modern housing complete with internet access. The Station also provides rustic accommodations at Grove Farm, a remodeled 18th century log farmhouse. Two semester-long immersion programs are currently offered, The Environmental Field Semester in the fall, and Ecology and Organismal Biology in the spring. The Station also offers an abbreviated June semester with courses focused on wildlife biology and conservation.

Students participating in the immersion semesters take all of their courses at the Field Station and live in the lodges on the lakeshore. The Environmental Field semester provides an immersion experience into the Northern Appalachians. Course topics include ecology, geographic information systems (GIS), water resources or forestry (alternating years), field research, and the integrating seminar, A Sense of Place. Field work is integrated with course work and local projects as key educational approaches to this unique experience. Students in environmental science and studies, environmental education, geology and other natural sciences will find this semester to be central to their learning experience. Ecology and Organismal Biology is a joint venture with St Francis University, including courses in zoology or wildlife management (alternating years), plant or fish ecology (alternating years), animal behavior or marine biology (alternating years) and geographic information systems (GIS).

Other features of the Station include full internet connectivity, a series of ground water monitoring wells, a

private harbor, a boat dock with a fleet of boats including a Boston Whaler, a 26' pontoon float boat and a 36' houseboat designed for aquatic laboratory work. The station also offers canoes and kayaks for student recreation. Two 4wd vehicles and a variety of field sampling gear, including microscopes, telemetry units, data loggers, laptop computers and portable water analysis labs, equip students and faculty for a wide range of field research activities. The Station hosts course activities for several academic departments, sponsors numerous faculty and student research projects and internships, provides community environmental education opportunities and is the home to the annual Juniata maple syrup program.

Baker-Henry Nature Preserve and Elizabeth Evans Baker Peace Chapel

In addition to the main campus and other buildings, Juniata owns the 316-acre Baker-Henry Nature Preserve on which is located the Elizabeth Evans Baker Peace Chapel. Architect and artist Maya Lin, who also designed the Vietnam Veterans' Memorial in Washington, D.C., and the Civil Rights Memorial in Montgomery, Alabama, designed the Baker Peace Chapel. The Chapel is a place for both private meditation and public celebration. A grassy path ties two hilltops together: on one, a single, polished granite circle set in a bed of moss; on the other, a forty-foot circle of rough-cut English granite.

Sill Business Incubator

The Bob & Eileen Sill Business Incubator (SBI) has 10,000 square feet of wet lab, professional office and light assembly space for undergraduate entrepreneurs, faculty members and community members.

Sparks Farm

Organization of the College

Board of Trustees

Terms are listed in parentheses.

OFFICERS

White, Mary M., '73, Chair

Glaeser, Carl D. '77, Vice Chair

Habecker, Gail M., '76, Treasurer

Wiser, Karla, '97, Assistant Treasurer

Moyer, Bruce L., '74, Secretary

Sheffield, Bethany D., Assistant Secretary

MEMBERS

Troha, James A., B.A., M.A., Ph.D. – Ex-Officio (2013-)

Batchelor, John L. '69, B.A., M.A., Ed.D., Retired, Director of Field Placements, Gwynedd Mercy University, Rehoboth Beach, DE (2019-2022)

Beachley, David C. '77, B.S., President, Beachley Furniture Company, Inc., Hagerstown, MD (2005-2007, 2008-2023)

Close, Nicole C. '92, B.S., M.S., Ph.D., President and Principal Biostatistician, Empiristat, Mount Airy, MD (2020-2023)

Deike, Randall C. '88, B.S., M.S., Ph.D, Retired, Senior Vice President for Enrollment Management and Student Success, Drexel University, Philadelphia, PA (2018-2024)

Donahue, Jayne K., '75, B.S., Retired, Executive Vice President and General Auditor, State Street Corporation, Southborough, MA (2013-2022)

Endres, Richard J., B.S., Owner & President, E.B. Endres Inc., Huntingdon, PA (2017-2023)

Fahey, David J. '81, Principal and Managing Director, Avison Young, Wayne, PA (2015-2024)

Glaeser, Carl D. '77, B.S., Managing Partner, Palladian Capital Partners, New York, NY (2005-2023)

Hadley, Joy L. '84, B.S., M.P.A., Senior Executive Service Member, Federal Housing Administration, Alexandria, VA (2020-2023)

Habecker, Gail M. '76, B.A., E.B. A.C., Director of Research, Stoneridge PMG Advisors, LLC, Conshohocken, PA (2003-2006, 2007-2022)

Hayes, William P. B.A., President & CEO, Kish Bankcorp, Inc., State College, PA (2004-2022)

Hess, Steven J. '91, B.S., M.S., Ph.D., Senior Director of Research & Development, The Hershey Company, Hershey, PA (2019-2022)

Hevrony, Nathan B.S., Principal & Managing Partner, HIG Equity, New York, NY (2013-2022)

Holsinger, Steven J. '76, B.A., J.D., General Counsel and Secretary, A.S.K. Foods, Inc., Palmyra, PA (1999-2000, 2001-2022)

Jensen, Eric C. '77, B.S., Ph.D., Retired, Senior Research Fellow, Eli Lilly & Company, Indianapolis, IN (2009-2024)

Johnson, Michael A. L. '07, B.S., M.D., Neurologist/Physician, Colorado Neurodiagnostics, Littleton, CO (2021-2024)

Jones, Elaine V. '76, B.S., Ph.D., Retired, Vice President, Pfizer Corporation, Wayne, PA (2014-2023)

Klag, Michael J. '74, B.S., M.D., M.P.H. Dean Emeritus, Johns Hopkins University, Baltimore, MD (2019-2022)

Kochel, Randy L. '79, B.S., M.D., Managing Physician, Family Medicine County Line, Lancaster, PA (2020-2023)

Mason, Fred C. '73, B.S., M.B.A., Retired Director, Product Source Planning, Caterpillar, Inc., Greenland, New Hampshire (2008-2023)

Monger Gray, Jodie E. '88, B.S., M.S., Ph.D., Retired President & Owner, Customer Relationship Metrics, Stevensville, MD (2002-2024)

Moyer, Bruce L. '74, B.A., J.D., President, Government/Legal Affairs, Moyer Group, Takoma Park, MD (2011-2023)

Ostrowski, Colleen E. '95, B.S., M.B.A., Senior Vice President & Treasurer, Visa, Foster City, CA (2021-2024)

Paulhamus, Richard E. '70, B.S. M.S., Consultant, Bonita Springs, FL (1997-2000, 2002-2023)

Pletcher, Carol A. '66, B.S., M.S., Ph.D., President, Pletcher Inc., Solana Beach, CA (2016-2022)

Shah, Parisha P. '01, B.S., Ph.D., Senior Research Investigator, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA (2020-2023)

Siedzikowski, Henry F. '75, B.A., J.D., President, Attorney, Elliott Greenleaf & Siedzikowski, Blue Bell, PA (2011-2023)

Statton, Timothy D. '72, B.S., Retired, Executive Vice President and Director Bechtel Group, Inc, President, Bechtel Telecommunications Global Business Unit, Member of Bechtel Corporate Board, Sonoma, CA (1998-2022)

Sunderland, Daniel K. '88, B.S., President, Sun Motor Cars, Inc., Mechanicsburg, PA (2018-2024)

Thompson, Christopher J. '87, B.S., Retired, Independent Consultant, Media, PA (2021-2024)

Valko, George P. B.S., M.D., Vice Chair, Department of Family & Community Medicine, Thomas Jefferson University, Collegeville, PA (2013-2022)

Van Horn, Carol L. '79, B.S., J.D., Senior Judge, Chambersburg, PA (2021-2024)

White, Mary M. '73, B.S., M.S., Vice President/Resource Management, HCA/HealthONE, Englewood, CO (1999-2023)

Wise, Charles W. III, A.B., M.B.A., Retired Vice President, Human Resources, PPG Industries, Pittsburgh, PA (2000-2024)

Wulczyn, Friedhelm '75, B.S., M.S., Ph.D., Senior Research Fellow, University of Chicago, Chicago, IL (2018-2024)

BOARD OF TRUSTEES EMERITI

Date in parentheses is that of appointment to the board.

Andrews, David P. '74, B.A., J.D., Hollidaysburg, PA (1992-1995, 1999)

Baker, Anne C., B.A., B.M., M.A., J.D., New York, NY (1987)

Brinker, John A. '69, B.S., M.B.A., Santa Barbara, CA (2000)

Brown, Charles C., Jr. '59, B.A., J.D., Bellefonte, PA (1976-79, 1981)

Chang-Lo, Patrick, B.S., M.S., San Rafael, CA (2011)

Cramer, John McN. '63, B.A., LL.B., Harrisburg, PA (1982)

Dale, John A. '54, B.S., M.A., L.H.D., Medford, NJ (1997)

Davis, Bruce '65, B.A., M.F.A., Los Angeles, CA (2012)

Detwiler, Donald L. '64, B.S., Hollidaysburg, PA (1994)

Gibbel, Henry H. '57, B.S., Lititz, PA (1973-76, 1978)

Green, Madeleine F., B.A., M.A., Ph.D., Chevy Chase, MD (2003)

Halbritter, Barry J. '65, B.S., Duncansville, PA (1987)

Hess, Kenneth E. '75, B.S., Ephrata, PA (2000)

Hesselbein, Frances R., L.H.D., New York, NY (1988)

Hill, John, T., B.A., Pennington, NJ (2012)

Hogan, David J. '61., B.A., New York, NY (2005)

Kindig, Karl K. '72, B.S., J.D., Abingdon, VA (1994)

McDowell, Robert N. '67, B.A., M.A., Huntingdon, PA (1999)

McKonly, Linda W. '73, B.S., Hanover, PA (2005)

Michel, Harriet R. '65, B.A., L.H.D., New York, NY (1989)

Patterson, Wayne C. '60, B.S., M.S., Ph.D., Parker, CO (1986)

Paullin, Carol Ellis '71, B.S., M.Ed., Palm Coast, FL (2011)

Pollock, Gayle W. '68, B.S., Lewisburg, PA (2005)

Schwemlein, Christoph '84, B.S. M.B.A., Nuremberg, Germany (2001)

Shreiner, Patricia J. '62, B.S., P.A., Chambersburg, PA (2001)

Strueber, Michael M. B.S., M.A., M.Ed., Hollidaysburg, PA (2003)

Swigart, Patricia B., B.T., A.A., Huntingdon, PA (1999)

Taylor, Maurice C., '72, B.A., M.A., Ph.D., J.D., Baltimore, MD (1993)

Wagoner, Robert E. '53, B.S., Palmyra, PA (1982)

Faculty

FULL-TIME FACULTY

The date in parentheses is that of first appointment to Juniata faculty.

Ames, William M., Associate Professor of Chemistry (2013). B.A., Macalester College, 2004; Ph.D., The University of Iowa, 2009.

Andrew, Bradley B., Professor of Economics (2001). B.S., Framingham State College, 1989; M.A., Ph. D., University of Connecticut, 1992, 2002.

Baran, Peter, Professor of Chemistry (2004). B.S., M.S., Ph.D., Slovak Technical University, 1985, 1986, 1992.

Barlow, J. Jackson, Charles A. Dana Professor of Politics (1991). Junior Faculty Award (1995); Beachley Distinguished Academic Service Award (2006). B.A., Carleton College, 1976; M.A., Ph.D., Claremont Graduate School, 1981, 1984.

Baughman, Kathy R., Swigart Associates Associate Professor of Business (2009). The Henry H. '57 and Joan R. Gibbel Award for Teaching Excellence, 2015, B.S., The Pennsylvania State University, 1991; M.B.A., Saint Francis University, 2009.

Beaky, Matthew M., Associate Professor of Physics (2011). B.S., Worcester Polytechnic Institute (1989). M.S., Ph.D., The Ohio State University, 1992, 1996.

Bellwoar, Hannah, Associate Professor of English (2011). B.A. Temple University, 2000; M.S., Ph.D., University of Illinois, 2004, 2011.

Bennett, Randy L., Professor of Biology (2000). B.A., Western Maryland College (1985). Ph.D., University of Wisconsin-Madison, 1993.

Benson, Bethany, Professor of Art (2007). Henry H.'57 and Joan R. Gibbel Award for Teaching Excellence (2013). B.F.A., University of Massachusetts, 2000; M.F.A., Southern Illinois University, 2007.

Benz, Judith G., Associate Professor of German (2008). B.A., The College of William & Mary, 1997; Ph.D., Yale University, 2007.

Biddle, Kathleen R., Professor of Education (2005). The Henry H. '57 and Joan R. Gibbel Award for Teaching Excellence (2010). Beachley Distinguished Academic Service Award (2019). B.S., Indiana University of Pennsylvania, 1976., Ph.D., Tufts University, 1996.

Borgardt, James D., William W. Woolford Professor of Physics (1998). The Henry H. '57 and Joan R. Gibbel Award for Teaching Excellence (2003); Beachley Distinguished Teaching Award (2012); B.S., University of California, Santa Barbara, 1989; M.S., Ph.D., University of Arizona, 1995, 1997.

Bowen, Lauren L., Provost and Professor of Politics (2015), B.A., The Ohio State University, 1984; Ph.D., University of Kentucky, 1992.

Braxton, Donald M., J. Omar Good Professor of Religion (2002).

B.A., Wittenberg University, 1986; A.M., Ph.D., The University of Chicago, 1987, 1993.

Bukowski, John F., Professor of Mathematics (1997). Beachley Distinguished Academic Service Award (2013). Beachley Distinguished Teaching Award (2018). B.S., Carnegie Mellon University, 1991; Sc.M., Ph.D., Brown University, 1992, 1997.

Buonaccorsi, Vincent P., Professor of Biology (2001). Beachley Distinguished Academic Service Award (2015). B.S., University of Notre Dame, 1993; Ph.D., College of William and Mary, 1998.

Camenga, Kristin A., Associate Professor Mathematics (2016). B.A., St. Olaf College, 1997; M.S., Ph.D., Cornell University, 2005, 2006.

Cockett, Lynn S., Professor of Communication (2001). Henry H.'57 and Joan R. Gibbel Award for Teaching Excellence (2006); B.S., Messiah College, 1989; M.L.S., Ph.D., Rutgers-The State University of New Jersey, 1993, 2000.

Cook-Huffman, Celia B., W. Clay and Kathryn H. Burkholder Professor of Conflict Resolution (1990). Junior Faculty Award (1996). Beachley Distinguished Academic Service Award (2010). B.A., Manchester College, 1986; M.A., University of Notre Dame, 1988; Ph.D., Maxwell School of Citizenship and Public Affairs of Syracuse University, 1993.

DeHaas, Sarah J., Martin G. Brumbaugh Professor of Education (1997). B.S., Slippery Rock State College 1980. M.Ed, Providence College 1988; Ph.D., Pennsylvania State University 1991.

DeVries, Cynthia Merriwether, Associate Professor of Sociology (2002). Beachley Distinguished Academic Service Award (2018). B.S., M.S., Ph.D. The Pennsylvania State University, 1990, 1994, 2000.

Dickey, William M., Associate Professor of English (2008). B.A., Shippensburg University, 2000; M.A., University of New Orleans, 2003; Ph.D., Indiana University of Pennsylvania, 2010.

Dries, Daniel R., Associate Professor of Chemistry (2012). The Henry H. '57 & Joan R. Gibbel Award for Teaching Excellence (2018); B.S., University of Delaware, 2000; Ph.D., University of California, San Diego, 2007.

Dunwoody, Philip T., Professor of Psychology (2004). The Henry H. '57 and Joan R. Gibbel Award for Teaching Excellence (2010). B.A., Richard Stockton College of New Jersey, 1994; M.S., Ph.D., University of Georgia, 1998, 2000.

Escuadro, Henry, Professor of Mathematics (2007). B.S., M.S., Ateneo de Manila University, 1994, 1997; Ph.D. Western Michigan University, 2006.

Fala, Grace M., Professor of Communication (1992). Junior Faculty Award (1998); Beachley Distinguished Academic Service Award (2004). A.A., Bucks County Community College, 1978; B.A., M.A., West Chester University, 1986, 1988; Ph.D., The Pennsylvania State University, 1993.

Fletcher, Alison, W. Newton and Hazel A. Long Professor of History (2007). The Henry H. '57 and Joan R. Gibbel Award for Teach-

ing Excellence (2011). Bryn Mawr College; M.A., Ph.D., The Johns Hopkins University, 1995, 2003.

Frazier-Yoder, Amy, Associate Professor of Spanish (2009). The Henry H. '57 and Joan R. Gibbel Award for Teaching Excellence (2017). B.A., Washington & Lee University, 1999; M.A., Ph.D., University of Virginia, 2004, 2010.

Gibboney, Ryan, Assistant Professor of Integrated Media Arts (2018). B.A., Savannah College of Art and Design, 2008; MFA, Purdue University, 2013

Glazier, Douglas S., Professor of Biology (1980). Beachley Distinguished Academic Service Award (2000). B.A., Oakland University, 1973; Ph.D., Cornell University, 1979.

Goldstein, Peter M., John Downey Benedict Professor of English (1991). Beachley Distinguished Teaching Award (2004). B.A., Harvard University, 1976; J.D., University of Southern California, 1979; Ph.D., University of California, Los Angeles, 1991.

Grant, Christopher J., Assistant Professor of Biology (2019) B.S., M.S., Ph.D., The Pennsylvania State University, 2003, 2005, 2012.

Hayer, Holly J., Associate Professor of Spanish (2005). B.A., Ursinus College, 1985; M.S., Ph.D., Georgetown University, 1991, 1997.

Hayes, Dawn, Assistant Professor of Education (2018). B.S., Juniata College, 1995; M.A., Wilkes University, 2007; Ph.D., University of Pennsylvania, 2017.

Henderson, Michael S., Associate Professor of French (1992). Beachley Distinguished Academic Service Award (2012); B.A., M.A., Arizona State University, 1982, 1984; Ph.D., University of California, Santa Barbara, 1991.

Hosler, Jay, David K. Goodman '74 Professor of Biology (2000). The Henry H. '57 and Joan R. Gibbel Award for Teaching Excellence (2005). Beachley Distinguished Teaching Award (2016). B.A., DePauw University, 1989; Ph.D., University of Notre Dame, 1995.

Hsiung, David C., Dr. Charles R. and Shirley A. Knox Professor of History (1991). Junior Faculty Award (1995). Beachley Award for Distinguished Teaching (2007). B.A., Yale University, 1983; M.A., Ph.D., The University of Michigan, 1985, 1991.

Innerst, Melissa, Assistant Professor of Mathematics (2019). B.S., Texas Lutheran University, 2015; M.S., Ph.D., Baylor University, 2016, 2019.

Johanesen, Katharine, Assistant Professor of Geology (2015). B.S., Beloit College, 2006; Ph.D., University of Southern California, 2011.

Johnson, Dennis L., George "Fritz" Blechschmidt '54 Professor of Environmental Science (1999). B.A., Lock Haven University, 1989; B.S., M.S., Ph.D., The Pennsylvania State University, 1989, 1992, 1995.

Jones, Kathleen M., Professor of Education (2005). B.S., M.S., Ph.D., The Pennsylvania State University, 1985, 1995, 2009.

Keeney, Jill B., Charles A. Dana Professor of Biology (1994). Junior Faculty Award (1999). Beachley Distinguished Academic Service Award (2011). B.S., The Pennsylvania State University, 1985; Ph.D., Washington University, 1990.

Konduk, Burak Cem, Assistant Professor of Management (2018). B.A., Bilkent University, 2001; MBA, Sabanci University, 2003; Ph.D., Georgia State University, 2013).

Kruse, Gerald W., John '54 and Irene '58 Dale Professor of Math and Computer Science (1999). Beachley Distinguished Academic Service Award (2017). B.S., University of Illinois, 1985; Sc.M., Ph.D., Brown University, 1993, 1997.

Lamendella, Regina, George '75 and Cynthia '76 Valko Endowed Professorship In Biological Sciences (2012). The Henry H. '57 and Joan R. Gibbel Award for Teaching Excellence (2016). B.S., Lafayette College, 2004; M.S., Ph.D., University of Cincinnati, College of Engineering, 2006, 2009.

Latten, James E., Professor of Music (2002). B.S., Mansfield University, 1986; M.S., Indiana University, 1990; Ph.D., The Pennsylvania State University, 2002.

Maleska, Monika, Professor of Art (2006). B.A., University of Manitoba, Canada, 1998; M.F.A., University of Texas at San Antonio, 2001

Mathur, Amy E., Associate Professor of English (2006). B.A., Juniata College, 1996; M.S., Carnegie Mellon University, 1997; Ph.D., University of Arizona, 2009.

Mathur, Ryan D., Professor of Geology (2001). B.A., Juniata College, 1996; Ph.D., University of Arizona, 2000.

Matter, John M., Associate Professor of Biology (1997). B.A., University of Missouri, 1983; M.S., Saint Louis University, 1987; Ph.D., University of Florida, 1995.

McKellop, J. Mark, Professor of Psychology (2002). Henry H.'57 and Joan R. Gibbel Award for Teaching Excellence (2008) B.A., The Ohio State University, 1994; M.A., Ph.D., University of Cincinnati, 2000.

Meersman, James, Assistant Professor of Accounting, Business & Economics (2017). B.A., M.S., Texas A&M University, May's School of Business, 2013, 2014.

Merovich, George T., Jr., Associate Professor of Environmental Science & Studies (2015). B.S., The University of Arizona, 1994; M.S., Frostburg State University, 1998; Ph.D., West Virginia University, 2007.

Miller, Robert J., Rosenberger Professor of Christian and Religious Studies (2003). B.A., St. John's College, 1975; M.A., University of California, Santa Barbara, 1978; M.A., Ph.D., Claremont Graduate School, 1980, 1986.

Muth, Norris Z., Professor of Biology (2007). B.A., Brown University, 1997; M.S., Yale School of Forestry and Environmental Studies, 1999; Ph.D., State University of New York, Stony Brook, 2006.

Nagengast, Emil, Professor of Politics (1996). Junior Faculty

Award (2000). Beachley Award for Distinguished Teaching (2011). B.A., Middlebury College, 1984; M.A., University of Kansas, 1990; Ph.D., University of Pittsburgh, 1996.

Page, Amanda M., Assistant Professor of English (2013). B.A., Wellesley College, 2003; M.A., Ph.D., University of North Carolina at Chapel Hill, 2005, 2011.

Pelkey, Neil W., Associate Professor of Environment Science and Studies and Information Technology (2002). B.A., University of California; Ph.D., University of California.

Peruso, Dominick F., Professor of Accounting (1999). Beachley Award for Distinguished Teaching (2016). B.S., Saint Francis College, 1995; M.Ed., Ph.D., The Pennsylvania State University, 1999; 2012; C.P.A. in Pennsylvania.

Plane, Dennis L., Professor of Politics (2004). B.A., Rollins College, 1993; Ph.D., University of Texas at Austin, 2002.

Poole, Territa L., Professor of Psychology (2017). B.S., M.S., M.A., Ph.D., 2017, University of West Alabama.

Powell, Matthew G., Professor of Geology (2007). Henry H.'57 and Joan R. Gibbel Award for Teaching Excellence (2013). B.S., M.S., Virginia Polytechnic Institute and State University, 1998, 2000; Ph.D., The Johns Hopkins University, 2005.

Prill, Susan E., Professor of Religion (2006). B.A., Bard College, 1996; M.A., University of Michigan, 2000; Ph.D., University of London, 2005.

Radis, Susan T., Professor of Social Work and Sociology (1984). B.S., The Pennsylvania State University, 1969; M.S.S., Bryn Mawr College, 1973.

Ramakrishnan, Uma, Professor of Environmental Science and Studies (2005). B.Sc., Bangalore University; M.S., Pondicherry University; Ph.D., University of California, Davis, 1999.

Rhodes, Loren K., John and Irene Dale Professor of Information Technology (1980). Lindback Distinguished Teaching Award (1986). Beachley Award for Distinguished Teaching (2008). B.S., M.S., Ph.D., The Pennsylvania State University, 1979, 1980, 1991.

Roberts, Wade, Associate Professor of Philosophy (2008). B.A., Birmingham-Southern College, 1996; M.A., Ph.D., Duquesne University, 1997, 2007.

Roney, James N., I. Harvey Brumbaugh Professor of Russian (1988). Lindback Distinguished Teaching Award (1993). Beachley Distinguished Teaching Award (2009). B.A., Dartmouth College, 1973; M.A., Ph.D., The Ohio State University, 1975, 1981.

Rosenberger, Randy M., Professor of Management (1997). B.A., Dickinson College, 1980; M.B.A., Cornell University, 1985; Ph.D., The Pennsylvania State University, 1999.

Roth, Kimberly A., Professor of Mathematics (2006). B.A., Oberlin College, 1996; Ph.D., The Pennsylvania State University, 2002.

Shelley, Russell K., Elma Stine Heckler Professor of Music and Director of Choral and Vocal Activities (1991). Junior Faculty Award

(1997). B.S., B.S.M., Baptist Bible College, 1985; M.S., Mansfield University, 1986; Ph.D., The Pennsylvania State University, 1997.

Shen, Li, Assistant Professor of Marketing (2017). B.A., Central South University, 2005; M.S., Ph.D., Southern New Hampshire University, 2010, 2016.

Stenson, Catherine A., Professor of Mathematics (2000). Sc.B., Brown University, 1994; M.S., Cornell University, 1997; Ph.D., Cornell University, 2000.

Stiffler, Douglas A., Associate Professor of History (2002). A.B., Harvard College, 1990; M.A., University of California, 1993.

Streb, Jennifer L., Professor of Art History (2008), The Henry H. '57 and Joan R. Gibbel Award for Teaching Excellence, 2014, Juniata College, 1993; M.A., Ph.D., The Pennsylvania State University, 1997, 2004.

Thomas, William H., Professor of Information Technology (2001). Beachley Distinguished Teaching Award (2017). B.S., Lock Haven University, 1983; M.S., Shippensburg University, 1990.

Thurston-Griswold, Henry, Professor of Spanish (1992). Beachley Distinguished Teaching Award (2003) B.A., State University of New York at Cortland, 1981; M.A., Ph.D., The University of Texas at Austin, 1983, 1989.

Tuten, Belle S., Charles A. Dana Professor of History (1997). Beachley Junior Faculty Award (2001) Beachley Award for Distinguished Teaching (2013). B.A., College of Charleston, 1991; M.A., Ph.D., Emory University, 1994, 1997.

Tuten, James H., Professor of History (2006). The Henry H. '57 and Joan R. Gibbel Award for Teaching Excellence (2009). Beachley Distinguished Teaching Award (2019). B.A. College of Charleston, 1990; M.A., Wake Forest University, 1992; Ph.D., Emory University, 2006.

Unger, John B., Associate Professor of Chemistry (2012). B.S., Hobart College; Ph.D., University of California Santa Barbara.

Utterback, Neal, Associate Professor of Theatre Arts (2012). B.S., Coastal Caroline University, 1998; MFA, University of Florida, 2001; Ph.D., Indiana University, 2012.

Walker, Polly O., Associate Professor of Peace & Conflict Studies (2015). B.S., New Mexico State University; 1975, M.A., New Mexico State University, 1983, Ph.D., University of Queensland, Australia, 2001.

Wang, Wei-Chung, Associate Professor of Business & Economics and Director of Program Global Program Development (2010). B.A., Shih Hsin University, 2000; M.S., Ph.D., University of California, Irvine, 2005.

Wang, Xinli, Professor of Philosophy (1999). B.S., Changchun Institute of Geology, China 1982; M.A., Huazhong University, 1988; Ph.D., University of Connecticut, 1999.

Weimer, Donna S., Colonel Sedgley and Elizabeth Bailey Thornbury Professor of Communication (1990). Lindback Distinguished Teaching Award (1993). Beachley Award for Academic Service

(2003). B.A., M.A., Ph.D., The Pennsylvania State University, 1974, 1983, 1990.

Welliver, Daniel M., Professor of Sociology (2006). Henry H. '57 and Joan R. Gibbel Award for Teaching Excellence (2012); B.A., Juniata College, 1979; M.C.P., The Pennsylvania State University, 1990; Ph.D., Indiana University of Pennsylvania, 2011.

Westcott, Kathryn M., Professor of Psychology, (2003). Beachley Award for Distinguished Teaching (2014). B.A., The Ohio State University, 1994; M.Ed., Ph.D., University of Cincinnati, 1998, 2001.

White, James D., William I. and Zella B. Book Professor of Physics (1998). The Henry H. '57 and Joan R. Gibbel Award for Teaching Excellence (2004).); Beachley Award for Distinguished Teaching (2014). B.A., Carleton College, 1985; M.Ed., Ph.D., The Pennsylvania State University, 1993, 1994.

Widman, David R., Professor of Psychology (1999). B.S., University of Wyoming, 1987; Ph.D., University of Albany, State University of New York, 1992.

Williams, Ursula, Assistant Professor of Chemistry (2014). B.S., Union College, 2009; Ph.D., University of Pennsylvania, 2014.

Worley, Sarah C., Associate Professor of Communication (2004). B.A., Juniata College, 2000; M.A., The University of Colorado, 2003., Ph.D. The Pennsylvania State University, 2016.

Wright, John J., Associate Professor of Computer Science (2002). B.S., Juniata College, 1993; M.S., Villanova University, 2000.

FACULTY EMERITI

Date in Parentheses is that of emeritus status.

Bowser, John D., Associate Professor of Mathematics, Emeritus (1997). B.S., Juniata College, 1957; M.S., West Virginia University, 1959; Ph.D., Pennsylvania State University, 1976.

Boyle, Michael D.P., William J. von Liebig Chair in Biomedical Sciences, Emeritus (2012). Beachley Award for Distinguished Teaching (2010). B.S., University of Glasgow, Scotland, 1971; Ph.D., Chester Beatty Research Institute, England, 1974.

Burkhardt, Marlene E., Professor of Accounting, Business and Economics, Emerita (2019). B.A., Wilkes College, 1980; M.S.W., University of Maryland, 1982; Ph.D., The Pennsylvania State University, 1990.

Cherry, Elizabeth A. Ellis, Professor of History, Emerita (1998). Beachley Distinguished Academic Service Award (1990). Beachley Distinguished Teaching Award (1998). A.B., College of Wooster, 1956; A.M., Columbia University, 1957.

Church, Evelyn H., Assistant Professor of Spanish, Emerita (1991). A.B., Wake Forest College, 1949; M.A., Middlebury College, 1970.

Crouch, Howard H., Martin G. Brumbaugh Professor of Education, Emeritus (1989). B.S., Ohio State University, 1949; Ed.M., Westminster College, 1953; Ph.D., Ohio State University, 1964.

Demarest, Jeffery R., Professor of Biology, Emeritus (2014). B.S., Monmouth College, 1973; Ph.D., University of California, Berkeley, 1980.

Donaldson, James R., Professor of Accounting, Business and Economics, Emeritus (2012). Beachley Distinguished Academic Service Award (1998). B.S., Juniata College, 1967; M.A., University of Akron, 1972; M.B.A., Syracuse University, 1984.

Drews, David R., Charles A. Dana Professor of Psychology, Emeritus (2004). Beachley Distinguished Teaching Award (1989). B.A., Dennison University, 1965; M.S., Ph.D., University of Delaware, 1968, 1970.

Duey, William E., Assistant Professor of Economics and Business Administration and Registrar, Emeritus (2000). B.S., The Pennsylvania State University, 1959; MBA, George Washington University, 1970; M.A., Shippensburg University, 1986.

Esch, Linda Sue, Charles A. Dana Professor of Mathematics, Emerita (2007). Lindback Distinguished Teaching Award (1979). Beachley Distinguished Teaching Award (1990). B.S., Juniata College, 1968; A.M., Ph.D., Boston University, 1970, 1974.

Fisher, Tom L., Professor of Chemistry, Emeritus (2013). Beachley Distinguished Academic Service Award (2002). B.S., Old Dominion University, 1964; Ph.D., Iowa State University, 1970.

Glosenger, Fay I., Dilling Professor of Early Childhood Education, Emerita (2018). Lindback Distinguished Teaching Award (1988). Beachley Distinguished Academic Service Award (1997). B.S., M.Ed., Ph.D., Pennsylvania State University, 1971, 1977, 1984.

Gooch, James L., Professor of Biology, Emeritus (2000). Beach-

ley Distinguished Teaching Award (1982). B.S., M.S., West Virginia University, 1960, 1967, Ph.D., University of Delaware, 1968.

Gustafson, Todd D., Professor of Biology, Emeritus (2007). Lindback Distinguished Teaching Award (1981). B.A., Jacksonville University, 1971; M.S., Ph.D., University of Wisconsin, 1973, 1976.

Heberling, Paul M., Professor of Anthropology, Emeritus (1989). Beachley Distinguished Teaching Award (1969) A.B., M.S., Pennsylvania State University, 1948, 1950.

Heller, Bernice Engman, Associate Professor of Spanish, Emerita (1997). A.B., College of Wooster, 1953; A.M., University of Kansas, 1955.

Heller, Max N., Associate Professor of Mathematics and Computer Science, Emeritus (1997). B.S., M.S., Pennsylvania State University, 1958, 1976; M.A.T., Indiana University, 1967.

Hochberg, Mark R., Charles A. Dana Professor of English, Emeritus (2017). Beachley Distinguished Teaching Award (1980). B.A., University of Pennsylvania, 1966; M.A., Ph.D., Cornell University, 1969, 1970.

Jaeger, Klaus A.G., I. Harvey Brumbaugh Professor of German, Emeritus (2008). Beachley Distinguished Teaching Award (1992). M.A., Ohio State University, 1965; Ph.D., Pennsylvania State University, 1989.

Kaminsky, Edward F., Professor of Economics and Business Administration, Emeritus (1997). B.S., King's College, 1996; M.B.A., Wilkes College, 1973; C.P.A. in Pennsylvania.

Katz, Judith N., Associate Professor of English, Emerita (2014). Beachley Award for Distinguished Teaching (2006). B.A., City College of New York, 1966; M.A., Ph.D., Pennsylvania State University, 1968, 1972.

Kaylor, Earl C., Jr., Charles A. Dana Supported Professor of History, Emeritus (1991). Beachley Distinguished Teaching Award (1972). A.B., Juniata College, 1946; B.D., Bethany Theological Seminary, 1949; A.M., University of Notre Dame, 1951; Ph.D., Pennsylvania State University, 1963.

Kipphan, Klaus P., Charles A. Dana Professor of History, Emeritus (2003). Beachley Distinguished Teaching Award (1974, 2001). A.B., Gymnasium Eberbach, Germany, 1959; A.M., Fairleigh Dickinson University, 1965; Ph.D., University of Heidelberg, 1969.

Kirchhof-Glazier, Debra A., Professor of Biology, Emerita (2017). Lindback Distinguished Teaching Award (1987). Beachley Distinguished Academic Service Award (1999) B.S., Lebanon Valley College, 1973; Ph.D., Cornell University, 1979.

Lakso, James J., Professor of Accounting, Business and Economics, Emeritus (2013). Beachley Distinguished Teaching Award (1983). Beachley Distinguished Academic Service (2005). B.A., Wittenberg University, 1967; M.A., Ph.D., University of Maryland, 1970, 1973.

Lewis, Janet R., Associate Professor of Philosophy, Emerita (2008). Sears-Roebuck Teaching Excellence and Campus Leadership Award (1991). Beachley Award for Distinguished Teaching

(1999) B.A., Wilson College, 1964; M.A., Bryn Mawr College, 1968.

Masters, Henry G., Associate Professor of Psychology, Emeritus (1999). B.A., University of Rochester, 1958; M.A., Emory University, 1961; Ph.D., Kansas State University, 1968.

McBride, Alexander T., Professor of Art, Emeritus (2005). Beachley Distinguished Teaching Award (2002). B.F.A., Rhode Island School of Design, 1962; M.F.A., Cornell University, 1964.

Mitchell, Donald J., Professor of Chemistry, Emeritus (2003). Beachley Distinguished Teaching Award (1986). Beachley Distinguished Academic Service Award (1991). B.S., Westminster College, 1960; Ph.D. Vanderbilt University, 1965.

Murray, M. Andrew, Elizabeth Evans Baker Professor of Religion and Peace and Conflict Studies and Director of the Baker Institute, Emeritus (2008). L.H.D. Bridgewater College (1998). Beachley Distinguished Academic Service Award (1991). B.A., Bridgewater College, 1964; M.Div., D.Min., Bethany Theological Seminary, 1968, 1980; L.H.D., Manchester College, 1993.

Mutti, Laurence J., Professor of Geology (2015). Lindback Distinguished Teaching Award (1982). Beachley Distinguished Teaching Award (1995). B.A., Beloit College, 1971; Ph.D., Harvard University, 1978.

Norris, Wilfred G., William I. and Zella B. Book Professor of Physics, Emeritus (1998). Beachley Distinguished Academic Service Award (1993). B.S., Juniata College, 1954; Ph.D., Harvard University, 1963.

Ochiai, Ei-Ichiro, H. George Foster Chair of Chemistry, Emeritus (2005). B.S., M.S., Ph.D., University of Tokyo, 1959, 1961, 1964.

Park, Valerie G., Associate Professor of Education, Emeritus (2016). B.S., Pennsylvania State University, 1979; M.Ed., Shippensburg State University, 1982; Ph.D., Pennsylvania State University, 2005.

Reed, Ruth E., Jacob H. and Rachel Brumbaugh Professor of Chemistry, Emeritus (2012). Beachley Distinguished Teaching Award (1993). B.A., Winthrop College, 1968; Ph.D., Virginia Polytechnic Institute and State University, 1974.

Reilly, F. Robert, Charles A. Dana Professor of Social Work and Sociology, Emeritus (2012). Beachley Distinguished Teaching Award (1991). B.A., Susquehanna University, 1971; M.S.W., Marywood College School of Social Work, 1974; A.C.S.W. member.

Reingold, I. David, H. George Foster Chair of Chair of Chemistry, Emeritus (2012). Lindback Distinguished Teaching Award (1992). Beachley Distinguished Academic Service Award (2001). A.B., Dartmouth College, 1971; Ph.D., University of Oregon, 1976.

Richardson, Kim M., Professor of Education, Emerita (1979). Lindback Distinguished Teaching Award (1983). Beachley Distinguished Academic Service Award (1996). B.A., Duke University, 1969; M.S., Old Dominion University, 1972; Ph.D., Temple University, 1981.

Rockwell, Kenneth H., Professor of Biology, Emeritus (2000). Beachley Distinguished Teaching Award (1979). B.S., Juniata Col-

lege, 1957; M.S., Brown University, 1960; Ph.D., Pennsylvania State University, 1967.

Rosell, Karen J., Professor of Art History, Emerita (2019). Lindback Distinguished Teaching Award (1989). Beachley Distinguished Teaching Award (1997). B.A., University of Richmond, 1980; M.A., Virginia Commonwealth University, 1982; Ph.D., Ohio University, 1986.

Russey, William E., Charles A. Dana Supported Professor of Chemistry, Emeritus (2001). Beachley Distinguished Teaching Award (1975). B.A., Kalamazoo College, 1961; M.A., Ph.D., Harvard University, 1964, 1966.

Schettler, Paul D., Jr., Charles A. Dana Professor of Chemistry, Emeritus (2017). Beachley Distinguished Teaching Award (1978). Beachley Distinguished Academic Service Award (1995). B.S., University of Utah, 1958; Ph.D., Yale University, 1964.

Siems, Norman E., William W. Woolford Professorship in Physics, Emeritus (2011). Lindback Distinguished Teaching Award (1984). Beachley Distinguished Teaching Award (1994). Beachley Distinguished Academic Service (2009). B.S., Rensselaer Polytechnic Institute, 1966; M.S., Johns Hopkins University, 1970; Ph.D., Cornell University, 1976.

Sowell, David L., Professor of History, Emeritus (2017). Junior Faculty Award (1994). Beachley Distinguished Academic Service (2007). A.B., Western Kentucky University, 1975; B.A., Grand Valley State Colleges, 1976; M.A., Ph.D., University of Florida, 1980, 1986.

Sunderland, Benjamin B., Professor of Mathematics, Emeritus (2016). Beachley Distinguished Teaching Award (2015); B.S., M.A., Ph.D., Pennsylvania State University, 1970, 1975, 1982.

Trexler, J. Peter, Professor of Geology, Emeritus (1989). Beachley Distinguished Teaching Award (1976). A.B., M.S., Lehigh University, 1950, 1953; Ph.D., University of Michigan, 1964.

Troy, Jack G., Associate Professor of Art, Emeritus (2005). B.S., West Chester College, 1961; M.A., Kent State University, 1967.

Wagoner, Paula L., Associate Professor of Anthropology (2015). A.A., Sheridan College, 1988; A.B., Smith College, 1991; M.A., Ph.D., Indiana University, 1995, 1997.

Wagoner, Robert E., Professor of Philosophy, Emeritus (2000). Beachley Distinguished Teaching Award (1988). B.S., Manchester College, 1952; Ph.D., Harvard University 1968.

Wampler, Dale L., Professor of Computer Science, Emeritus (1999). Beachley Distinguished Academic Service Award (1981). A.B., Bridgewater College, 1957; Ph.D., University of Wisconsin, 1962.

Washburn, Robert H., Professor of Geology, Emeritus (2001). B.S., M.S., University of Nebraska, 1959, 1961; Ph.D., Columbia University, 1966.

Weaver, Patricia C., Charles A. Dana Professor of Accounting, Business and Economics, Emerita (2019). Beachley Award for Distinguished Teaching (2000). Beachley Distinguished Academic Service (2008). B.A., M.A., M.S., The Pennsylvania State University,

1963, 1965, 1991; C.P.A. in Pennsylvania.

Woodrow, Thomas W., Martin G. Brumbaugh Professor of Education, Emeritus (1997). Beachley Distinguished Academic Service Award (1992). B.S., Juniata College, 1958; M.Ed., Indiana University of Pennsylvania, 1966; D.Ed., Pennsylvania State University, 1976.

Wright, Dale E., Professor of Psychology, Emeritus (2002). A.B., Chico State College, 1959; B.D., Berkeley Baptist Divinity School, 1962; Ph.D., University of Vermont, 1970.

Zimmerer, Robert P., Charles A. Dana Supported Professor of Biology, Emeritus (1993). Beachley Distinguished Teaching Award (1985). B.S., University of Wisconsin, 1954; M.S., Cornell University, 1961; Ph.D., Pennsylvania State University, 1966.

Administration

Office of the President

PRESIDENTS EMERITI

Date in parentheses is that of emeritus status.

Kepple, Jr., Thomas R., Emeritus (2013). B.A., Westminster College, 1970; M.B.A., Ed.D., Syracuse University, 1974, 1984; L.H.D., Elizabethtown College, 2011; L.H.D., Juniata College, 2013.

Neff, Robert W., President, Emeritus (1998). B.S., The Pennsylvania State University, 1958; B.D., M.A., Ph.D., Yale University, 1961, 1964, 1969; D.D., Juniata College, Manchester College, 1979; L.H.D., Bridgewater College, 1979.

INFORMATION TECHNOLOGY AND LIBRARY SERVICES

ACADEMIC AFFAIRS

STUDENT AFFAIRS

ATHLETIC DEPARTMENT COACHES & ADVISORS

COLLEGE ADVANCEMENT

MARKETING

COLLEGE ENROLLMENT

BUSINESS AFFAIRS

CAMPUS MINISTRY

STAFF & DEPARTMENTAL ASSISTANTS

Academic Calendar

Curriculum

Undergraduate Degrees and Certificates

Bachelor's Degree Requirements

BACHELOR'S DEGREE REQUIREMENTS

- I. General Education
- II. Program of Emphasis (POE)
- III. Juniata Portfolio. All Juniata students will complete a portfolio of their work from their general education courses and from their POE capstone course. These requirements are described by the General Education Committee.
- IV. A minimum of 120 credit hours with a grade of D- or better, including the courses described above.
- V. A minimum cumulative grade point average of 2.0 on a 4.0 scale.
- VI. Policies

Residency

Students are allowed to transfer credits during their last semester within the provisions of the transfer policy. However, 30 of the last 36 credits must be taken in residence. There are degree requirements that are unique to Juniata and may not be completed elsewhere. Students participating in cooperative programs, study abroad programs, and other Juniata-approved programs are considered to be in residence.

Effective Date

Students must complete the graduation requirements in effect on the date of their matriculation.

PARTICIPATION IN COMMENCEMENT CEREMONY

There are two distinct processes that indicate com-

pletion of a student's academic career: satisfactory completion of academic requirements and participation in the commencement ceremony. This policy is solely concerned with the ceremonial event of commencement; i.e. not the conferral of degree.

Students who have not completed all graduation requirements will be permitted to participate in the commencement ceremony under the following circumstances:

- The remaining coursework consists of not more than eight academic credits, and the student is in good academic standing, defined in 3.1.5.2 Academic Standards of Progress. Whenever possible, the student submits a request to participate to the Registrar's Office by April 1st for consideration. The request to participate must provide a specific, detailed, and realistic plan for completing the remaining credits by the end of the summer and approved by the Registrar's Office.
- Students who have studied away and are waiting for official transcripts from the external institution may participate in the commencement ceremony if verification of sufficient academic progress at the external institution is provided to the Registrar's Office.
- Partner degree students who are waiting for official transcripts from their home institution may participate in the May commencement ceremony.
- Students in 3+ programs may participate in the commencement ceremony following their fourth or fifth year if verification of sufficient academic progress at the external institution is provided to the Registrar's Office.
- 3+ programs are defined as designated programs where a student completes their final year at an external institution.

Petitions for all exceptions will be reviewed by the Student Academic Development Committee as provided in Section 1.6.1.4.B.2 of the Faculty Handbook. The committee will report decisions to the Provost.

Students who have not completed all outstanding requirements by the start of the academic semester following commencement will be charged an enrollment fee per term. Students who have not completed all outstanding requirements within three years will be administratively withdrawn and readmission will be required.

GENERAL EDUCATION REQUIREMENT

General Education Mission: General education engages students in common academic experiences that integrate learning across academic fields with distinctive ways of knowing and develop habits of mind necessary for reflective choices and effective action in fulfilling careers, engaged citizenship, and meaningful lives. All general education courses will make contributions to a student portfolio.

A. First Year Experience

First year students take part in a two-semester course sequence (4 credits in the first semester and 3 credits in the second semester) designed to help prepare them for success at Juniata.

1. First Year Foundations

First Year Foundations consists of a one-credit course in the first semester. This course provides students with the resources, skills, and information that will assist them in mastery of academic and social life at Juniata College. Along with acquisition of skills and knowledge, students will reflect on their journey at the start of their Juniata career, helping to set the path for the rest of their academic career. Students will add reflection to their portfolio to document their academic progress at Juniata College. Through thoughtful reflection of the Principles of the Liberal Arts Lifestyle, the Attributes of a Juniata Graduate, and the College's Mission Statement, students will engage with their classmates as they lay the foundations of success. This course will connect students with a wide variety of campus resources.

Students will demonstrate their ability to meet the following learning outcomes:

- substantively reflect on their own values and future goals
- substantively reflect on their place within the local and global community
- describe how a holistic and intentional approach to life fosters our collective wellbeing

Students will “think about who you are.” What does it mean for students to be in college, at this place, at this time? What are their goals for the future? Students will consider their values and goals both individually and in the context of a larger community: campus, Huntingdon, Pennsylvania, and the world. Additionally, students work to develop skills necessary for lifelong

learning.

2. First Year Composition

First Year Composition is a three-credit course taken during the first semester of the first year. It focuses on developing critical reading, writing, and analytical skills. Course themes will be chosen by individual instructors. All First Year Composition courses are designated using an FYC course prefix, with the topic following the course number.

First Year Composition courses follow a process-oriented approach to college work and include peer review, individual conferences with the instructor, and revision cycles.

While course content will vary by instructor, there will be a two-week module related to diversity, organized around the instructor's selections from a common set of readings. These common readings will be determined by a learning community that includes some of those faculty members teaching the course.

The goals of the course are to introduce students to different types of reading and writing using varied models, genres, and forms (such as popular, scholarly, digital, and print). These courses build students' information literacy skills, rhetorical knowledge, critical thinking, and knowledge of appropriate genre and style conventions. First Year Composition courses will focus on developing these skills to prepare students for future academic work.

First Year Composition courses are capped at 18 students per section.

Students will demonstrate their ability to meet the following learning outcomes:

- write a persuasive argument using writing process strategies including invention, research, drafting, sharing with others, revising in response to reviews, and editing
- use a variety of credible secondary sources as evidence

3. First Year Seminar

First Year Seminar is a three-credit course taken during the second semester of the first year. It is an introduction-by-immersion to college-level learning. Seminar topics are chosen by individual instructors and may, but need not, be interdisciplinary. All First Year Seminar courses are designated using an FYS course pre-

fix, with the topic following the course number.

The format is primarily seminar, with the option of some lecture in support of seminar discussions. The content of the course is built on challenging reading and will include an approximately two-week module on the liberal arts, organized around the instructor's selections from a common set of readings, which gives explicit attention to such things as the role of the liberal arts, how the course topic fits into the liberal arts, and how engagement with the topic can contribute to the common good and to "thinking about who you are." Students develop the intellectual skills of analyzing evidence and arguments by examining issues such as what counts as evidence, what makes arguments strong or weak, and common errors in reasoning (what logicians call "informal fallacies").

First Year Seminars are capped at 18 students per section.

Students will demonstrate their ability to meet the following learning outcomes:

- communicate effectively through written and oral expression
- demonstrate analytical thinking, critical questioning, and examination of evidence
- use a variety of credible primary and secondary sources as evidence

B. Ways of Knowing

The Ways of Knowing requirement teaches students to think critically and intellectually about the world, introduces students to different epistemological perspectives, and helps students realize the benefits of interdisciplinary inquiry and a liberal arts education.

Because dialogue, debate, and active learning are central to the liberal arts tradition, Ways of Knowing courses will emphasize seminar formats or active learning and are capped at 28 students (lower caps are permissible if requested by the instructor and approved by the department chair and the Provost's Office. Each Ways of Knowing requirement may be met through a single course or through a planned sequence of courses totaling at least three credits.

To foster an awareness of how Ways of Knowing are similar or different, each course or sequence of courses must include some comparison with another Way of Knowing. Faculty and students will consider how this second Way of Knowing supplements our un-

derstanding of the course topic. All Ways of Knowing courses are thus at least partially interdisciplinary.

Instructors of Ways of Knowing courses will identify with and demonstrate expertise appropriate to the Ways of Knowing category they are teaching.

The following policies govern Ways of Knowing courses:

1. A course may have only one Way of Knowing designation and may not carry any other general education designation.
2. Each Ways of Knowing course will have First Year Composition as a prerequisite or will have First Year Composition as a corequisite, determined by the instructor of the course.
3. Ways of Knowing courses may have no prerequisites other than First Year Composition except that in the case of a planned sequence of courses that satisfy the Ways of Knowing requirement, advanced courses in the sequence may require earlier courses in the sequence as prerequisites.
4. An individual student must satisfy the Ways of Knowing requirement with courses that each have a different course prefix.
5. Any Ways of Knowing course may simultaneously satisfy the Ways of Knowing general education requirement and count toward a Program of Emphasis, a Secondary Emphasis, or a Certificate.
6. Students must complete Ways of Knowing courses in at least two categories by the end of their second year.
7. With the approval of their advisors, students may waive one Ways of Knowing course that corresponds to a way of knowing inherent in their Program of Emphasis. Students whose Program of Emphasis embodies more than one way of knowing must choose which Ways of Knowing course to waive.

A course or planned sequence of courses totaling at least three credits is required in each of the following categories:

1. Creative Expression

Students explore their own potential to produce creative work through the study of the creative process and the practice of creativity and self-expression. Stu-

dents will acquire the requisite skills to produce or perform a work of art and will explore the role of artistic expression in society.

Students will demonstrate their ability to meet the following learning outcomes:

- communicate effectively as appropriate for the audience (e.g., through written, oral, visual, or artistic expression)
- create or perform a work of art
- reflect on art as a vehicle for self-reflection, expression, or as a way of addressing issues that face society

2. Formal Reasoning

Students learn to think with rigor and precision through the study of formal systems and the application of deductive reasoning. Students will develop critical thinking and reasoning skills; use formal systems to identify, analyze, and solve problems; and critique current practices, structures, or claims through the application of formal reasoning.

Students will demonstrate their ability to meet the following learning outcomes:

- articulate the purpose of a formal language and give examples of its utility
- use deductive reasoning correctly
- represent a context in the formal language and manipulate the symbols of the language to analyze or draw conclusions

3. Humanistic Thought

Students learn to engage in theoretical, historical, or critical analysis of texts, art works, cultural artifacts, or cultural practices. Students develop the analytic techniques and interpretive skills to appreciate human experiences and their representations and will be prepared to ask fundamental questions of value, purpose, and meaning.

Students will demonstrate their ability to meet the following learning outcomes:

- communicate effectively through written and oral expression
- use analytic techniques and interpretive skills to appreciate human experiences and their representations

- ask and explore fundamental questions of value, purpose, and meaning

4. Social Inquiry

Students will learn to synthesize and apply qualitative or quantitative research to analyze human behavior, social organization, and the capacities that make society possible. Students will use reason and evidence to recognize and analyze distinctive forms of human behavior and social organization. Students will reflect on how social processes influence understanding of self, interactions with others, or access to power and resources. Students will explore ethical questions raised by social inquiry and consider its role in relevant public practices, policies, or popular media.

Students will demonstrate their ability to meet the following learning outcomes:

- communicate effectively through written and/or oral expression
- synthesize and apply qualitative or quantitative research to analyze human behavior, social organization, or social institutions
- consider the role of social inquiry in relevant public practices, policies, or popular media

5. Scientific Process

Students gain an understanding of what is known or can be known about the world through the study and practice of developing hypotheses, making observations, analyzing quantitative data, and drawing evidence-based conclusions. Students will explore ethical questions raised by scientific inquiry and consider its role in relevant public practices, policies, or popular media.

Students will demonstrate their ability to meet the following learning outcomes:

- manipulate and interpret quantitative information to draw appropriate conclusions
- engage in scientific reasoning through the use of theories, hypotheses, data, and conclusions
- consider the role of science in relevant public practices, policies, or popular media

C. Connections

Taken in the third or fourth year, Connections courses are team-taught by two or more instructors who bring different disciplinary perspectives to address a com-

mon topic. Students will learn to integrate knowledge and skills from multiple disciplinary perspectives to examine an issue through different ways of knowing. The Connections requirement may be met through a single course or through a planned sequence of courses totaling at least three credits.

The following policies govern Connections courses:

1. Students must complete Ways of Knowing courses in at least two categories before taking a Connections course.
2. A Connections course may not carry any other general education designation.
3. Any Connections course may simultaneously satisfy the Connections general education requirement and count toward a Program of Emphasis, a Secondary Emphasis, or a Certificate.

Connections courses are capped at 16 students per instructor.

Students will demonstrate their ability to meet the following learning outcomes:

- communicate effectively through written and oral expression
- address a challenging problem or question
- integrate knowledge and skills from different disciplinary approaches and ways of knowing to address a common topic

D. Self and the World

How should we engage with the world? What responsibilities do we have to our local and global communities? Self and the World courses foster the capacities necessary for wellbeing and responsible citizenship. These capacities include ethical reflection and a sense of purpose, knowledge of how diversity shapes the American experience, and knowledge about global challenges and cultural diversity. Together, these courses encourage us to engage with human diversity, contemplate questions about a just society, and consider the conditions that foster individual and collective wellbeing.

Self and the World course designations can be applied to any course in which one of the major course goals is to address a Self and World category. That is, Self and World courses need not focus exclusively on a given Self and the World category, but must include

this content as one of the major course goals and the focus of a portfolio contribution. Self and the World instructors will demonstrate expertise in their Self and the World category.

Because dialogue, debate, and active learning are central to the liberal arts tradition, Self and the World courses will emphasize seminar formats or active learning or projects involving collaboration with community partners. Self and the World courses are capped at 28 students (lower caps are permissible if requested by instructor and approved by the department chair and the Provost's Office). Self and the World courses should strive to involve students in activities and reciprocal partnerships that extend outside of the classroom as they are designed to promote engagement with the world.

The following policies govern Self and the World courses:

1. A course may have only one Self and the World designation and may not carry any other general education designation.
2. Each Self and the World course, except foreign language courses, will have First Year Composition as a prerequisite or will have First Year Composition as a corequisite, determined by the instructor of the course.
3. Other than foreign language and local engagement courses, Self and the World courses may have no prerequisites other than First Year Composition.

Students will complete each of the following requirements: U.S. Experience, Ethical Responsibility, Global Engagement, and Local Engagement.

1. U.S. Experience

In what ways are U.S. experiences shaped by intersectional characteristics such as race, gender, and socioeconomic status? U.S. Experience courses focus on understanding the current or historical experiences of different groups within the U.S. (identified by, for example, gender, race, ethnicity, sexual orientation, geographic origin, immigration status, age, ability, or religion). Classes will address intersectionality, which refers to how identity-based systems of oppression and privilege overlap, connect, and influence one another. Students will critically examine systems such as racism and colonialism and their use of power, privilege, oppression, marginalization, and structural ineq-

uity and how these systems are challenged by cultural resilience and resistance. Coverage of such issues outside the U.S., such as through comparative methods, is optional.

In order to create a holding environment for difficult conversations and discourse, instructors of these courses are required to be engaged in sustained diversity training.

Students who complete this course will demonstrate their ability to meet the following learning outcomes:

- critically describe and respectfully discuss dimensions of diversity and intersectionality within U.S. social, cultural, political, or historical contexts critically examine lived experiences of participation in, and resistance and resilience to, systems of power, privilege, oppression, marginalization, and structural inequity within the U.S.

2. Ethical Responsibility

What do we owe ourselves, our neighbors, and the world? Ethical Responsibility courses foster students' senses of empathy and social and ethical responsibility. Students will learn to engage in ethical reasoning and take the perspectives of different participants in situations requiring ethical judgment. Students will assess their own ethical values, explore the social contexts of problems, recognize and understand ethical issues in different settings and traditions, and consider ramifications of alternative actions.

The Ethical Responsibility requirement may be met through a single course or through a planned sequence of courses totaling at least three credits.

Students will demonstrate their ability to meet the following learning outcomes:

- communicate effectively as appropriate for the audience (e.g., through written, oral, visual, or artistic expression)
- engage in ethical reasoning using different ethical traditions or perspectives

3. Global Engagement

What challenges do we face as an increasingly diverse and interconnected world? How are our cultural values similar or different? Global Engagement courses help students develop the knowledge and skills they need to engage effectively with and adapt to a changing world.

Students will demonstrate their ability to meet the following learning outcomes:

- articulate and contrast the values, beliefs, or practices of different cultures
- acquire skills (e.g. language, cultural humility) to effectively communicate and interact with other cultures and culturally diverse groups

To fulfill the Global Engagement requirement, students must complete at least two courses totaling at least six credits with a Global Engagement designation. Semester- or year-long study abroad at a Juniata-approved site fulfills this requirement. Courses with a Global Engagement designation may be in one of three categories:

World Language Study. These courses focus on communication in a world language.

Short-Term Study Abroad. These courses focus on a study abroad experience, a portion of which includes a pre-departure component and a portion of which must be completed after study abroad to promote reflection on the learning experience. The study abroad experience must be linked to a Juniata course that together with the travel portion totals at least three credits.

Human Cultures & Challenges. These courses focus on a people and culture outside of the U.S. or a global challenge.

4. Local Engagement

What challenges do we face in our local communities, the places where we live out most of our lives with people of diverse lived experiences and varieties of perspectives? How are our values similar or different from those of our local neighbors? What are our opportunities to be agents of ethical change in meeting the needs of the people we live with in our local communities? Local Engagement experiences help students develop the knowledge and skills they need to engage effectively with the local communities they will inhabit throughout their lives. Local engagement options address specific learning outcomes designed to help students contribute their knowledge and skills to their local communities through meaningful engagement.

Students will demonstrate their ability to meet the following learning outcomes:

- work collaboratively in local cultural settings

- engage in citizenship through respectful interactions
- articulate how local engagement fosters individual and collective wellbeing

To fulfill the Local Engagement requirement, students must complete a Local Engagement course of at least one credit that includes at least 15 hours of approved community engagement. Students must include documentation of the community engagement activity and reflection on the experience in their Juniata Portfolio (Section 3.1.1.III). Because Local Engagement courses require some basic knowledge about community engagement and may require special knowledge or skills, additional prerequisites may be required at the instructor's discretion.

E. General Education for Transfer, Partner Degree, English for Academic Purposes, and Transition Students

The general education graduation requirements and their corresponding portfolio contributions can be waived or adapted by the General Education Committee for transfer students, partner degree students, English for Academic Purposes students, students studying abroad, and those students enrolled during the three-year transition to the new general education curriculum starting in August 2019.

PROGRAM OF EMPHASIS REQUIREMENT

All Juniata students will complete a POE, including a POE Capstone. The Program of Emphasis (POE) is Juniata's unique approach to focused education in an academic area of a student's choosing. The POE is an opportunity for students to explore in depth a particular discipline (through a designated POE) or to craft an individualized plan to study an area (through an individualized POE).

A. Types of Programs of Emphasis

1. Designated

Designated POEs are designed by departments or programs and approved by the Department and Program Committee.

2. Individualized

Every student entering Juniata College has the opportunity to design their program of study. Students will be assisted in this effort by their advisors.

B. Program of Emphasis Requirements

1. Requirements for All Programs of Emphasis

- All POEs must contain at least 36 credit hours and no more than 63 credit hours, except as otherwise authorized by the Faculty Handbook or as authorized by the Department and Program Committee for POEs that require external accreditation.
- With advisors' help, students draft a POE goal statement and identify the appropriate classes.
- All POEs must contain at least 18 credits at the 300- or 400-level.
- No more than two courses in the POE can be research or independent study courses.
- All courses which are required, including prerequisites, must be in the POE.
- All POEs must include depth of knowledge in an academic field.
- All POEs must include analytical and creative thinking, critical questioning, and examination of evidence.
- All POEs must include oral and written communication.
- All POEs must include critical reflection on ethics as appropriate to the discipline.
- All POEs must include information and technological literacy as applied to the discipline.
- All POEs will have a capstone suitable to their academic fields. The POE Capstone is further described below.

2. POE Capstone Requirement for All Programs of Emphasis

- Description of the POE Capstone

Each POE must require a capstone experience to be completed as part of a student's final 30 credits.

The POE capstone represents the summation of a student's Juniata experience as well as a bridge to their future goals. The capstone experience is an expression of the totality of a student's growth, development, and learning as an undergraduate. Capstones include connections from the POE to general education and support some of the Institutional Learning Outcomes.

Research projects, internships, creative works, independent learning, community-engaged learning, and other disciplinary and interdisciplinary experiences are suitable capstones. POEs may offer different capstone experiences for different students.

b. Capstone Portfolio Requirements

All capstone courses require two contributions to the student's Juniata portfolio. One contribution will demonstrate the student's analytic and/or creative thinking and depth of knowledge in an academic field. The second will demonstrate reflection on the totality of their Juniata experience.

c. Capstone Learning Outcomes

Students will demonstrate their ability to meet the following learning outcomes:

- think analytically and/or creatively
- express depth of knowledge in an academic field
- substantively reflect on how their Juniata experience has shaped their own values and future goals
- describe how a holistic and intentional approach to life fosters personal wellbeing

3. Additional Requirements for Designated Programs of Emphasis

A student may follow an already designed program of study selected from a list of approved POEs. Depending on the area of study, some of the programs are made up of fully prescribed courses while others contain a variety of options and electives. No student rationale is required.

These designated POEs will be designed by departments or groups of departments and presented to the Department and Program Committee with supporting rationale. The Department and Program Committee will be responsible for authorization of POEs which become part of the official list kept in the Registrar's Office. The Department and Program Committee will use the following criteria to determine acceptance or rejection of proposed designated POEs:

- a. Coherence of the program
- b. Evidence of study in-depth
- c. If interdisciplinary, relationship of the courses to a specific objective

Within the POE, a minimum of ten courses will be pre-

scribed, either by a department or a group of departments according to one of three rules:

- d. The prescribed courses are specifically named.
- e. The prescribed courses are made up of some which are specifically named and some which are taken from a list.
- f. All prescribed courses are chosen from a list.

4. Additional Requirements for Individualized Programs of Emphasis

Students who do not adopt a Designated Program of Emphasis may design an Individualized Program of Emphasis of their own. This option is for students with particular interests not addressed in designated POEs to make appropriate combinations of courses to precisely address those interests.

Students wishing to pursue this option must:

- a. Select an advisor in each department named in the title of the POE. In the unlikely event that an Individualized POE title named three academic departments, three advisors would be required.
- b. Create, in consultation with the advisor, a collection of courses to constitute the POE. If a course listed in the POE has prerequisites, these prerequisites must also be included in the POE.
- c. Create, in consultation with the advisors, a goal statement and a rationale, which explains how the courses included in the POE enable the student to fulfill the goals for the POE. Ultimately, the acceptance of an individualized POE will depend on the student's ability to justify that a particular combination of courses will allow them to reach the stated academic goals. Special attention should be devoted to the description of those goals and the rationale connecting them to the courses selected.
- d. Solicit from all of their advisors supporting comments attesting to the acceptability of the student's academic goals, the appropriateness of the course selections and rationale, and the overall coherence of the POE. Advisors' signatures without comments will not be sufficient.
- e. Submit the completed POE and the advisors' comments to the Registrar for approval. The Registrar, following policies established by the Department and Program Committee, will evaluate the appropriate-

ness of the POE title, course selections, goal statement, and rationale.

Any POE that does not satisfy the requirements of a Designated POE is by definition an Individualized POE and must therefore be accompanied by a goal statement and rationale. Advisors should pay particular attention to attempts which effectively weaken a Designated POE without contributing sufficient complementary breadth or depth.

All individualized Programs of Emphasis must be approved by the student's faculty advisors and the chair(s) of the appropriate department(s). Approval requires students to write a rationale that describes how the courses they have listed help them reach the academic goals of the individualized POE.

The POE Capstone for those with an individualized POE may be in a related designated POE or may be another appropriate experience in consultation with the student's advisors.

5. Exceptions to POE Credit Requirements

The following are exceptions to the requirement that POEs contain at least 36 credits and no more than 63 credits:

a. Education POEs

Designated POEs in Education may exceed the 63-credit-hour limit if doing so is necessary for Pennsylvania state certification to teach in the public schools; in such cases, Education designated POEs may have no more than the number of credit hours required for certification by the Pennsylvania Department of Education.

b. Foreign Language POEs

A designated or individualized Program of Emphasis in French, German, Russian, or Spanish and Hispanic Cultures may be approved with fewer than 36 credit hours provided that students have placed beyond the WL 110 level by completing the department's designated placement exam. The POE must contain at least 33 credits in the target language beyond SP, GR, FR, or RU 210 and one credit hour of Language in Motion.

c. External Certification

Programs requiring more than 63 credits to obtain external certification as approved by the Department and Program Committee.

C. Program of Emphasis Home Department

A home department or program is any recognized academic unit which sponsors designated and/or individualized POEs. In order to ensure quality and integrity of the POE, the responsibility of the home department is to review the sophomore and final POE submissions. In consultation with advisors, all students must choose a home department or program at the time of the submission of the sophomore POE. The home department is especially important for students with Individualized POEs. It allows these students the flexibility and creativity of self-design while ensuring that they are housed within an academic unit that can provide accountability and support.

D. Program of Emphasis Dates

Sophomores must choose a designated POE or design an individualized POE and submit an appropriate POE statement to the Registrar by the second semester of the sophomore year.

Seniors must submit a faculty approved, final version of the POE to the Registrar on or prior to the preregistration period for the spring semester. No POE changes, other than those caused by scheduling conflicts, will be permitted after this period.

Undergraduate Programs of Study

PROGRAMS OF EMPHASIS (MAJORS)

Accounting

ACCOUNTING CORE

Take the following courses:

EB-100 Introduction to Management

EB-131 Financial Accounting

EB-202 Behavioral Analysis of Organizations

EB-203 Introduction to Business Law

EB-204 Legal Regulation of Business

EB-211 Business Statistics

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

EB-232 Intermediate Accounting I

EB-233 Intermediate Accounting II

EB-236 Managerial Accounting

EB-332 Corporate Taxation

EB-333 Governmental and Nonprofit Accounting

EB-337 Cost Accounting

EB-335 Auditing

EB-342 Management Information Systems

EB-351 Marketing Management

EB-361 Financial Management I

ETHICS REQUIREMENT

Take one of the following courses:

PL-106 Introduction to Ethics

PL-230 Business Ethics

All students must meet the graduation requirement for quantitative literacy. We recommend that students take one of the following two courses. (Neither is to be included in the POE). Please note that most graduate programs in accounting require a college course in calculus.

MA-130 Calculus I

(OR)

EB-210 Quantitative Business Analysis

Note: Students who plan to sit for the CPA exam should be aware that the rules are changing. Most states now require 150 hours of college. Students should keep abreast of changes in PA law, as well as the rules of the state they may be interested in. Most of this information is available on-line. Students can also consult the Digest of State Accountancy Laws and State Board Regulations in Beeghly Library.

In some instances, a student (in consultation with his or her advisor) may substitute a course.

Art History & Museum Studies

MUSEUM STUDIES CORE

Take the following courses:

AH-108 Cross Cultural Art 1

MM-390 Museum Studies

MM-392 Museum Education

MM-394 Curatorial Studies

MM-480 Museum Practicum I

MM-481 Museum Practicum II

ASSOCIATED COURSES

Take the following courses:

AR-104 Design and Color

EN-272 Introduction to Professional Writing

ART HISTORY COURSES

Take the following courses:

AH-113 Cross-Cultural Art 2

AH-492 Senior Thesis in Art History

HS-493 The Historian's Craft

Take five of the following courses:

AH-301 African-American Art: Slavery to Social Justice

AH-302 Reframing American Art

AH-309 Expanding the Renaissance

AH-310 Global Baroque Art & Architecture

AH-311 Art of Ancient Peoples

AH-312 Medieval Art: Really a Dark Age?

AH-316 Art & Revolution: 19th Century Europe

AH-329 Impressionism to Abstract Expressionism

AH-330 Why Is That Art? 1945-Present

INTERNSHIP

Take the following courses for 0-5 credits. Internships can count for credit or as transcript notation. A second internship is strongly recommended.

AH-490 Internship

AH-495 Internship Research Seminar

Biochemistry

CHEMISTRY COURSES

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

CH-210 Chemistry and Biochemistry Seminar

CH-232 Organic Chemistry I

CH-233 Organic Chemistry I Lab

CH-247 Bioanalytical Chemistry

CH-312 Biochemistry

CH-352 Physical Chemistry I

CH-353 Physical Chemistry Laboratory

CH-489 Chemistry & Biochemistry Capstone

BIOLOGY COURSES

Take the following courses:

BI-101 General Biology I

BI-102 General Biology II

BI-316 Molecular & Cellular Biology

MATHEMATICS COURSES

Take one of the following courses:

MA-130 Calculus I

BI-305 Biostatistics

PHYSICS COURSES

Take one of the following combinations:

PC-200 General Physics I

PC-200L General Physics Lab I

(OR)

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

IN-DEPTH COURSES

Complete at least seven elective credits (one of which must have a laboratory component) from the CH - Chemistry, BI - Biology, ESS - Environmental Science/Studies, PC - Physics or MA - Mathematics departments at the 300-level or above.

NOTE: Some elective courses may have a prerequisite outside the core Biochemistry coursework.

Biology

All POEs using the words Biology, Biological Science(s) or Zoology must meet the course requirements of this Biology designated POE.

BIOLOGY CORE

Take the following courses:

BI-101 General Biology I

BI-102 General Biology II

BI-289 Frontiers of Biology

CHEMISTRY CORE

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

CH-232 Organic Chemistry I

CH-233 Organic Chemistry I Lab

PHYSICS CORE

Take 8 credits from the following combinations:

PC-200 General Physics I

PC-200L General Physics Lab I

PC-201 General Physics II

PC-201L General Physics Lab II

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

PC-203 Intro Physics II

PC-203L Intro Physics Lab II

STATISTICS CORE

Take one of the following courses:

MA-130 Calculus I

BI-305 Biostatistics

BI-305CW Biostatistics

UPPER-LEVEL BIOLOGY REQUIREMENT

At least one course must be taken from each core group below. Of these four courses, two must have an associated laboratory. Three credits of research (BI 489) on the same project may count as a core laboratory course. The core classification will be determined by the research advisor. BI-380CW and special topics courses at the 300 level or higher can also count towards the Biology distribution requirements; classification will be determined by the Biology advisor or Chair of the Biology Department.

EVOLUTION/ECOLOGY:

BI-300 General Ecology

BI-301 General Ecology Lab

BI-325 Plant Ecology

BI-326 Plant Ecology Lab

BI-339 Organic Evolution

ESS-325 Conservation Biology

ESS-320 Environmental Monitoring

PY-402 Evolutionary Psychology

PY-401 Comparative Psychology

ESS-328 Limnology

BI-362 Animal Behavior

CELLULAR & MOLECULAR:

BI-460 Genetic Analysis

BI-331 Molecular Microbiology

BI-332 Molecular Microbiology Lab

CH-418 Advanced Biochemistry

BI-316 Molecular & Cellular Biology

BI-318 Developmental Biology

BI-340 Medical Microbiology

CH-312 Biochemistry

ORGANISMAL:

BI-360 Vertebrate Zoology

BI-361 Vertebrate Zoology Lab

BI-350 Invertebrate Zoology

BI-351 Invertebrate Zoology Lab

BI-367 Comparative Anatomy

BI-368 Comp Anatomy Laboratory

BI-327 Botany

BI-333 Plant Diversity

BI-324 Ornithology

BI-323 Mammalogy

BI-370 Herpetology

BIOLOGICAL INTERACTIONS:

BI-310 Physiology

BI-305 Biostatistics

BI-450 Neurobiology

BI-432 Environmental Toxicology

BI-417 Reproductive Biology

BI-334 Immunology

NOTE: The student must have an advisor who is a member of the Biology Department Faculty.

Biology Secondary Education

This POE accurately reflects the requirements for a full Biology degree and also fulfills the requirements of the PA Department of Education for Secondary Certification in Biology.

BIOLOGY CORE

Take the following courses:

BI-101 General Biology I

BI-102 General Biology II

BI-289 Frontiers of Biology

CHEMISTRY CORE

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

CH-232 Organic Chemistry I

CH-233 Organic Chemistry I Lab

STATISTICS CORE

Take one of the following courses:

MA-130 Calculus I

BI-305 Biostatistics

BI-305CW Biostatistics

PHYSICS CORE

Take 8 credits from the following combinations below:

PC-200 General Physics I

PC-200L General Physics Lab I

PC-201 General Physics II

PC-201L General Physics Lab II

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

PC-203 Intro Physics II

PC-203L Intro Physics Lab II

UPPER-LEVEL BIOLOGY

Take 18 credits of 300-400 Biology credits. Approved courses from Chemistry, ESS & Psychology are permitted. *Consult with POE advisor to make certain courses selected are correct.

BI-300 General Ecology

BI-301 General Ecology Lab

BI-325 Plant Ecology

BI-326 Plant Ecology Lab

BI-339 Organic Evolution

ESS-325 Conservation Biology

ESS-320 Environmental Monitoring

PY-402 Evolutionary Psychology

PY-401 Comparative Psychology

ESS-328 Limnology

BI-460 Genetic Analysis

BI-331 Molecular Microbiology

BI-332 Molecular Microbiology Lab

CH-418 Advanced Biochemistry

BI-316 Molecular & Cellular Biology

BI-318 Developmental Biology

BI-340 Medical Microbiology

CH-312 Biochemistry

BI-360 Vertebrate Zoology

BI-361 Vertebrate Zoology Lab

BI-350 Invertebrate Zoology

BI-351 Invertebrate Zoology Lab

BI-367 Comparative Anatomy

BI-368 Comp Anatomy Laboratory

BI-327 Botany

BI-324 Ornithology

BI-323 Mammalogy

BI-370 Herpetology

BI-310 Physiology

BI-305 Biostatistics

BI-399 Special Topics

BI-450 Neurobiology

BI-432 Environmental Toxicology

BI-432CW Environmental Toxicology

BI-417 Reproductive Biology

BI-334 Immunology

EDUCATION CORE

Take the following courses:

ED-110 Foundations of Education

ED-111 Foundations of Education Field Experience

ED-130 Adolescent Development

ED-201 Educational Technology

ED-240 Introduction to Students With Exceptionalities

ED-314 English Language Learners

ED-315 ELL Field Experience

ED-341 Adaptations for Students With Exceptionalities

ED-420 General Secondary Methods

ED-223 Math Methods: Stem I

Take one of the following courses:

ED-419A Secondary Pre-Student Teaching

ED-419B Secondary Pre-Student Teaching

Take the following courses:

ED-450 Student Teaching

ED-451 Student Teaching Seminar

**ED 450 & ED 451 (Student Teaching and Seminar) may be taken only in the FALL semester of the senior year. Secondary Foreign Language Education majors take ED 450 & ED 451 in the SPRING semester. ED 450 requires students' full-time participation and no other courses may be taken during this semester without the education advisor's approval. Students must have reliable transportation.

NOTE: It is imperative that students work closely with their advisors to met all current certification requirements. All students are

required to take six credits of English composition (or equivalent) and literature (or the equivalent) and two college level mathematics courses (or the equivalent) prior to being admitted to a certification program. See Section I of the Education Department Student Handbook for explanation of all certification requirements.

Students must have an advisor who is a member of the Biology Department faculty and Dr. Kathleen Jones in the Education Department.

Business Analytics

Why Study Business Analytics at Juniata?

Data analysis is increasingly being used to make decisions in a variety of organizations and industries. Juniata's business analytics Program of Emphasis (POE) provides a broad-based education in quantitative analysis that includes courses in statistics, computer programming, information technology, applied quantitative methods, communication, and writing. Although this combination of courses requires a lot of you as a student, it also puts you in a small pool of well-qualified applicants who can secure emerging jobs.

A Distinctive Experience

Preparation for Careers in Many Fields: Students can find jobs in many fields doing business analytics, including crunching stats for health organizations, working as buyers for retail companies, and more. The need for graduates with business analytics skillsets is growing.

Communicating About Data: When studying business analytics, you're not only doing quantitative analysis. You'll also learn to communicate clearly with colleagues and decision makers. At Juniata, our business analytics POE requires more writing (and writing across several areas of study) than programs at other colleges, making your degree and skillset from our College more valuable in the market. Add to that courses on public speaking and professional presentations and you'll be well prepared to contribute to leading organizations.

Studying Business Analytics at a Liberal Arts College: Our program is broader in exposing you to data in many fields. Here, you'll take courses not simply in statistics or data analysis and management, but also across a broad range of disciplines so you're prepared for multiple types of data analytic jobs.

After You Graduate

Although the business analytics program at Juniata is relatively new, our graduates have been designing courses of study designed to help them use and communicate data for years. Some have become buyers for retail stores because of their ability to analyze data in a way to better predict demand at stores. Others work to understand the probabilities of events for health care companies. Every

firm or agency will need their own “quant”—or business analytics professional—at some point.

INFORMATION SYSTEMS

Take the following courses:

CS-110 Computer Science I

CS-255U Unix Programming

CS-370 Database Management Systems

IM-241 Info. Discovery and Architecture

BUSINESS ANALYTICS

Take the following courses:

EB-210 Quantitative Business Analysis

EB-341 Product and Operations Management

EB-362 Financial Management II

Take one of the following courses:

EB-463 Financial Markets & Institutions

EB-465 Financial Theory and Analysis

APPLIED STATISTICS

Take the following courses:

ESS-230 Environmetrics

ESS-300 Environmental Problem Solving

MA-325 Statistical Consulting

MATH STATISTICS CORE

Take the following courses:

MA-130 Calculus I

MA-303 Mathematical Modeling

EB-211 Business Statistics

BUSINESS CORE

Take the following courses:

CM-200 Art of Public Speaking

EB-131 Financial Accounting

EB-202 Behavioral Analysis of Organizations

EB-222 Principles of Macroeconomics

EB-236 Managerial Accounting

EB-480 Senior Seminar

Business Information Technology

BUSINESS INFORMATION TECHNOLOGY CORE

Take the following courses:

EB-100 Introduction to Management

EB-105 International Economic Issues

IT-110 Principles of Information Technology

CS-110 Computer Science I

EB-131 Financial Accounting

CM-200 Art of Public Speaking

EB-202 Behavioral Analysis of Organizations

EB-236 Managerial Accounting

IT-307 Project Management

IT-308 Innovations for Industry I

IT-341 Web Design

IT-375 Managing Advanced Technology

EB-480 Senior Seminar

Take one of the following courses:

EB-210 Quantitative Business Analysis

MA-130 Calculus I

Take one of the following courses:

EB-211 Business Statistics

MA-220 Introduction to Probability & Statistics

Take one of the following courses:

CS-370 Database Management Systems

EB-342 Management Information Systems

Take one of the following courses:

EB-203 Introduction to Business Law

EB-204 Legal Regulation of Business

Take one of the following courses:

IT-290 The Metaverse

CM-290 The Metaverse

Take the following course:

EB-359 Advertising & Promo Mgmt

NOTE: Although not required, an internship may be taken.

In some instances, a student (in consultation with his or her advisor) may substitute a course.

Chemistry

INTRODUCTORY COURSES

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

FOUNDATIONAL COURSES

Take the following courses:

CH-222 Inorganic Chemistry

CH-232 Organic Chemistry I

CH-233 Organic Chemistry I Lab

CH-247 Bioanalytical Chemistry

CH-252 Analytical Chemistry

CH-312 Biochemistry

CH-352 Physical Chemistry I

CH-353 Physical Chemistry Laboratory

IN-DEPTH COURSES

Take nine credits from the following courses:

CH-332 Organic Chemistry II

CH-354 Physical Chemistry II

CH-372 Instrumental Methods

CH-401 Advanced Organic Chemistry

CH-406 Advanced Inorganic Chemistry

CH-418 Advanced Biochemistry

CH-399 Special Topics

CH-499 Chemistry Special Topics

**Requirements for ACS-certified degree: Take one additional in-depth course

and a minimum of 400 total laboratory hours.**

ADVANCED LABORATORY EXPERIENCE

Take the following course:

CH-385 Advanced Chemistry Lab

OTHER CHEMISTRY COURSES

Take the following courses:

CH-210 Chemistry and Biochemistry Seminar

CH-489 Chemistry & Biochemistry Capstone

SUPPORT COURSES

Take the following course:

MA-130 Calculus I

Take one of the following combinations:

PC-200 General Physics I

PC-200L General Physics Lab I

(OR)

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

**Requirements for ACS-Certified Degree

All Intro Courses (8 Credits)

All Foundational Courses with Lab (20 Credits)

4 In-Depth Courses (at least 12 Credits)

2 Semesters of Calculus (MA-130, MA-230; 8 Credits)

2 Semesters of Physics with Lab (PC-200/202, PC-201/203, associated labs; 8 Credits)

Advanced Lab (2 Credits)

Other CH Courses (CH-210, Capstone; 4 Credits)

at least 400 hours of lab

Chemistry Secondary Education

CHEMISTRY CORE

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

CH-210 Chemistry and Biochemistry Seminar

CH-222 Inorganic Chemistry

CH-232 Organic Chemistry I

CH-233 Organic Chemistry I Lab

CH-252 Analytical Chemistry

CH-332 Organic Chemistry II

CH-312 Biochemistry

CH-352 Physical Chemistry I

CH-354 Physical Chemistry II

CH-353 Physical Chemistry Laboratory

CH-372 Instrumental Methods

CH-385 Advanced Chemistry Lab

MATHEMATICS REQUIREMENT

Take the following courses:

MA-130 Calculus I

MA-230 Calculus II

PHYSICS REQUIREMENT

Take the following courses:

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

PC-203 Intro Physics II

PC-203L Intro Physics Lab II

EDUCATION CORE

Take the following courses:

ED-110 Foundations of Education

ED-111 Foundations of Education Field Experience

ED-130 Adolescent Development

ED-201 Educational Technology

ED-240 Introduction to Students With Exceptionalities

ED-314 English Language Learners

ED-315 ELL Field Experience

ED-341 Adaptations for Students With Exceptionalities

ED-419A Secondary Pre-Student Teaching

ED-420 General Secondary Methods

ED-423 Secondary Education Field Trip

ED-450 Student Teaching

ED-451 Student Teaching Seminar

**ED 450 & 451 (Student Teaching and Seminar) may be taken only in the FALL semester of the senior year. ED 450 requires students' full-time participation and no other courses may be taken during this semester without the education advisor's approval. Students must have reliable transportation.

NOTE: It is imperative that students work closely with their advisors to meet all current certification requirements. All students are required to take six credits of English composition (or equivalent) and literature (or the equivalent) and two college level mathematics courses (or the equivalent) prior to being admitted to a certification program. See Section I of the Education Department Student Handbook for explanation of all certification requirements.

Other requirements: Students should see Dr. Jones in the education department as soon as possible for information on requirements other than coursework that must be met for certification. Your chemistry advisor and Dr. Jones in the education department main-

tain the closest watch on the Pennsylvania requirements for teacher certification, and are thus the most appropriate choices to serve as the two academic advisors for students pursuing certification to teach chemistry in secondary school.

NOTE: Students with scheduling difficulties (or who wish to spend the junior year abroad) might wish to consider postponing the professional semester (usually the first semester of the senior year) until after graduation. (Juniata graduates are charged only half tuition).

Communication and Conflict Resolution

REQUIRED CORE COURSES

Take the following courses:

CM-130 Introduction to Human Communication

PACS-105 Introduction to Conflict Resolution

PACS-108 Mediation

PACS-110 Introduction to Peace & Conflict Studies

PACS-205 Conflict Intervention

CM-230 Interpersonal Communication

ADVANCED CORE

Upper-Level Core:

Take five of the following courses:

PACS-305 Gender and Conflict

PACS-308 Nonviolence: Theory & Practice

PACS-405 Conflict Transformation

CM-340 Intercultural Communication

CM-365 Organizational Communication

CM-400B Storytelling

CM-405A Women, Work & Identity

CM-497 Honors Seminar

CM-498 Honors Research

PACS-455 PACS Honors Thesis I

Communication Media Core:

Take one of the following courses:

CM-420A Hollywood Films

CM-420B Media Violence

CM-420C Digital Media Studies

CM-420D Truth and Lying

CM-132 Message Analysis

CM-133 Mass Media and Society

SKILLS CORE

Take two of the following courses:

CM-200 Art of Public Speaking

CM-230 Interpersonal Communication

EN-311 Professional News and Feature Writing

EN-315 Technical Writing

METHODS CORE

Take one of the following courses:

CM-320

CM-330 Media Analysis

INTERNSHIP CORE

Complete a Communication (CM-490/495) or PACS (PACS-490/495) Internship.

CM-490 Communication Internship

CM-495 Communication Internship Research

PACS-490 Peace & Conflict Studies Internship

PACS-495 PACS Intern.Res.Sem.

In addition, we recommend that students choose a secondary emphasis developing greater depth in a particular area of interest. For example, students interested in group dynamics would focus in sociology or social work, students with an interest in individual behaviors and choices would add psychology, an interest in political change would suggest politics courses.

Computer Science

Learn the Skills You Need ...

Algorithm design and data management skills

Problem analysis and a systematic approach to problem solving

The operation and organization of computer hardware and software

Essential tools for the analysis and evaluation of algorithms, data structures, languages, and systems

... For the Future You Want

Graduate studies

Scientific applications

Software design

Graphics and games programming

COMPUTER SCIENCE CORE COURSES

Take the following courses:

CS-110 Computer Science I

CS-220 Computer Organization

CS-240 Computer Science II

CS-255C C++ Programming

CS-255U Unix Programming

CS-300 Software Engineering

CS-315 Algorithms and Analysis

CS-305 Software Models

CS-320 Operating Systems

CS-362 Languages and Translation

CS-370 Database Management Systems

CS-480 Computer Science Seminar I

IT-210 Information Technology Systems

IT-307 Project Management

IT-308 Innovations for Industry I

MA-116 Discrete Structures

MA-130 Calculus I

MA-220 Introduction to Probability & Statistics

ELECTIVE COURSES

Complete six credits from the following courses:

MA-210 Foundations of Mathematics

MA-233 Integrals Series & Differential Equations

CS-255B COBOL Programming

CS-255F FORTRAN Programming

CS-255P Perl Programming

CS-255R Ruby Programming

IT-325 Network Design & Management.

CS-330 Computer Graphics

CS-340 Numerical Analysis

CS-485 Computer Science Research

PC-209 Electronics

IT-110 Principles of Information Technology

IT-111 Principles of IT Science

IT-260 Human Computer Interaction

IT-341 Web Design

IT-342 Web Programming

IM-242 Info Visualization

Rationale

A program in computer science requires a broad range of skills, some as general as problem analysis and problem solving, others more technical, such as programming and data management. The core of the computer science POE is designed to promote the development of these skills. In addition to emphasizing mathematical techniques appropriate to "number crunching" the mathematics courses, also encourage a systematic approach to problem solving and become essential tools for the analysis and evaluation of algorithms, data structures, languages, and systems. The lower division course reinforce problem solving while also developing algorithm design and data management skills and providing knowledge of the operation and organization of computer hardware and software.

With this foundation, one can then pursue greater specialization, tailoring the program toward scientific applications, software design, systems analysis, or preparation for graduate studies. The requisite skills and relevant courses for these options vary somewhat and should be chosen in consultation with an appropriate advisor.

Criminal Justice

REQUIRED COURSES

Take the following courses:

SO-101 Introduction to Sociology

PS-101 Introduction to American Government

PL-106 Introduction to Ethics

SO-260 Introduction to Criminal Justice

SO-302 Social Deviance and Criminology

METHODS REQUIREMENT

Complete one sequence below:

Social Work Research Sequence:

SW-214 Integrated Research Methods & Stats I

SW-215 Integrated Research Methods & Stats II

Psychology Research Sequence:

PY-360 Research Methods and Statistics for Psychology I

PY-361 Research Methods & Stats Psychology II

CAPSTONE REQUIREMENT

SO-401 Sociology Senior Seminar

PY-415 Capstone in Psychology

EXPERIENTIAL REQUIREMENT

Take 3-6 credits of experiential courses (Inside-Out, Mock Trial, approved internship, mentored research, and/or community-engaged learning must be approved by department chair).

PS-190A Mock Trial

PS-190B Mock Trial

PS-490 Legal & Public Affairs Internship

PS-495 Politics Res/Seminar

PY-490 Psychology Internship

PY-495 Psychology Int. Sem.

SO-492 Sociology Internship

SW-330 Social Work Practice: Individual, Family & Small Groups

Laboratory

SW-331 Social Work Practice: Individual, Family & Small Groups

ELECTIVES

Take 15-18 credits from the following courses:

EN-239 Bloody Murder

HS-400 Crimes Against Humanity

PACS-105 Introduction to Conflict Resolution

PACS-110 Introduction to Peace & Conflict Studies

PS-218 Public Policy & Admin.

PS-312 Constitutional Interpretation: Civil Rights

PS-334 Human Rights

PY-203 Abnormal Psychology

PY-205 Social Psychology

PY-410 Aggression and Prejudice

SO-203 Minority Experiences

SO-244 Drugs and Society

SO-320 Wealth, Power, & Society

SO-362 Juvenile Justice

Data Science

DATA SCIENCE CORE

Take the following courses:

CS-110 Computer Science I

DS-110 Intro to Data Science

MA-130 Calculus I

MA-116 Discrete Structures

MA-160 Linear Algebra

STATISTICS CORE

Take one of the following courses:

MA-220 Introduction to Probability & Statistics

MA-205 Elementary Statistics

EB-211 Business Statistics

BI-305 Biostatistics

ESS-230 Environmetrics

ESS-309 Econometrics

PY-361 Research Methods & Stats Psychology II

SW-215 Integrated Research Methods & Stats II

SECOND-LEVEL

Take the following courses:

CS-370 Database Management Systems

DS-210 Data Acquisition

DS-352 Machine Learning

IM-242 Info Visualization

MA-321 Multivariate Statistics

DS-375 Big Data

CAPSTONE

Take the following course:

MA-325 Statistical Consulting

COGNATE AREA

Take 12 credits, 3 of which must be at the 300 level or higher. Cognate area should be a coherent set of courses outside the areas of Data Science, Math and Computer Science.

What should you expect?

Students in the data science program will be prepared for jobs dealing with data in whatever fields they are interested. With an emphasis on practical skills for the organization, analysis, visualization, and presentation of actionable information gathered from widely varied data sources, data science will work with students on real world data. Students will take a variety of courses in data science, computer science, statistics, and in a cognate area of their choice.

A Sampling of Courses

Machine Learning

Big Data

Intro to Data Science

Discrete Structures

Calculus I

Linear Algebra

Intro to Probability and Statistics

Multivariate Stats

Comp Science I

Database Management Systems

Information Visualization

Data Acquisition

DS Consulting (writing)

Statistical Consulting

12 credits in a cognate area: Bio

Psychology

Environmental

Science

Business

As part of the POE in data science you can participate in internships at locations such as Mutual Benefit Corporation or Juniata's Office of Advancement.

What your four years in the Data Science Program at Juniata College might look like:

First Year

Take Introduction to Data Science (DS 110), Discrete Structures (MA 116), Computer Science 1 (CS 110), and Calculus (MA 130). Begin exploring other fields such as business, biology, environmental science, psychology, or history as a possible area to apply your data analysis skills, a cognate area.

Sophomore Year

Take Data Acquisition (DS 210), Linear Algebra (MA 160), and Introduction to Probability and Statistics (MA 220). Start taking courses in chosen cognate area.

Junior Year

Take upper level courses in data science, computer science, and statistics. Continue taking cognate area courses. Consider studying abroad at the Mathematical Sciences Semesters at Guanajuato,

Mexico. Look into internships Participate in DataFest.

Senior Year

Take Data Science Consulting (DS 325) to have capstone in Data Science of a real life data analysis project. Continue taking upper levels and finish your cognate area courses.

Complete an internship. Participate in Data Fest.

Earth and Space Secondary Education

REQUIRED CORE

Take the following courses:

GL-100A Environmental Geology

PC-120 Astronomy

GL-204 History of Earth

GL-210 Minerals

GL-240 Geological Field Methods I

GL-300 Petrography

GL-310 Structural Geology

GL-389 Geology Professional Seminar

MA-130 Calculus I

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

ADDITIONAL CORE

Complete one of the following groups below:

GROUP 1

GL-126 Environmental Geochemistry

GROUP 2

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

EDUCATION CORE

Take the following courses:

ED-110 Foundations of Education

ED-111 Foundations of Education Field Experience

ED-130 Adolescent Development

ED-201 Educational Technology

ED-240 Introduction to Students With Exceptionalities

ED-314 English Language Learners

ED-315 ELL Field Experience

ED-341 Adaptations for Students With Exceptionalities

ED-420 General Secondary Methods

ED-423 Secondary Education Field Trip

ED-450 Student Teaching

ED-451 Student Teaching Seminar

Take one of the following courses:

ED-419A Secondary Pre-Student Teaching

ED-419B Secondary Pre-Student Teaching

There are field experiences in these courses. Students should take only one of these courses per semester. Allow a two-hour block of time for scheduled field experience twice a week.

ED 450 & 451 (Student Teaching and Seminar) may be taken only in the FALL semester of the senior year. Secondary Foreign Language Education majors take ED 450 & 451 in the SPRING semester. ED 450 requires students' full-time participation and no other courses may be taken during this semester without the education advisors' approval. Students must have reliable transportation.

NOTE: It is imperative that students work closely with their advisors to meet all current certification requirements. All students are required to take six credits of English composition (or equivalent) and literature (or the equivalent) and two college level mathematics courses (or the equivalent) prior to being admitted to a certification program. See Section I of the Education Department Student Handbook for explanation of all certification requirements.

Economics

ECONOMICS CORE

Take the following courses:

EB-100 Introduction to Management

EB-102 Introduction to Entrepreneurship

EB-131 Financial Accounting

EB-202 Behavioral Analysis of Organizations

EB-236 Managerial Accounting

MA-130 Calculus I

MA-160 Linear Algebra

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

EB-320 Intermediate Microeconomics

EB-321 Intermediate Macroeconomics

EB-381 International Political Economy

EB-480 Senior Seminar

ESS-230 Environmetrics

Take one of the following courses:

EB-211 Business Statistics

MA-220 Introduction to Probability & Statistics

ELECTIVES

Take one of the following courses:

MA-210 Foundations of Mathematics

MA-230 Calculus II

MA-235 Calculus III

MA-303 Mathematical Modeling

MA-370 Real Analysis

ESS-305 Environmental Economics

EB-463 Financial Markets & Institutions

EB-465 Financial Theory and Analysis

UPPER LEVEL ELECTIVES

Take three upper level courses from the following:

MA-303 Mathematical Modeling

ESS-305 Environmental Economics

EB-463 Financial Markets & Institutions

EB-465 Financial Theory and Analysis

MA-370 Real Analysis

Education PreK-4th Grade

CORE COURSES

Take the following courses:

ED-110 Foundations of Education

ED-111 Foundations of Education Field Experience

ED-120 Child Development

ED-121 Child Development Lab

ED-201 Educational Technology

ED-240 Introduction to Students With Exceptionalities

ED-312 Language and the Brain

ED-313 Language and Brain Lab

ED-314 English Language Learners

ED-315 ELL Field Experience

ED-342 Assessment Learners

ED-343 Differentiated Instruction

ED-350 Science Methods: Stem III

ED-401 Junior Field Experience

ED-403 Math Methods: PreK-6

ED-410 Families and Teachers Education

ED-411 Reading Difficulties

ED-412 Reading Difficulties Lab

ED-430 Language and Literacy

ED-432 Social Studies Methods

ED-433 Pre-Student Teaching Seminar

ED-450 Student Teaching

ED-451 Student Teaching Seminar

MATH REQUIREMENT

Take 6 credits from the MA-Mathematics Department.

ENGLISH REQUIREMENT

English Composition:

Take one of the following courses:

FYC-101 First Year Composition

English Literature:

Take 3 credits from the following courses:

EN-120 Forms of Literature

EN-122 Interpreting Pop Literature

EN-162 Women and Literature

EN-170 World Literatures

EN-188 Bad Literature

EN-207 Heaven or Hell on Earth

EN-212 Sports Literature

EN-213 Zombie Nation

EN-215 Boys Will Be Boys

EN-217 Disability in Fiction

EN-236 Dirty Books

EN-237 Constructing Identities

EN-239 Bloody Murder

EN-250 African American Literature

EN-251 Slave Narratives

EN-262 Unhappily Ever After

EN-301 Young Adult Literature

EN-302 The Literature of Social Protest

EN-307 Mythology in Film

EN-312 Literature of Revenge

EN-313 Firing the Canon

EN-341 Shakespearean Drama

EN-385 Queer Literature

EN-388 Heroes and Villains

EN-392 Crossing the Border

NOTE: Students in this program must have an advisor in the Education Department. Teacher certification programs are subject to changes in state and federal regulations. Formal acceptance to a certification program may include requirements over and above those of the college. Title II of the Higher Education Act enacted in 1998 requires that institutions publicize the pass-rate of PRAXIS tests taken by students who complete a certification program. See the Education Department's Student Handbook and website www.juniata.edu/education for specific information and current certification requirements. Title II information is available from the Education Department Certification Officer or the Dean of Enrollment.

NOTE: It is imperative that students work closely with their advisors to meet all current certification requirements. All students are required to take six credits of English composition (or equivalent) and literature (or the equivalent) and two college level mathematics courses (or the equivalent) prior to being admitted to a certification program. See Section I of the Education Department Student Handbook for explanation of all certification requirements.

Education PreK-4th Grade and PreK-8th Grade Special Education

CORE COURSES

Take the following courses:

ED-110 Foundations of Education

ED-111 Foundations of Education Field Experience

ED-120 Child Development

ED-121 Child Development Lab

ED-130 Adolescent Development

ED-201 Educational Technology

ED-240 Introduction to Students With Exceptionalities

ED-300S Sign Language I

ED-312 Language and the Brain

ED-313 Language and Brain Lab

ED-314 English Language Learners

ED-315 ELL Field Experience

ED-342 Assessment Learners

ED-343 Differentiated Instruction

ED-350 Science Methods: Stem III

ED-401 Junior Field Experience

ED-403 Math Methods: PreK-6

ED-410 Families and Teachers Education

ED-411 Reading Difficulties

ED-412 Reading Difficulties Lab

ED-430 Language and Literacy

ED-432 Social Studies Methods

ED-433 Pre-Student Teaching Seminar

ED-440 High Incidence Disabilities

ED-441 Low Incidence Disabilities

ED-442 Social, Emotional, Behavior

ED-450 Student Teaching

ED-451 Student Teaching Seminar

MATH REQUIREMENT

Take 6 credits from the MA-Mathematics Department.

ENGLISH REQUIREMENT

English Composition:

Take one of the following courses:

FYC-101 First Year Composition

English Literature:

Take 3 credits from the following courses:

EN-120 Forms of Literature

EN-122 Interpreting Pop Literature

EN-162 Women and Literature

EN-170 World Literatures

EN-188 Bad Literature

EN-207 Heaven or Hell on Earth

EN-212 Sports Literature

EN-213 Zombie Nation

EN-215 Boys Will Be Boys

EN-217 Disability in Fiction

EN-236 Dirty Books

EN-237 Constructing Identities

EN-239 Bloody Murder

EN-250 African American Literature

EN-251 Slave Narratives

EN-262 Unhappily Ever After

EN-301 Young Adult Literature

EN-302 The Literature of Social Protest

EN-307 Mythology in Film

EN-312 Literature of Revenge

EN-313 Firing the Canon

EN-341 Shakespearean Drama

EN-385 Queer Literature

EN-388 Heroes and Villains

EN-392 Crossing the Border

Note: Teacher certification programs are subject to changes in state and federal regulations. Formal acceptance into, retention in, and completion of a certification program may include requirements over and above those of the college. See the Education Department's Student Handbook for additional information on certification.

Engineering Physics

This Program of Emphasis includes two options:

OPTION 1: 3-2 engineering (two degrees) in cooperation with one of our four affiliated engineering universities.

OPTION 2: 4-year, engineering-oriented Juniata College degree.

These two options are structured to allow a student to aim toward engineering school either by participating in our 3-2 engineering programs or by completing a four-year program at Juniata. Option 2 would further provide a technical background for a person who wishes to seek general employment in a technical industrial situation which does not require specific engineering training. The mathematics sequence in these three options offers the necessary problem-solving techniques and discipline required for the upper-level physics courses at Juniata and the upper-level engineering courses

at an engineering school. The first two years of physics consists of a broad introduction to the field, providing basic knowledge and initial analytical skill development. Substantial laboratory work is included in these options to insure contact with concrete phenomena.

The 3-2 option is structured to prepare a student to go to engineering school in our 3-2 program. The physics, mathematics, chemistry and computer science consists of a broad introduction to the field, providing basic knowledge and initial analytical skill development for the engineering profession. Generally, this POE option is designed to meet the entrance requirements of the engineering schools with which we are affiliated. Since these requirements vary somewhat from school to school, advice from the Engineering Advisor is essential in the planning process. The following program is designed to help the student meet the requirements for the Pennsylvania State University (University Park Campus). If students meet these requirements, we find that they also are prepared for our other affiliated engineering schools, (Washington University, Columbia University). Advice from the engineering advisor will help fine tune each student's POE. The student must also not forget that there are minimum GPA requirements for continuation at our cooperating engineering schools. Columbia University requires a GPA of 3.3 and all required courses must have a grade of a B or higher. Washington University in ST. Louis requires a minimum GPA of 3.25 overall and also in the science and mathematics courses. Many of Penn State's engineering programs also have "Enrollment control" which mean they do not participate in the 3-2 program at the current time. At present time, the following Penn State departments are under enrollment control: Aerospace Engineering, Bioengineering, Computer Engineering, Industrial Engineering, and Mechanical Engineering. None of our other 3-2 cooperating universities have enrollment controls in place. (Penn State also has a few programs, including Agricultural and Biological Engineering and majors in the College of Earth and Mineral Sciences, that only require a grade point average of 2.75. In addition, Penn State Harrisburg also offers some engineering programs. Although we do not have a formal 3-2 program specifically with PSU-Harrisburg, students have completed a 3-2 program with them in the past and arrangements may be made on an individual basis.)

Students who wish to obtain a further education in pure physics should fulfill the requirements of the normal physics program of emphasis rather than this one. A 3-2 engineering student who decides to extend Juniata's education to four years, but who intends to go to an engineering school for either a BS or a graduate degree in engineering, may find this program to be useful.

Please note that this POE is not designed for those interested in Chemical Engineering. Please speak both with the Engineering Advisor in the physics department and with a chemistry advisor if you are interested in Chemical Engineering.

MATHEMATICS CORE

Take the following courses:

MA-130 Calculus I

MA-160 Linear Algebra

MA-230 Calculus II

MA-235 Calculus III

MA-335 Differential Equations

COMPUTER SCIENCE CORE

Take the following course:

CS-110 Computer Science I

Take one of the following courses:

CS-255F FORTRAN Programming

CS-255C C++ Programming

CHEMISTRY CORE

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

PHYSICS CORE

Take the following courses:

PC-189 Physics Seminar I

PC-203 Intro Physics II

PC-203L Intro Physics Lab II

PC-289 Physics Seminar II

PC-300 Modern Physics Lab

PC-301 Theoretical Modern Physics

PC-320 Engineering Mechanics I: Statics

PC-321 Engineering Mechanics II: Dynamics

PC-389 Physics Seminar III

Complete one of the groups below:

GROUP 1

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

GROUP 2

PC-204 University Physics

ADDITIONAL PHYSICS CORE

Complete both groups below:

GROUP 1

PC-307 Advanced Physics Lab

PC-489 Physics Seminar IV

GROUP 2

One additional 300/400 level Physics, Mathematics or Chemistry course at that 300/400 level.

****Additional courses for Option 1: 3-2 Engineering**

The following are examples of courses that may be taken for specific kinds of engineering:

PC-209 Electronics

GL-100 Intro to Physical Geology

CH-232 Organic Chemistry I

In addition, students should add to the POE a course in speech, a course in technical writing, and a course in economics.

****Additional courses for Option 2: Four-year Engineering Physics**

The following are examples of courses that may be taken for four-year Engineering Physics:

PC-307 Advanced Physics Lab

PC-489 Physics Seminar IV

NOTE: At least one additional 300 or 400 level Physics, Mathematics, or Chemistry course that carries at least three credits.

English

CORE REQUIREMENTS

Take the following courses:

EN-120 Forms of Literature

EN-122 Interpreting Pop Literature

EN-204 English Colloquium

ENGLISH INTERNSHIP

Complete one of the following groups below: (NOTE: Instructor permission is required)

GROUP 1

EN-490 English Internship

EN-495 English Internship Research

GROUP 2

EN-496 Senior Research Capstone

EN-493 English Research Seminar

SURVEY COURSES

Take five of the following courses:

EN-170 World Literatures

EN-200 History of the Language

EN-215 Boys Will Be Boys

EN-250 African American Literature

EN-258 Funny Pages

EN-262 Unhappily Ever After

FORMS AND THEORY

Take three of the following courses:

EN-237 Constructing Identities

EN-300 Modern Theories of Grammar

EN-307 Mythology in Film

EN-341 Shakespearean Drama

EN-370 The Contemporary Novel

EN-372 Contemporary Poetry

WRITING

Take one of the following courses:

EN-272 Introduction to Professional Writing

EN-273 Visual Literacy
 EN-303 Poetry Writing
 EN-305 Fiction Writing
 EN-306 Creative Nonfiction Writing
 EN-311 Professional News and Feature Writing
 EN-315 Technical Writing
 EN-376 Writing Across Media
 EN-378 Video Production Writing
 EN-379 Professional Editing

GENRE COURSES

Take five of the following courses:

EN-162 Women and Literature
 EN-163 Science Fiction
 EN-188 Bad Literature
 EN-207 Heaven or Hell on Earth
 EN-212 Sports Literature
 EN-213 Zombie Nation
 EN-236 Dirty Books
 EN-251 Slave Narratives
 EN-255 Passing Narratives
 EN-274 Beyond Grey's Anatomy
 EN-292 Crossing the Border
 EN-301 Young Adult Literature
 EN-312 Literature of Revenge
 EN-385 Queer Literature
 EN-388 Heroes and Villains
 EN-392 Crossing the Border

English Secondary Education

ENGLISH CORE

Core Courses:

Take the following courses:

EN-120 Forms of Literature
 EN-122 Interpreting Pop Literature
 EN-170 World Literatures
 EN-200 History of the Language
 EN-204 English Colloquium
 EN-341 Shakespearean Drama

American Literature Courses:

Take one of the following courses:

EN-238 Unnatural Acts
 EN-239 Bloody Murder
 EN-250 African American Literature
 EN-251 Slave Narratives
 EN-253 Literature of the Jazz Age

British Literature Courses:

Take one of the following courses:

EN-258 Funny Pages
 EN-262 Unhappily Ever After

Writing Courses:

Take one of the following courses:

EN-272 Introduction to Professional Writing
 EN-273 Visual Literacy
 EN-305 Fiction Writing
 EN-306 Creative Nonfiction Writing
 EN-311 Professional News and Feature Writing
 EN-315 Technical Writing
 EN-378 Video Production Writing
 EN-379 Professional Editing

Literature Courses:

Take two of the following courses:

EN-162 Women and Literature

EN-188 Bad Literature

EN-207 Heaven or Hell on Earth

EN-212 Sports Literature

EN-213 Zombie Nation

EN-215 Boys Will Be Boys

EN-217 Disability in Fiction

EN-236 Dirty Books

EN-237 Constructing Identities

EN-301 Young Adult Literature

EN-302 The Literature of Social Protest

EN-307 Mythology in Film

EN-312 Literature of Revenge

EN-313 Firing the Canon

EN-385 Queer Literature

EN-388 Heroes and Villains

EN-392 Crossing the Border

OTHER COURSES

Complete each category below:

Communication Courses:

CM-200 Art of Public Speaking

Math Courses:

Complete six credits from the MA - Mathematics Department.

EDUCATION CORE

Take the following courses:

ED-110 Foundations of Education

ED-111 Foundations of Education Field Experience

ED-130 Adolescent Development

ED-201 Educational Technology

ED-240 Introduction to Students With Exceptionalities

ED-314 English Language Learners

ED-315 ELL Field Experience

ED-341 Adaptations for Students With Exceptionalities

ED-419A Secondary Pre-Student Teaching

ED-420 General Secondary Methods

ED-450 Student Teaching

ED-450 may be taken only in the FALL semester of the senior year. ED 450 requires students' full-time participation and no other courses may be taken during this semester without the education advisors' approval. Students must have reliable transportation.

ED-451 Student Teaching Seminar

ED-451 may be taken only in the FALL semester of the senior year.

Entrepreneurship

ENTREPRENEURSHIP CORE

Take the following courses:

EB-100 Introduction to Management

EB-102 Introduction to Entrepreneurship

EB-105 International Economic Issues

IT-110 Principles of Information Technology

EB-131 Financial Accounting

EB-202 Behavioral Analysis of Organizations

EB-207 New Venture Creation

EB-236 Managerial Accounting

EB-307 New Venture Start-Ups

EB-341 Product and Operations Management

EB-351 Marketing Management

EB-361 Financial Management I

EB-371 Human Resource Management.

EB-407 Entrepreneurship

EB-480 Senior Seminar

Take one of the following courses:

EB-210 Quantitative Business Analysis

MA-130 Calculus I

Take one of the following courses:

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

Take the following course:

EB-359 Advertising & Promo Mgmt

The option of Junior Year or Semester Abroad is encouraged. Foreign exchange partner institutions are likely to offer equivalent courses for EB-105, EB-210, EB-211, EB-222, EB-223, EB-341, EB-351, EB-361 and EB-371.

Internships are also available and should be based in an entrepreneurial organization.

EB-001 Non-Credit Business Internship

EB-490 Business Internship

EB-495 Business Internship Seminar

In some instances, a student (in consultation with his or her advisor) may substitute a course.

Environmental Economics

ESS CORE COURSES

Take the following courses:

ESS-100 Environmental Systems I

GL-100 Intro to Physical Geology

ESS-305 Environmental Economics

ESS-230 Environmetrics

ESS-310 Water Resources I

ESS-337 Environmental Law

Take one of the following courses:

ESS-224 Wildlife Mgmt

ESS-324 Natural Resource Management

ECONOMICS COURSES

Take the following courses:

EB-105 International Economic Issues

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

EB-381 International Political Economy

Take one of the following courses:

EB-463 Financial Markets & Institutions

EB-465 Financial Theory and Analysis

POLICY AND DECISION SCIENCE

Take the following courses:

PS-101 Introduction to American Government

PY-101 Introduction to Psychology

PY-304 Cognitive Psychology

PY-403 Judgment & Decision Making

MATH CORE

Take three of the following courses:

MA-130 Calculus I

MA-160 Linear Algebra

MA-303 Mathematical Modeling

ESS-309 Econometrics

Environmental Engineering

INTRODUCTORY COURSES

Take the following courses:

ESS-100 Environmental Systems I

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

BI-101 General Biology I

GL-100A Environmental Geology

Take one of the following courses: (GL-126 or CH-142/CH-143)

GL-126 Environmental Geochemistry

CH-142 Integrated Chemistry Principles I

(AND)

CH-143 Integrated Chem Principles I Lab

MATHEMATICS COURSES

Take the following courses:

MA-130 Calculus I

MA-230 Calculus II

MA-235 Calculus III

MA-335 Differential Equations

REQUIRED ENGINEERING COURSES

Take one of the following courses:

ESS-230 Environmetrics

MA-205 Elementary Statistics

BI-305 Biostatistics

DS-110 Intro to Data Science

Take the following courses:

ESS-262 Fluid Mechanics

ESS-301 Environmental Methods

GL-305 Hydrogeology

ESS-305 Environmental Economics

ESS-310 Water Resources I

ESS-315 Environmental Chemistry

ESS-320 Environmental Monitoring

ESS-330 Geographical Information Systems

ESS-337 Environmental Law

ESS-410 Water Resources II

ESS-415 Fate & Transport of Pollutants

UPPER-LEVEL ELECTIVE

To be determined

CAPSTONE

ESS-401 Senior Capstone II

Environmental Geology

REQUIRED COURSES

Take the following courses:

ESS-100 Environmental Systems I

ESS-110 Environmental Systems II

GL-100A Environmental Geology

GL-204 History of Earth

GL-310 Structural Geology

GL-389 Geology Professional Seminar

GL-240 Geological Field Methods I

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

Complete one of the following groups:

GROUP 1:

GL-126 Environmental Geochemistry

GROUP 2:

CH-145 Integrated Chemistry Principles II Lab

CH-144 Integrated Chemistry Principles II

SOCIETAL IMPACTS REQUIREMENT

Take two of the following courses:

GL-111 Oceanography

GL-172 Geology of National Parks

ESS-337 Environmental Law

IC-231 Geoarchaeology

IC-214 Global Climate Change

QUANTITATIVE REQUIREMENT

Take one of the following courses:

BI-305 Biostatistics

ESS-230 Environmetrics

MA-130 Calculus I

MA-220 Introduction to Probability & Statistics

DEPTH REQUIREMENT

Take five of the following courses:

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

PC-211 Environmental Physics

PC-211L Environmental Physics Lab

GL-210 Minerals

GL-304 Paleobiology of Invertebrates

GL-305 Hydrogeology

ESS-301 Environmental Methods

ESS-310 Water Resources I

ESS-324 Natural Resource Management

ESS-330 Geographical Information Systems

GL-401 Sedimentology

GL-405 Principles of Stratigraphy

GL-450 Geological Research

CAPSTONE EXPERIENCE

Take one of the following courses:

GL-405 Principles of Stratigraphy

GL-440 Geological Field Methods II

Environmental Science

ESS CORE

Take the following courses:

ESS-100 Environmental Systems I

ESS-110 Environmental Systems II

ESS-310 Water Resources I

Take one of the following courses:

ESS-301 Environmental Methods

ESS-410 Water Resources II

Take one of the following courses:

ESS-325 Conservation Biology

ESS-324 Natural Resource Management

ESS-445 Fishery Science & Management

Take one of the following courses:

ESS-400 Senior Capstone I

ESS-401 Senior Capstone II

CHEMISTRY REQUIREMENT

Take the following courses: (Two semesters of Chemistry with lab (8 credits) are required)

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

BIOLOGY REQUIREMENT

Complete one of the following combinations of courses below:

BI-101 General Biology I

BI-300 General Ecology

BI-301 General Ecology Lab

BI-101 General Biology I

BI-325 Plant Ecology

BI-326 Plant Ecology Lab

MATH - STATISTICS

Take the following course:

ESS-230 Environmetrics

Take one of the following courses:

BI-305 Biostatistics

ESS-335 Quantitative Ecology

MA-130 Calculus I

MA-205 Elementary Statistics

ADVANCED ELECTIVES

Complete at least 16 credits from the following courses. NOTE: Some 200-level courses may be taken with advisor approval.

ESS-301 Environmental Methods

ESS-305 Environmental Economics

ESS-324 Natural Resource Management

ESS-325 Conservation Biology

ESS-328 Limnology

ESS-330 Geographical Information Systems

ESS-337 Environmental Law

ESS-340 Forestry

ESS-345 Ichthyology

ESS-346 Freshwater Invertebrates

ESS-361 Field Methods in Marine Systems

ESS-362 Island Ecosystems

ESS-363 Upland Process and Estuaries

ESS-364 Culture, Class and Gender

ESS-377 GIS Advanced Topic

ESS-380 Sense of Place Seminar

ESS-410 Water Resources II

ESS-445 Fishery Science & Management

BI-305 Biostatistics

BI-324 Ornithology

BI-327 Botany

BI-350 Invertebrate Zoology

BI-351 Invertebrate Zoology Lab

BI-360 Vertebrate Zoology

BI-361 Vertebrate Zoology Lab

BI-370 Herpetology

BI-432 Environmental Toxicology

Environmental Studies

CORE ENVIRONMENTAL STUDIES

Take the following courses:

ESS-100 Environmental Systems I

ESS-110 Environmental Systems II

ESS-206 Global Environmental Issues

ESS-224 Wildlife Mgmt

ESS-305 Environmental Economics

ESS-324 Natural Resource Management

ESS-337 Environmental Law

OTHER SCIENCE PREREQUISITES

Take one of the following courses:

BI-101 General Biology I

GL-100A Environmental Geology

ENVIRONMENTAL ANALYSIS

Take the following courses:

ESS-230 Environmetrics

ESS-310 Water Resources I

ESS-330 Geographical Information Systems

CAPSTONE

Take one of the following courses:

ESS-400 Senior Capstone I

ESS-401 Senior Capstone II

COURSES FROM ALLIED FIELD

Students must take one introductory course from two different allied fields: two elective courses in a focal area or concentration. NOTE: Allied fields include PACS, Politics, History, Business, Economics, Sociology, Gender Studies, IS, Psychology, or a language.

****Environmental Studies Students are strongly advised to take a Secondary Emphasis in an allied field.**

The ESS Department also offers resident programs at the Raystown Field Station and a Marine Science Program in India. Courses taken in these programs as well as other programs may substi-

tute directly into your POE. Students interested in these programs should work with their advisors to plan accordingly.

Finance

FINANCE CORE

Take the following courses:

EB-100 Introduction to Management

EB-105 International Economic Issues

EB-131 Financial Accounting

EB-202 Behavioral Analysis of Organizations

EB-232 Intermediate Accounting I

EB-233 Intermediate Accounting II

EB-236 Managerial Accounting

EB-211 Business Statistics

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

EB-342 Management Information Systems

EB-351 Marketing Management

EB-361 Financial Management I

EB-362 Financial Management II

EB-480 Senior Seminar

Take one of the following courses:

EB-463 Financial Markets & Institutions

EB-465 Financial Theory and Analysis

Take one of the following courses:

EB-210 Quantitative Business Analysis

MA-130 Calculus I

The option of Junior Year or Semester Abroad is encouraged. Foreign exchange partner institutions are likely to offer equivalent courses for EB-222, EB-223, EB-351, EB-361, and EB-362. Internships are also available.

EB-001 Non-Credit Business Internship

EB-490 Business Internship

EB-495 Business Internship Seminar

In some instances, a student (in consultation with his or her advisor) may substitute a course.

Fisheries and Aquatic Sciences

CORE COURSES

Take the following courses:

ESS-100 Environmental Systems I

ESS-110 Environmental Systems II

BI-101 General Biology I

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

ESS-230 Environmetrics

ESS-310 Water Resources I

ESS-330 Geographical Information Systems

ESS-337 Environmental Law

ESS-345 Ichthyology

ESS-445 Fishery Science & Management

Take one of the following courses:

ESS-400 Senior Capstone I

ESS-401 Senior Capstone II

FISHERIES AND AQUATIC SCIENCE

Take one of the following courses:

ESS-328 Limnology

ESS-346 Freshwater Invertebrates

ADDITIONAL BIOLOGICAL SCIENCE

Take four credits from the following courses:

BI-102 General Biology II

BI-300 General Ecology

BI-301 General Ecology Lab

BI-321 Ecological Genetics

BI-360 Vertebrate Zoology

BI-361 Vertebrate Zoology Lab

BI-432 Environmental Toxicology

ESS-325 Conservation Biology

PHYSICAL SCIENCES

Take eight credits from the following courses:

GL-100A Environmental Geology

GL-126 Environmental Geochemistry

GL-305 Hydrogeology

ESS-410 Water Resources II

CH-144 Integrated Chemistry Principles II

(AND)

CH-145 Integrated Chemistry Principles II Lab

PC-200 General Physics I

(AND)

PC-200L General Physics Lab I

MATH AND STATISTICS

Take three credits from the following courses:

ESS-335 Quantitative Ecology

BI-305 Biostatistics

MA-130 Calculus I

MA-220 Introduction to Probability & Statistics

HUMAN DIMENSIONS AND POLICY

Take three credits from the following courses:

ESS-206 Global Environmental Issues

ESS-305 Environmental Economics

ESS-324 Natural Resource Management

ESS-380 Sense of Place Seminar

CONN-202 Science and Society

French

The French designated program of emphasis builds proficiency in the French language and provides a general knowledge of French and Francophone cultures. It also allows students to focus on a specific area of French literature or civilization. The program prepares students for graduate work in French or related fields, as well as a variety of international professions.

Requirements

A minimum of one semester of study in France or a French-speaking country or region.

A minimum of 45 credit hours in French. Of these 45 hours, no more than 14 may be beginning or intermediate language courses (i.e. courses numbered below FR 230).

After returning from the semester or year abroad, students will take at least one 300 or 400 level course in the target language.

Prior to the second semester of the student's senior year, she/he must demonstrate at least intermediate-high oral proficiency in French on the ACTFL scale.

The following courses must be taken to complete the POE. Alternative courses taken at an exchange institution may be substituted with departmental approval:

FR-110 French I

Emphasizes the four communicative skills (speaking, reading, writing, and listening) focusing on the context of everyday life. Note: "Students may receive H or I credit provided that they have not taken more than two years of the language at the secondary-school level.

4 CreditsH,I

Students will only receive H or I distribution if they have not taken more than two years of French at the secondary level.

FR-120 French II

This class is intended for students who have completed FR 110 or its equivalent. In addition to learning and practicing basic communication skills in French, students will study some of the cultural foundations and practices of the French-speaking world. Instruction is entirely in French.

4 CreditsH,I,CS,SWGLSPRE-REQ: FR 110 or equivalent.

FR-210 French III

This is the third course in a the three-semester sequence of beginning and intermediate French. Students will learn and practice more advanced grammatical structures and vocabulary to communicate more spontaneously and fluently with other speakers of French.

3 CreditsH,I,CS,SWGLSPRE-REQ: French 120 or equivalent.

FR 110, 120, 210 are waived if students place out of them, but no academic credit will be awarded.

FR-270 Francophone Civilization and Culture II

An in-depth introduction to the history and influence of French culture outside Europe. Students will gain a general knowledge of contemporary Francophone cultures that exist throughout the world.

3 CreditsH,I,CSPrequisite: FR210 or equivalent.

FR-331 The Craft of Translation

This course introduces high-intermediate and advanced students of French to the formal technics and art of written translation.

3 CreditsH,I,CWStudents must have completed two 200 level courses taught in French or have instructor permission prior to enrollment.

WL-201 Language in Motion

In this course, international students, study-abroad returnees, students with other international experiences, heritage speakers, and/or upper-level language students expand their knowledge of language and culture, process their own intercultural and language-learning experiences, and enrich local school classrooms. In addition to learning about teaching language and culture and the school context, students develop individual projects for presentation in school classrooms.

1 CreditH, I, CS, SW-LE

In addition, students will select two elective courses outside the French program that focus on European history or topics of French or Francophone concern (for example):

HS-104 European History to 1550

This course traces the history of Europe from the late Roman Republic to the Protestant Reformation. Attention is given to political, social, and religious developments during the period.

4 CreditsH, I

IS-104 Ideas & Power in the Modern World

An integrative examination of human experience with an emphasis on language, gender, race, and literature and the ways in which different cultures and classes understand human reality.

4 CreditsH,I,CW,SWG1

PS-241 European Politics

Examines the modern history, political culture, institutions and policies of the major West European states. Britain, France, West Germany and the European Communities are compared along with selected other countries. The major problems confronting these are highlighted.

3 CreditsS, IPrerequisite: PS101 or PS102.

Total may not exceed 63 credit hours.

French Education

ED-110 Foundations of Education

Fall & Spring; Yearly; 3 Credits; S;

Discusses the historical and contemporary bases of major political, economic, legal, sociological, and psychological issues affecting public school systems. Students review current issues in education and write a personal philosophy statement. Corequisite: ED111.

ED-111 Foundations of Education Field Experience

Fall & Spring; Yearly; 1 Credit; S;

Provides a classroom experience for freshmen and students who are interested in education to explore teaching as a career and observe the application of multiple philosophies, theories, and teaching strategies. Corequisite: ED-110

Field Experience*

ED-130 Adolescent Development

Fall & Spring; Yealy; 3 Credits; S;

Examines human physical, cognitive, and social-emotional development from preadolescence through emerging adulthood. Topics include: identity, sexuality, and gender issues; emotional and behavioral challenges of adolescence, the impact of culture, language, and disability on adolescents, and the role of family, schools, and peers on development. Enrollment priority in this course is given to Education POEs.

ED-201 Educational Technology

Either Semester; Yearly; 3 Credits; S;

Introduces educational technology and computer systems and their current applications in the classroom. Topics to be covered include office programs, Web 2.0 programs, multimedia programs, course management systems and web-page construction; classroom presentation software; use of assistive technology and software evaluation. Prerequisites: ED110 and ED111 or ED101 and ED120 and ED121. ED130 may be taken as an alternate prerequisite for ED120/ED121 only.

ED-240 Introduction to Students With Exceptionalities

Fall & Spring; Yearly; 3 Credits; S;

Introduces the culture of exceptionalities within the public special education system. Historical, philosophical, educational, and legal perspectives will be presented. Students will learn the categories of exceptionalities, general characteristics of individuals with exceptionalities eligibility criteria, and the referral process for special education services. Professional and community resources, inclusion and other current issues will be discussed. Prerequisites: ED110 and ED111 and ED120 and ED121 or ED130.

ED-341 Adaptations for Students With Exceptionalities

Spring; Yearly; 4 Credits; CW, S;

The purpose of this course is to learn how to develop and manage effective inclusive learning environments for students with disabilities at the secondary level. Content will focus on the knowledge and skills necessary to create an instructional environment that communicates challenging expectations to students while utilizing and modifying research based instructional strategies/resources/technologies. Students will learn the critical components of effective collaboration with parents and professionals. Successful completion of a field experience in an educational setting is also a requirement. Prerequisites: ED110, ED111 and ED240.

Field Experience*

ED-398 Methods for Foreign Language Education

Fall; Yearly; 4 Credits; S, CS;

This course is for students interested in teaching foreign languages or English as a foreign language or second language (ESL). This course provides a thorough introduction to contemporary theories and methods of language pedagogy. Students seeking K-12 certification in foreign languages may take this course instead of ED420 after completing study abroad. It may also be taken by those students who have an interest in teaching English abroad. International students who are here for a semester or a year should also consider taking this course. Prerequisites: ED110 and ED111 and ED130 and ED240 and ED341.

ED-314 English Language Learners

Either Semester; Yearly; 1 Credit; S;

Focuses on the historical, legal, and cultural issues pertaining to meeting the educational needs of English language learners. Students are be introduced to research based best practices in instruction and assessment strategies for working with English language learners in the general education classroom setting. Prerequisite: ED120 or ED130.

Fall only **

ED-315 ELL Field Experience

Fall & Spring; Yearly; 1 Credit; S;

Provide students with 30 hours of field experience and participation in a variety of multi-cultural and multi-lingual environments in order to broaden their own experiences, prepare to teach English learners, and work with diverse families. Students accumulate required hours throughout their program, but they formally register for course credit during student teaching or their final semester at Juniata College. Prerequisites: ED314. Graded S (satisfactory) or U(unsatisfactory).

Field Experience*

Foreign Language Education students take ED 398, Methods for Foreign Language Education instead of ED 420, Secondary Methods

ED-450 Student Teaching

Fall & Spring; Yearly; 14 Credits; S;

Student teaching is the capstone experience for students preparing for certification to teach in their content area(s). Students synthesize and apply knowledge of developmental theory, content, and teaching methodology as they design, implement, and evaluate learning experiences in an intensive internship in the classroom. Corequisite: ED451 and completion of all clearances and requirements. Note: A special fee is assessed. Secondary level student teaching is in the fall semester; PreK-4th, and foreign language education student teaching is in the spring semester. Students must have access to reliable transportation.

ED-451 Student Teaching Seminar

Fall & Spring; Yearly; 1 Credit; S;

In conjunction with student teaching, students attend weekly seminars that are led by the college supervisors. These meetings focus on professional topics and allow students to reflect upon and share their student teaching experience. In addition, students develop interviewing techniques, become familiar with employment seeking strategies, and develop a portfolio that includes but is not limited to a resume, a philosophy of education statement, lesson plans, and documentation of professional experiences. Corequisite: ED450.

Total credit hours = 38 (25 upper level)

* There are field experiences in these courses. Students should take only one of these courses per semester. Allow a two-hour block of time for scheduled field experience twice a week.

** ED 450 & 451 (Student Teaching and Seminar) may be taken only

in the FALL semester of the senior year. Secondary Foreign Language Education majors take ED 450 & 451 in the SPRING semester. ED 450 requires students' full-time participation and no other courses may be taken during this semester without the education advisors' approval. Students must have reliable transportation.

NOTE: It is imperative that students work closely with their advisors to meet all current certification requirements. All students are required to take six credits of English composition (or equivalent) and literature (or the equivalent) and two college level mathematics courses (or the equivalent) prior to being admitted to a certification program. See Section I of the Education Department Student Handbook for explanation of all certification requirements.

FRENCH Requirements

Students must complete a minimum of 33 credit hours of French beyond FR 210

18 of those credit hours must be at the 300 level or above

At least 2 of the upper division French courses must be in literature

At least 2 of the French courses must be in Culture and Civilization

At least 1 of the Culture and Civilization courses must be at the 300 level or above

Courses taken at a Juniata study-abroad site may be included in the total

Total certification credit hours: 79

Upper level credit hours: 42

1 CW within the POE from FR 315, FR 331, FR 320, FR 345, FR 431, or FR 450

effective fall 2011: 1 CW within the POE - FR 331

Other POE Requirements: e.g internships, study abroad, certifications, etc.

One academic year of study abroad in a French speaking country

Students must enroll in FR 450, Research Project in French for 3 credit hours in the fall semester after returning from study abroad

Prior to the second semester of the senior year, the student will demonstrate advanced low oral proficiency in French as measured by an ACTFL Oral Proficiency Interview (American Council on the Teaching of Foreign Languages)

GPA of 3.0 for certification program and student teaching

Grade of C or higher in all courses required for certification

Satisfactory rating in all practica

Passing scores on all required PRAXIS exams

General Science

BIOLOGY CORE

Take the following courses:

BI-101 General Biology I

BI-300 General Ecology

CHEMISTRY CORE

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

ENVIRONMENTAL SCIENCE - GEOLOGY

Take the following courses:

ESS-100 Environmental Systems I

ESS-110 Environmental Systems II

GL-100A Environmental Geology

ESS-310 Water Resources I

ESS-261 Marine Biology I

MATHEMATICS CORE

Take one of the following courses:

MA-103 Quantitative Methods

ESS-230 Environmetrics

BI-305 Biostatistics

PHYSICS CORE

Take the following courses:

PC-120 Astronomy

PC-200 General Physics I

PC-200L General Physics Lab I

ADDITIONAL COURSES

Take four courses from the BI - Biology, CH - Chemistry, PC - Physics or ESS - Environmental Science/Studies departments at the 200, 300 or 400 level. NOTE: At least two courses must be at the 300/400 level.

General Science Secondary Education

BIOLOGY CORE

Take the following courses:

BI-101 General Biology I

BI-300 General Ecology

CHEMISTRY CORE

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

ENVIRONMENTAL SCIENCE - GEOLOGY

Take the following courses:

ESS-100 Environmental Systems I

ESS-110 Environmental Systems II

GL-100A Environmental Geology

ESS-310 Water Resources I

ESS-261 Marine Biology I

MATHEMATICS CORE

Take one of the following courses:

MA-103 Quantitative Methods

ESS-230 Environmetrics

BI-305 Biostatistics

PHYSICS CORE

Take the following courses:

PC-120 Astronomy

PC-200 General Physics I

PC-200L General Physics Lab I

ADDITIONAL COURSES

Take four courses from the BI - Biology, CH - Chemistry, PC - Physics or ESS - Environmental Science/Studies departments at the 200, 300 or 400 level. NOTE: At least two courses must be at the 300/400 level.

EDUCATION CORE

Take the following courses:

ED-110 Foundations of Education

ED-111 Foundations of Education Field Experience

ED-130 Adolescent Development

ED-201 Educational Technology

ED-240 Introduction to Students With Exceptionalities

ED-314 English Language Learners

ED-315 ELL Field Experience

ED-341 Adaptations for Students With Exceptionalities

ED-420 General Secondary Methods

ED-223 Math Methods: Stem I

Take one of the following courses:

ED-419A Secondary Pre-Student Teaching

ED-419B Secondary Pre-Student Teaching

Take the following courses:

ED-450 Student Teaching

ED-451 Student Teaching Seminar

* There are field experiences in these courses. Students should take only one of these courses per semester. Allow a two-hour block of time for scheduled field experience twice a week.

ED 450 & 451 (Student Teaching and Seminar) may be taken only in the FALL semester of the senior year. ED 450 requires students' full-time participation and no other courses may be taken during this semester without the education advisors' approval. Students must have reliable transportation.

NOTE: It is imperative that students work closely with their advi-

sors to meet all current certification requirements. All students are required to take six credits of English composition (or equivalent) and literature (or the equivalent) and two college level mathematics courses (or the equivalent) prior to being admitted to a certification program. See Section I of the Education Department Student Handbook for explanation of all certification requirements.

Students must have an advisor who is a member of the Physics Department faculty and Dr. Kathleen Jones in the Education Department.

Geology

CORE COURSES

Take the following courses:

GL-100A Environmental Geology

GL-204 History of Earth

GL-210 Minerals

GL-300 Petrography

GL-310 Structural Geology

GL-389 Geology Professional Seminar

GL-240 Geological Field Methods I

MA-130 Calculus I

CHEMISTRY REQUIREMENT

Complete one of the following groups:

GROUP 1

GL-126 Environmental Geochemistry

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

GROUP 2

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

ADVANCED ELECTIVES

Take 12 credits from the following courses: (Students cannot count

more than 6 credits of GL-450 towards the Geology POE)

GL-305 Hydrogeology

GL-304 Paleobiology of Invertebrates

GL-307 Geophysics

GL-401 Sedimentology

GL-405 Principles of Stratigraphy

GL-450 Geological Research

MA-230 Calculus II

PC-211 Environmental Physics

PC-211L Environmental Physics Lab

PC-200 General Physics I

PC-200L General Physics Lab I

PC-201 General Physics II

PC-201L General Physics Lab II

BI-305 Biostatistics

MA-220 Introduction to Probability & Statistics

CAPSTONE COURSES

Students must complete GL-405 or GL-440 as a capstone experience. Completion of a second capstone course may be applied towards the Advanced Electives requirement.

GL-405 Principles of Stratigraphy

GL-440 Geological Field Methods II

NOTE: Students with Geology POEs must include at least 21 credit hours at the 300/400 level from the lists above.

Curricular substitutions - PC 202/PC 203 may substitute for PC 200/PC 201

Health Communication

Health Communication is the study of communication as it relates to health professionals and health education. It includes the study of provider-client interaction as well as the diffusion of health information through public health campaigns.

COMMUNICATION CORE

Take the following courses:

CM-130 Introduction to Human Communication

CM-132 Message Analysis

CM-133 Mass Media and Society

CM-200 Art of Public Speaking

CM-220 Group Communication

CM-230 Interpersonal Communication

CM-340 Intercultural Communication

CM-365 Organizational Communication

CM-400A Health Communication

BIOLOGY CORE

Take one of the following courses:

BI-190 Human Biology

BI-290 Nutrition

INTERDISCIPLINARY CORE

Take the following courses:

CA-270 Infectious Disease & Society

PL-235 Ethics of Health Care

PY-101 Introduction to Psychology

PY-321 Health Psychology

Take one of the following courses:

EN-306 Creative Nonfiction Writing

EN-311 Professional News and Feature Writing

EN-274 Beyond Grey's Anatomy

Take one of the following courses:

EN-315 Technical Writing

EN-271 Public Health Writing

Take one of the following courses:

SO-101 Introduction to Sociology

AN-151 Introduction to Anthropology

INTERNSHIP

Take the following courses:

CM-490 Communication Internship

CM-495 Communication Internship Research

*Recommended Non-POE Courses:

BI-305 Biostatistics

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

Study Abroad with courses that will strengthen your professional interests in such areas as Biology, Chemistry, Computer Science, Business and Economics, Sociology/Social Work, Peace and Conflict Studies, Political Science, Psychology, and /or Philosophy.

Additional Notes: All students with this POE must choose an advisor from the Communication Department.

Most graduate assistants in this field require a 3.3 or higher GPA and GRE scores of at least 500 in each subcategory to be competitive for assistantships.

Related Internships And Careers - examples from former Juniata Students:

Healing Hands Physical Therapy, Piscataway, NJ

JC Blair Memorial Hospital, Huntingdon, PA

Morrison's Cove, Martinsburg, PA

Rehabilitation Hospital, Altoona, PA

Tyrone Hospital, Tyrone, PA

WIC Program, Mount Union, PA

Careers in Health Communication

Health Educator

School Health Care Administrator

Medical Grants Writer

Hospital Director of Communication

Clinic Public Relations Director

Health Communication Analyst

Research Analyst
 Medical Training Supervisor
 Communication Manager for Federal Health Agencies
 Health Personnel Educator
 Medical Center Publications Editor
 Hospice Manager
 Drug Rehabilitationist
 Health Care Counselor
 Activities Director
 Marketing Director
 Health Facility Fund Raiser
 Pharmaceutical Sales/Marketing
 Related subjects in Communication
 Interpersonal Communication
 Family Communication
 Interviewing
 Business and Professional Communication
 Public Speaking
 Research Methods
 Group Communication
 Conflict Resolution
 Public Relations
 Listening & Communication Ethics
 Nonverbal Communication
 Persuasion

Healthcare Administration

Building on Juniata's outstanding reputation as liberal arts college with strengths in the sciences, health professions, and business, the Healthcare Administration Program of Emphasis (POE) combines coursework from several fields including accounting, finance, organizational leadership, and healthcare-specific topics like genomics. Students in this program learn about the health care in-

dustry and the challenges it faces while studying management. Opportunities for research and internships help students put their knowledge into action and gain marketable experience to launch their health care administration careers.

Why Study Healthcare Administration at Juniata?

Understand Health Care Ethics: Healthcare Ethics is one of the courses you will take as part of your program, but it isn't the only part of the curriculum that addresses ethical issues in healthcare provision. Multiple courses in business and the natural sciences take a deep look at the ethical ramifications of healthcare and business decisions more generally, which means you'll graduate with a strong understanding of the ethical dimensions of decisions that healthcare organizations sometimes must make.

Gain Marketable Experience: At Juniata, you'll gain comprehensive knowledge in business and health care subject matter, but you can also complete case studies and an internship that will give you the experience you need, before you graduate. Juniata is located only blocks from J.C. Blair Health System, a four-star regional health-care network, and is less than an hour from several other health-care facilities and networks.

Be Informed by Many Points of View: In addition to studying health care administration from business and science experts, you'll be able to learn from hundreds of health care leaders thanks to Juniata's alumni network, featuring many graduate who've become leaders in health care. For instance, our alumni include the Chief Executive Officer of the American Medical Association, the president of the largest organ donation organization in the U.S., and entrepreneurial alumni who own their own genetics and bioinformatics companies.

Curriculum

The Health Care Administration curriculum is comprised of three areas. Study management theory, concepts, and skills related to leadership, financial management, economics, law, organizational behavior, quantitative methods, and planning. Study the health care industry including epidemiology, health and human behavior, and medical care organization. And, apply your knowledge of the healthcare industry in an internship, or a capstone project.

A Sampling of Courses

Behavior Analysis of Organizations

Business Statistics

Marketing Management

Business Writing

Medical Writing

Ethics of Health Care

Infectious Disease and Society

Business Law

Health Care Fiscal Management

Health Economics

Pick one course from among the electives for the Genomics Certificate, a program that Juniata created with funding from the Howard Hughes Medical Institutes:

The Social History of Modern Medicine

Medieval Medicine: Health and Disease in the Middle Ages

Doctors, Medicine and Literature

Science and Human Values

Moral Judgment

After You Graduate

In addition to alumni who've become leaders in the health care administration field, our graduates pursue graduate study at prestigious graduate schools and work in a physician's offices, manage clinics, and become CEOs of hospitals.

HEALTHCARE ADMINISTRATION CORE

Take the following courses:

EB-131 Financial Accounting

EB-100 Introduction to Management

EB-202 Behavioral Analysis of Organizations

EB-211 Business Statistics

EB-236 Managerial Accounting

EB-325 Health Economics

EB-351 Marketing Management

EB-363 Health Care Financial Management

EB-480 Senior Seminar

EB-490 Business Internship

EB-495 Business Internship Seminar

PL-235 Ethics of Health Care

PY-101 Introduction to Psychology

BI-190 Human Biology

Take one of the following courses:

EB-203 Introduction to Business Law

EB-204 Legal Regulation of Business

Take one of the following courses:

PY-321 Health Psychology

PY-411 Psychology and the Law

Take two of the following courses:

CA-270 Infectious Disease & Society

HS-313 Disease, Medicine & Empire

HS-314 Medieval Medicine

RU-299 Special Topics

PL-250 Science and Human Values

PY-302 Moral Judgment

History

HISTORY CORE

Take five 4.00 credit History courses at the 100-200 level:

HS-104 European History to 1550

HS-109 China and Japan to 1800

HS-115 United States to 1877

HS-116 The U.S. Since 1877

HS-152 World Civilizations From 1500

HS-199 Special Topics

HS-200 The Great War

HS-201 Samurai Legends & Lives

HS-204 Australia/New Zealand

HS-213 History of Ireland

HS-215 Rome: Republic to Empire

HS-217 The Lowcountry and the Gullah Culture

HS-221 Gender and Sexuality

HS-262 North American Environmental History

HS-266 History of South Africa

HS-268 Sword & Scimitar: Islam & West 500-1300

HS-272 Natives & Colonists in Early N. America

HS-277 History of Food

Take the following course:

HS-293 Sophomore Colloquium

Take five 4.00 credit History courses at the 300-400 level:

HS-305 The American Revolution

HS-306 People's Republic of China

HS-309 Civil War and Reconstruction

HS-312 The New South: 1877-1990

HS-313 Disease, Medicine & Empire

HS-314 Medieval Medicine

HS-316 WWII in Asia and Pacific

HS-320 Interpreting Terrorism

HS-322 Women's Lives-Medieval Europe

HS-324 Gendering the Raj

HS-325 The U.S. Since 1945

HS-326 Modern China

HS-327 Modern Japan

HS-367 Women in Africa

HS-399 Special Topics

HS-400 Crimes Against Humanity

HS-490 History Internship

HS-495 Senior History Research/Seminar

HS-496 Senior History Research/Seminar II

HS-499 Special Topics

Take the following courses:

HS-492 History Internship/Need Paperwork

HS-493 The Historian's Craft

NOTE: Three courses in your POE must cover topics that are based outside the US and Europe. IC 202: The Shaping of the American Mind may be listed as part of the designated history POE. Other courses may be considered by petition to the history department

At least 3 of the above courses must address history of a region that is neither Europe nor the United States. See the department for a complete list of courses that fulfill the non-western requirement. At least 2 of your history courses must be writing based, with one at the 300 level or above.

Because the History Department believes that all seniors should participate in a capstone experience, students who have history as part of their POEs should plan to participate either in HS 493, the history department's senior seminar, or in a similar experience in another department. Each student should consult his or her History Department advisor regarding what activities will fulfill this requirement.

History & Museum Studies

HISTORY CORE

Take the following courses:

HS-115 United States to 1877

HS-116 The U.S. Since 1877

HS-293 Sophomore Colloquium

HS-493 The Historian's Craft

HS-495 Senior History Research/Seminar

Take two 300/400 level History electives.

MUSEUM STUDIES CORE

Take the following courses:

AH-108 Cross Cultural Art 1

MM-390 Museum Studies

MM-392 Museum Education

MM-394 Curatorial Studies

MM-480 Museum Practicum I

MM-481 Museum Practicum II

ASSOCIATED COURSES

Take the following courses:

AR-104 Design and Color

EN-272 Introduction to Professional Writing

INTERNSHIP

Take the following courses for 0-5 credits: (An internship can count for credit or as a transcript notation. A second internship is strongly recommended)

HS-490 History Internship

HS-495 Senior History Research/Seminar

Human Resource Management

HUMAN RESOURCE MANAGEMENT CORE

Take the following courses:

EB-100 Introduction to Management

EB-105 International Economic Issues

EB-131 Financial Accounting

EB-202 Behavioral Analysis of Organizations

EB-204 Legal Regulation of Business

EB-211 Business Statistics

EB-223 Principles of Microeconomics

EB-236 Managerial Accounting

EB-341 Product and Operations Management

EB-351 Marketing Management

EB-361 Financial Management I

EB-371 Human Resource Management.

EB-379 Bargaining and Conflict Management

EB-480 Senior Seminar

Take one of the following courses:

EB-210 Quantitative Business Analysis

MA-130 Calculus I

ADDITIONAL COURSES

Complete 9 credits from one of the three categories listed below:

Psychology:

PY-101 Introduction to Psychology

PY-205 Social Psychology

PY-303 Learning & Conditioning

PY-304 Cognitive Psychology

Communication:

CM-130 Introduction to Human Communication

CM-230 Interpersonal Communication

CM-340 Intercultural Communication

CM-405A Women, Work & Identity

Peace & Conflict Studies:

PACS-105 Introduction to Conflict Resolution

PACS-205 Conflict Intervention

PACS-305 Gender and Conflict

Note: The option of Junior Year or Semester Abroad is encouraged. Foreign exchange partner institutions are likely to offer equivalent courses for EB-223, EB-341, EB-351, EB-361, and EB-371. Internships are also available.

EB-001 Non-Credit Business Internship

EB-490 Business Internship

EB-495 Business Internship Seminar

In some instances, a student (in consultation with his or her advisor) may substitute a course.

Information Technology

Learn the Skills You Need ...

The importance of communication and business skills

An appreciation for the wide-spread acceptance of multi-platform, distributed computing environments

An appreciation for IT's role in providing competitive advantage in today's dynamic business environment

How to deploy the latest technologies to solve real-world problems

... For the Future You Want

System and network administration

Web and multimedia development

Database development

Marketing and online commerce

Graduate studies

Webmaster

Content developer

Network or systems administrator

Facilities manager

User support specialist

Database developer or administrator

Multimedia developer

Systems analyst

Application developer

Interface design specialist

Testing and quality assurance specialist

Instructional designer

Technical marketing representative

INFORMATION TECHNOLOGY CORE I

Complete the following requirements below:

IT-110 Principles of Information Technology

(OR)

IT-111 Principles of IT Science

MA-116 Discrete Structures

CS-110 Computer Science I

IT-210 Information Technology Systems

CS-240 Computer Science II

CS-300 Software Engineering

IT-325 Network Design & Management.

CS-370 Database Management Systems

IT-350 Security Engineering

CM-200 Art of Public Speaking

IT-307 Project Management

IT-308 Innovations for Industry I

EB-202 Behavioral Analysis of Organizations

IT-380 Innovations for Industry II

IT-480 Innovations for Industry III

CM-290 The Metaverse

(OR)

IT-290 The Metaverse

CM-300 Professional Presentations

(OR)

EN-315 Technical Writing

Take 3 credits from the EB Department.

INFORMATION TECHNOLOGY CORE II

Complete one of the following groups below:

GROUP 1

IT-341 Web Design

IT-342 Web Programming

GROUP 2

IT-260 Human Computer Interaction

(OR)

IM-242 Info Visualization

UPPER-LEVEL IT/CS ELECTIVE

Complete one of the following groups below:

GROUP 1

Complete a 300 or 400 level IT/CS course.

GROUP 2

ESS-330 Geographical Information Systems

Notes:

1. The department may approve up to 7 credits of substitute technology related courses
2. The department requires and internship, either for credit or summer non-credit
3. The department recommends pursuing a related secondary emphasis in another discipline, e.g. business

Integrated Media Arts

CORE COURSES

Take the following courses:

IM-100 Integrated Media Art Seminar

IM-110 Principles of Digital Media

AR-104 Design and Color

CM-133 Mass Media and Society

IM-375 Integrated Media Lab I

IM-376 Integrated Media Lab II

EN-376 Writing Across Media

Take one of the following courses:

CS-110 Computer Science I

IT-105 Principles of Programming

Take one of the following courses:

AH-108 Cross Cultural Art 1

AH-113 Cross-Cultural Art 2

Take one of the following courses:

CM-290 The Metaverse

IT-290 The Metaverse

IMA CAPSTONE / EXPERIENTIAL LEARNING

Complete one of the following categories below:

Capstone:

Take the following courses:

IM-496 IMA Seminar

IM-497 IMA Research

Practicum:

Take the following courses:

IM-398 Integrated Media Practicum II

IM-498 Integrated Media Practicum III

Internship:

Take the following courses:

IM-490 IM Internship Need Paperwork

IM-495 Internship Seminar

IMA ELECTIVE COURSE SUGGESTIONS

Complete eighteen credits from the following courses:

IM-242 Info Visualization

AR-204 Digital Art I

AR-211 The Art of Bookmaking

CM-200 Art of Public Speaking

IM-250 Digital Audio Production

EN-273 Visual Literacy

CM-220 Group Communication

IM-298 Integrated Media Practicum I

IM-310 Social Media

IT-341 Web Design

IT-307 Project Management

IM-360 Digital Video Production

IM-361 Video Production II

EN-377

EN-378 Video Production Writing

(NOTE: At least 3 credits must be at the 300 level or higher)

International Business

INTERNATIONAL BUSINESS CORE

Take the following courses: (Study abroad equivalents may be ac-

cepted for EB-351, EB-361 or EB-381)

EB-100 Introduction to Management

EB-105 International Economic Issues

EB-131 Financial Accounting

EB-202 Behavioral Analysis of Organizations

EB-211 Business Statistics

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

EB-236 Managerial Accounting

EB-351 Marketing Management

EB-361 Financial Management I

EB-381 International Political Economy

EB-463 Financial Markets & Institutions

EB-480 Senior Seminar

Students are required to spend at least one semester abroad, but preferably a full academic year. Students are encouraged to take any of the "immersion" courses offered at our exchange partner institutions.

ADDITIONAL COURSES

Take the following courses:

PS-102 Introduction to International Politics

IS-200 Politics & Culture of Modernization

Take one of the following courses:

SP-210 Spanish III

FR-210 French III

GR-210 German III

RU-210 Intermediate Russian

Take two foreign language courses at the 300 or 400 level.

Notes:

Courses in this POE cover all the "I, S, and H" distribution requirements for graduation.

Students should choose courses that support the international

context for the "F" and "N" requirements.

Students must meet oral proficiency at the ACTFL (American Council on Teaching of Foreign Languages) level of "Intermediate High."

Students may study abroad in an English-speaking country, as long as they satisfy the foreign language requirements of coursework and ACTFL proficiency.

In some instances, a student (in consultation with academic advisor) may substitute a course.

International Politics

INTERNATIONAL POLITICS CORE

Take the following courses:

PS-101 Introduction to American Government

PS-102 Introduction to International Politics

Take one of the following courses:

PS-221 American Political Thought

PS-222 Western Political Thought

INTERNATIONAL POLITICS

Complete one of the following groups below: (PS-389, PS-199, PS-299 or PS-399 may fulfill requirement depending on specific topic of course.)

GROUP 1

Take one of the following courses:

PS-241 European Politics

PS-243 U.S. Foreign Policy

PS-291 Mexican Fulbright Special Topics

PS-298 Gender and Health Care

PS-334 Human Rights

PS-335 Law of Nations

PS-340 Topics in International Politics

PS-346 African Politics

GROUP 2

Take the following courses:

PS-249 Senegambia I

PS-250 Senegambia II

GROUP 3

Take the following courses:

PS-235 Migration

PS-236 Eyewitness to Migration in Mexico

INTERPRETING DATA ELECTIVE

Take one of the following courses:

DS-110 Intro to Data Science

EB-210 Quantitative Business Analysis

EB-211 Business Statistics

ESS-230 Environmetrics

MA-205 Elementary Statistics

MA-220 Introduction to Probability & Statistics

MA-321 Multivariate Statistics

PY-260 Research Methods & Statistics I

SW-214 Integrated Research Methods & Stats I

ECONOMICS COURSES

Take two of the following courses:

EB-105 International Economic Issues

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

EB-381 International Political Economy

ESS-305 Environmental Economics

POLITICS ELECTIVE

Take any three credits from the Politics Department (any course with a PS prefix). Global Climate Change counts as a Politics Department Elective.

NOTE: Politics credits taken during your semester abroad can be used to fulfill this requirement but cannot also be used to fulfill your Study Abroad credits.

WORLD LANGUAGE AND CULTURE

Take any three credits from the World Language & Cultures Department.

NOTE: World Language & Culture credits taken during your semester abroad can be used to fulfill this requirement but cannot also be used to fulfill your Study Abroad credits.

STUDY ABROAD

International Politics students must take twelve credits of coursework during a semester or year-long study abroad experience. These twelve credits cannot count for any other POE requirement.

CAPSTONE

Take one of the following groups:

SENIOR SEMINAR

PS-499 Senior Seminar

HONORS RESEARCH SERIES

PS-497 Honors Research I

(AND)

PS-498 Honors Research II

IMPORTANT: A total of 18 credits must be at the 300-level or above. The same course cannot be used to satisfy more than one POE requirement.

International Studies

What to Expect?

What your four years in the International Studies Department at Juniata College might look like.

International Studies students must understand both the diversity of human experience and the interconnectedness of problems in our increasingly global political, economic, and cultural environments.

Students in the International Studies Program:

Develop the ability to recognize cultural differences and to communicate with members of other cultures in their languages

Develop critical interpretive skills

Acquire contextual knowledge through the analysis of past and present issues

Are aware of and sensitive to ethical issues in global contexts

The International Studies curriculum is composed of three pillars: core courses in economics, politics, history, culture and at least one world language; study abroad; and the capstone experience, IS 400 Senior Seminar, where students reflect and build upon their experiences of the previous three years. Students graduate with an interdisciplinary perspective of the world and an analytical lens from which to understand it.

REQUIRED CORE

Take one of the following courses:

IS-104 Ideas & Power in the Modern World

PACS-105 Introduction to Conflict Resolution

Take one of the following courses:

IS-200 Politics & Culture of Modernization

PACS-110 Introduction to Peace & Conflict Studies

Take one of the following courses:

PS-102 Introduction to International Politics

EB-105 International Economic Issues

Take one of the following courses:

IS-400 Senior Seminar in International Studies

HS-320 Interpreting Terrorism

EB-381 International Political Economy

PS-334 Human Rights

ELECTIVE COURSES

Political:

Take two of the following courses:

PS-241 European Politics

PS-243 U.S. Foreign Policy

PS-249 Senegambia I

PS-250 Senegambia II

PS-235 Migration

PS-236 Eyewitness to Migration in Mexico

PS-298 Gender and Health Care

PS-334 Human Rights

PS-335 Law of Nations

PS-340 Topics in International Politics

PS-346 African Politics

Economics:

Take one of the following courses:

EB-222 Principles of Macroeconomics

EB-381 International Political Economy

Peace and Conflict Studies:

Take one of the following courses:

PACS-305 Gender and Conflict

PACS-308 Nonviolence: Theory & Practice

PACS-310 Digital Peacebuilding

Environmental Science/Studies:

Take one of the following courses:

ESS-206 Global Environmental Issues

ESS-305 Environmental Economics

ESS-337 Environmental Law

History:

Take one of the following courses:

HS-200 The Great War

HS-204 Australia/New Zealand

HS-213 History of Ireland

HS-313 Disease, Medicine & Empire

HS-367 Women in Africa

HS-400 Crimes Against Humanity

STUDY ABROAD

Students must study abroad for at least one semester. Study abroad is waived for International Students.

Management

MANAGEMENT CORE

Take the following courses:

EB-100 Introduction to Management
 EB-105 International Economic Issues
 EB-131 Financial Accounting
 EB-202 Behavioral Analysis of Organizations
 EB-211 Business Statistics
 EB-236 Managerial Accounting
 EB-341 Product and Operations Management
 EB-351 Marketing Management
 EB-361 Financial Management I
 EB-371 Human Resource Management.
 EB-480 Senior Seminar

Take one of the following courses:

EB-210 Quantitative Business Analysis
 MA-130 Calculus I

Take one of the following courses:

EB-222 Principles of Macroeconomics
 EB-223 Principles of Microeconomics

ADDITIONAL COURSES

Complete one of the following groups below:

GROUP 1

Take eleven credits from the EB department at the 200, 300, 400 or 500 level.

EB-203 Introduction to Business Law
 EB-204 Legal Regulation of Business
 EB-207 New Venture Creation
 EB-307 New Venture Start-Ups
 EB-337 Cost Accounting
 EB-342 Management Information Systems
 EB-355 Marketing Strategies

EB-359 Advertising & Promo Mgmt
 EB-362 Financial Management II
 EB-379 Bargaining and Conflict Management
 EB-381 International Political Economy
 EB-407 Entrepreneurship
 EB-463 Financial Markets & Institutions
 EB-222 Principles of Macroeconomics
 (If not taken above)
 EB-223 Principles of Microeconomics
 (If not taken above)
 (OR) Any 300 or 400 level EB special topics course
 GROUP 2

Junior Year or Semester Abroad (individualized POE)

Internships also available:

EB-490 Business Internship
 EB-495 Business Internship Seminar

In some instances, a student (in consultation with his or her advisor) may substitute a course.

Marketing

MARKETING CORE

Take the following courses:

EB-100 Introduction to Management
 EB-105 International Economic Issues
 EB-131 Financial Accounting
 EB-202 Behavioral Analysis of Organizations
 EB-211 Business Statistics
 EB-223 Principles of Microeconomics
 EB-236 Managerial Accounting
 EB-341 Product and Operations Management
 EB-351 Marketing Management

EB-355 Marketing Strategies

EB-358 Marketing Research and Analytics

EB-361 Financial Management I

EB-371 Human Resource Management.

EB-480 Senior Seminar

CM-132 Message Analysis

CM-330 Media Analysis

Take one of the following courses:

EB-210 Quantitative Business Analysis

MA-130 Calculus I

Take the following course:

EB-359 Advertising & Promo Mgmt

The option of Junior Year or Semester Abroad is encouraged. Foreign exchange partner institutions are likely to offer equivalent courses for EB-222, EB-223, EB-351, EB-355, EB-341, EB-361, or EB-371. Internships are also available.

EB-001 Non-Credit Business Internship

EB-490 Business Internship

EB-495 Business Internship Seminar

In some instances, a student (in consultation with his or her advisor) may substitute a course.

Mathematics

MATHEMATICS CORE

Take one of the following courses:

MA-116 Discrete Structures

CS-116 Discrete Structures

Take the following courses:

MA-130 Calculus I

MA-160 Linear Algebra

MA-210 Foundations of Mathematics

MA-220 Introduction to Probability & Statistics

MA-230 Calculus II

MA-235 Calculus III

CS-110 Computer Science I

MA-480 Mathematics Seminar I

ADDITIONAL COURSES

Applied Mathematics:

Take one of the following courses:

MA-303 Mathematical Modeling

MA-321 Multivariate Statistics

MA-322 Probability

MA-325 Statistical Consulting

MA-335 Differential Equations

MA-340 Numerical Analysis

Theoretical Mathematics:

Take one of the following courses:

MA-316 Combinatorics

MA-350 Topics in Geometry

MA-360 Abstract Algebra

MA-365 Number Theory

MA-370 Real Analysis

MA-375 Complex Analysis

Take six credits from the following courses:

MA-303 Mathematical Modeling

MA-321 Multivariate Statistics

MA-325 Statistical Consulting

MA-335 Differential Equations

MA-340 Numerical Analysis

MA-316 Combinatorics

MA-322 Probability

MA-350 Topics in Geometry

MA-355 Nature of Mathematics

MA-360 Abstract Algebra

MA-365 Number Theory

MA-370 Real Analysis

MA-375 Complex Analysis

MA-399 Special Topics

MA-485 Mathematics Research

COURSES FROM OTHER DEPARTMENTS

Take six additional credits from the Mathematics, Computer Science, ABE or Physics departments.

Mathematics:

MA-303 Mathematical Modeling

MA-321 Multivariate Statistics

MA-325 Statistical Consulting

MA-335 Differential Equations

MA-340 Numerical Analysis

MA-316 Combinatorics

MA-322 Probability

MA-350 Topics in Geometry

MA-355 Nature of Mathematics

MA-360 Abstract Algebra

MA-365 Number Theory

MA-370 Real Analysis

MA-375 Complex Analysis

MA-399 Special Topics

MA-485 Mathematics Research

Computer Science:

CS-300 Software Engineering

CS-315 Algorithms and Analysis

CS-330 Computer Graphics

CS-362 Languages and Translation

CS-370 Database Management Systems

CS-399 Special Topics

DS-352 Machine Learning

Accounting/Business/Economics:

EB-320 Intermediate Microeconomics

EB-321 Intermediate Macroeconomics

EB-341 Product and Operations Management

EB-463 Financial Markets & Institutions

EB-465 Financial Theory and Analysis

Physics:

PC-301 Theoretical Modern Physics

PC-320 Engineering Mechanics I: Statics

PC-321 Engineering Mechanics II: Dynamics

PC-340 Mathematical Methods in Physics

PC-350 Thermodynamics

PC-402 Quantum Mechanics

PC-410 Mechanics

PC-491 Electricity & Magnetism

PC-430 Optics

Rationale

A program in mathematics can lay the foundation for a wide variety of careers, ranging from the very specific (actuarial science) to the very general (law). Training in mathematics develops problem solving and logical reasoning skills and a perspective to analyze, organize, and synthesize. These basic analytical tools can then be enhanced by adding appropriate technical skills.

The "core" of the Mathematics POE provides an introduction to the different conceptual and technical components of an undergraduate education in mathematics (i.e., discrete mathematics, calculus, probability and statistics, and computer programming). In addition, appropriate mathematical software is integrated throughout the program to facilitate the analysis of real world problems and the multirepresentational (i.e., graphical, numerical, and algebraic) approach to problem solving. One can then specialize in the direction of classical applied mathematics by pursuing physics and further-

ing the study of mathematical systems applicable to this field. Or one can move in the direction of theoretical mathematics by beginning the study of the theory behind algebra, geometry, calculus, probability and statistics, or even computer science. Beyond these more traditional options, one can also select a wide range of applications such as statistics, actuarial science, operations research, economics, computer science, or data science. The requisite skills that are relevant courses for these options vary considerably and should be chosen in close consultation with an appropriate advisor.

Mathematics Secondary Education

Juniata students receive excellent preparation for becoming high school mathematics teachers. Students with a POE in Mathematics/Secondary Education take a full slate of mathematics courses, while receiving great training in Juniata's Education Department. Mathematics teachers from Juniata are known and in demand throughout the region, as our graduates secure teaching jobs with ease.

This POE accurately reflects the requirements for a full Mathematics degree as well as required courses in Education. The POE represents the courses required to meet Pennsylvania Department of Education (PDE) secondary education certification guidelines.

MATHEMATICS CORE

Take the following courses:

MA-130 Calculus I

MA-160 Linear Algebra

MA-210 Foundations of Mathematics

MA-220 Introduction to Probability & Statistics

MA-230 Calculus II

MA-235 Calculus III

MA-303 Mathematical Modeling

MA-350 Topics in Geometry

MA-355 Nature of Mathematics

MA-360 Abstract Algebra

Take eight 300 or 400 level credits from the Mathematics Department. Excludes MA-303, MA-350, MA-355, MA-360 and MA-480.

MATH RELATED COURSES

Take one of the following courses:

MA-116 Discrete Structures

CS-116 Discrete Structures

Take the following course:

CS-110 Computer Science I

Take 2-5 additional credits from the DS - Data Science, CS - Computer Science or PC - Physics departments. (Also includes MA-208, PL-208, IT-105 and PL-105)

EDUCATION CORE

Take the following courses:

ED-110 Foundations of Education

ED-111 Foundations of Education Field Experience

ED-130 Adolescent Development

ED-201 Educational Technology

ED-240 Introduction to Students With Exceptionalities

ED-314 English Language Learners

ED-315 ELL Field Experience

ED-341 Adaptations for Students With Exceptionalities

ED-419A Secondary Pre-Student Teaching

ED-420 General Secondary Methods

ED-423 Secondary Education Field Trip

ED-450 Student Teaching

ED-451 Student Teaching Seminar

There are field experiences in these courses. Students should take only one of these courses per semester. Allow a two-hour block of time for scheduled field experience twice a week.

ED 450 & 451 (Student Teaching and Seminar) may be taken only in the FALL semester of the senior year. Secondary Foreign Language Education majors take ED 450 & ED 451 in the SPRING semester. ED 450 requires students' full-time participation and no other courses may be taken during this semester without the education advisors' approval. Students must have reliable transportation.

NOTE: It is imperative that students work closely with their advisors to meet all current certification requirements. All students must meet a minimum GPA requirement and pass the PRAXIS I and II exams. All students are required to take six credits of English composition (or equivalent) and literature (or the equivalent) and two college level mathematics courses (or the equivalent) prior to being

admitted to a certification program. See Section I of the Education Department Student Handbook for explanation of all certification requirements.

Students must have advisor who is a member of the Mathematics Department faculty and Dr. Kathleen Jones in the Education Department.

Neuroscience

Study the brain and nervous system to uncover why humans behave the way we do. Be a part of learning more about neurological disorders and the treatments that can help those experiencing them. From neurological and psychiatric disorders to opioid use and obesity, our students study a broad range of neuroscience topics in chemistry, biology, psychology, education, and more.

Why Study Neuroscience at Juniata?

Learn from experts in many fields: Juniata's neuroscience program integrates the study of psychology, chemistry, biology, computer science, economics, education, and philosophy. Some courses are team-taught by professors from several of these areas of expertise, which helps you identify your specific interests in neuroscience.

Develop a specialization: As you move through your neuroscience coursework and learning opportunities, you can specialize in one area of neuroscience. Options include molecular/cellular neuroscience, cognitive/behavioral neuroscience, systems neuroscience, or other fields.

Gain experience: Conduct research in neuroscience. You can study a variety of topics about the brain and nervous system, from risky decision making to Alzheimer's disease. When studying neuroscience, you'll answer questions using thought processes from many disciplines—analyzing everything the chemicals in the brain to a person's behavior—and understand how many fields of study intersect.

NEUROSCIENCE CORE

Take the following courses:

NEU-120 Fundamentals Undergraduate Neuroscience

Capstone in Neuroscience

BIOLOGY CORE

Take the following courses:

BI-101 General Biology I

BI-102 General Biology II

CHEMISTRY CORE

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

CH-232 Organic Chemistry I

PSYCHOLOGY CORE

Take the following courses:

PY-101 Introduction to Psychology

PY-238 Biopsychology

STATISTICS CORE

Take one of the following courses:

BI-305 Biostatistics

MA-220 Introduction to Probability & Statistics

INTEGRATED CORE

Take 9 credits from the following areas:

Cognitive/Behavioral:

PY-270 Cognitive Neuroscience

Systems:

BI-450 Neurobiology

Molecular:

CH-312 Biochemistry

ELECTIVES

Complete at least one course from two different core areas below - a minimum of 6 credits.

Cognitive/Behavioral:

PY-203 Abnormal Psychology

PY-303 Learning & Conditioning

PY-304 Cognitive Psychology

PY-321 Health Psychology

PY-350 Developmental Psychology

ED-312 Language and the Brain

PY-340 Research in Psychology

PY-341 Research in Psychology

Systems:

BI-310 Physiology

BI-380 Biology Research Methods

BIN-400 Bioinformatics Fundamentals

BI-489 Biology Research

Molecular:

BI-316 Molecular & Cellular Biology

BI-318 Developmental Biology

CH-247 Bioanalytical Chemistry

CH-418 Advanced Biochemistry

CH-494 Chemistry Research

Student Opportunities

Research: Study neuroscience in many research contexts. One Juniata biology professor researches the behavior of crawfish and another studies the impacts of healthy behaviors on lifespans by examining *C. elegans*, a tiny worm. Juniata psychologists study risky decision making and mating preferences in humans. Here, you can contribute to research on these topics, or investigate a topic of your own choosing.

Present Your Findings: Juniata's neuroscience students and faculty have presented research at national and international conferences organized by the American Society for Cell Biology, the American Society for Biochemistry and Molecular Biology, the Genetics Society of America, Psychonomics, and the Northeastern Evolutionary Psychology Society. Students can also present at Liberal Arts Symposium, Juniata's on-campus research and scholarship event.

Our Recent Graduates

Many students studying neuroscience decide to pursue graduate degrees or attend medical school after graduating from Juniata. Others secure careers in industry, often doing work that includes running clinical trials for pharmaceuticals.

Peace and Conflict Studies

Core Courses

PACS-105 Introduction to Conflict Resolution

Variable; Yearly; Credits: 3; S;

A survey of the field of conflict, this course explores the causes and consequences of social conflict. Theory and case studies are used to understand interpersonal disputes, the intricacies of groups in conflict and international issues and crisis. Emphasis is given to understanding the basic theoretical concepts of the field and developing basic conflict resolving skills.

PACS-110 Introduction to Peace & Conflict Studies

Either Semester; Yearly; Credits: 3; I,SWGH2;

This course explores war and deep-rooted conflict as human problems and peace as a human potential. Students collaborate in small groups to explore a range of different approaches to peace around the world. Prerequisite or corequisite: FYC or CWS

PACS-305 Gender and Conflict

Fall; Yearly; Credits: 3; S,I,CW;

Examines how an understanding of gender issues is critical to understanding, assessing, and effectively addressing many conflicts. The course takes an interdisciplinary look at conflicts ranging from the differing experiences of women and men in conflict to interconnections between masculinity, femininity, security and warfare. An analysis of the ways in which gender issues cause and escalate conflicts is paired with discussions of how to address, challenge, wage and/or resolve gendered conflicts. Prerequisite: Sophomore, Junior, or Senior standing.

PACS-308 Nonviolence: Theory & Practice

Either Semester; Variable; Credits: 3; S,H,CW;

A study of the theory and practice of non-violence, this course explores both the theoretical development of nonviolence and the use of nonviolence as a means for waging and resolving conflict. The course explores nonviolence theory as it applies to issues of social change, alternative defense, and personal transformation, using writings from political, sociological, feminist, religious and philosophical perspectives. Prerequisite: Sophomore standing recommended.

PACS-405 Conflict Transformation

Spring; Odd Years; Credits: 3; S,I,CW;

This is the Capstone course for students with PACS in their POE. The course explores the possibilities for achieving justice, reconcil-

iation, and sustainable peace in societies where protracted ethnic and political conflicts have had a devastating impact. The course examines the root causes of such conflict with a particular focus on how the practices of peace building and conflict transformation seek to mobilize people and resources to transform unjust structures and relationships. Prerequisites: Senior standing, with a primary or secondary emphasis on PACS (or PACS as a strand of an individualized POE), or permission of the instructor.

PACS-490 Peace & Conflict Studies Internship

Fall & Spring; Yearly; Credits: 2-9; I;

An opportunity which requires students to relate theory and practice to a working environment and to reflect upon that experience. Corequisite: PACS 495. Prerequisite: Permission and Jr. or Sr. Standing.

PACS-495 PACS Intern.Res.Sem.

Fall & Spring; Yearly; Credits: 2-6; I;

Requires students to reflect on the internship experience and/or pursue research related to the placement. Prerequisite: PACS110 and permission. Corequisite: PACS490.

A semester of study abroad may fulfill the PACS 490 and PACS 495 requirements.

The POE includes a minimum of 8 hours language or competency.

Courses to complete the PACS POE should be chosen from the following four sections. At least 40 credits must come from the core and sections 1, 2 and 3. From section 4, choose prerequisites and electives. Choose at least one course from section 5. At least 18 credits must be at the 300 level or above. The POE must include one approved "CW" course.

Students must be able to defend the coherence and logic of their choices.

To qualify to receive honors, student must also take PACS 455, Honors Thesis and a methods course.

Electives

Understanding War & Deep Rooted Conflict (Choose at least 4):

RU-235 Tolstoy

Spring; Variable; Credits: 4; CA,H,I,CW,CS;

An examination of Tolstoy's development as a thinker about war and religion and his search for a literary form adequate for the expression of his ideas and moral sense. Readings will include writings on non-resistance to evil. Prerequisite: EN110 or EN109 or another

Russian literature course or permission.

RU-335 Tolstoy

Spring; Variable; Credits: 4; CA,I,H,CW,CS;

See RU235. Meets with RU235. Additional work is assigned in Russian. Prerequisite: RU235.

PACS-300 Anthropology of War & Peace

; ; Credits: 3; S;

Prerequisites: PACS 110 or AN 151

CM-420B Media Violence

Variable; Variable; Credits: 3; H,CW;

This media studies course introduces students to basic issues and research surrounding media violence. We take a hard look at media violence and its scholarly research in order to understand the intricacies of both our fascination and repulsion for all of the media's manifestations of violence. Cross-listed in Communication and Peace and Conflicts Studies, this course asks students to critically analyze media violence while integrating current media research into our understanding of violence as a presence in our lives and what we can or should do about it. Prerequisites: CM132 or CM133.

PACS-405 Conflict Transformation

Spring; Odd Years; Credits: 3; S,I,CW;

This is the Capstone course for students with PACS in their POE. The course explores the possibilities for achieving justice, reconciliation, and sustainable peace in societies where protracted ethnic and political conflicts have had a devastating impact. The course examines the root causes of such conflict with a particular focus on how the practices of peace building and conflict transformation seek to mobilize people and resources to transform unjust structures and relationships. Prerequisites: Senior standing, with a primary or secondary emphasis on PACS (or PACS as a strand of an individualized POE), or permission of the instructor.

RL-341 Religion and War

Variable; Yearly; Credits: 4; CA,H,CW;

This course explores the role of religion in warfare. It looks at the evolution of religion and war in our species, modern anthropological investigations of religion and war, religious discussions of war in Western and non-Western religions.

IC-212 Political Psychology

Fall; Yearly; Credits: 3; IC;

This Interdisciplinary Colloquium examines the overlap between political science and psychology. Topics include how and why citizens from political attitudes, how elected officials make decisions, the influence of values, the structure of political beliefs and ideologies, how citizens interact with each other, political persuasion, and attitude change. Special attention will be given to using political psychology to understand contemporary politics. Prerequisites: EN110 or EN109 and Sophomore, Junior or Senior standing.

Paradigms for Waging Conflict (choose at least 2):

SP-275 Art and Activism in Latin America

Fall; Variable; Credits: 3; I,H,CS;

Studies art --literature, film, music, plastic arts, etc.--that denounces social injustice and seeks to trigger fundamental reforms in Latin American societies. Known as *arte comprometido* or committed art in Latin America, selected violence, economic exploitation, racism, and machismo. The course is conducted in Spanish. Prerequisites: SP210 or by permission of the instructor.

SP-375 Art and Activism in Latin America

Fall; Variable; Credits: 3; I,H,CS;

Studies art --literature, film, music, plastic arts, etc.--that denounces social injustice and seeks to trigger fundamental reforms in Latin American societies. Known as *arte comprometido* or committed art in Latin America, selected artistic texts treat topics such as political violence, economic exploitation, racism, and machismo. The course is conducted in Spanish. Prerequisites: SP250 or SP255 or by permission of the instructor.

PC-239 Nuclear Threat

Variable; Yearly; Credits: 4; CA,N,H,CW,WK-SP;

This course examines the development and ramifications of nuclear weapons. Students will learn the basic physics upon which these devices operate, and explore moral issues that arose in the interactions of communities impacted by their construction, use, and testing, including the perspectives of scientists, government officials, and affected citizenry. Current issues and concerns regarding nuclear weapons will be studied as well.

Paradigms for Conflict Resolution and Peacebuilding (choose at least 2):

PACS-108 Mediation

Either Semester; Yearly; Credits: 1-3; S;

Students learn the basic model of interest-based mediation and the theoretical framework that guides its use. Role-plays and simulations will be used to prepare students to serve as mediators in a

variety of contexts. Students will be trained to use a co-mediation model to resolve interpersonal and small group conflicts. There will be Saturday and Sunday meeting times 9 am-5 pm. There are 3 weekends. You will enroll for 1 weekend if you take 1 credit, 2 weekends if you do 2 credits and 3 if you take 3 credits. Homework assignments will be completed online.

EB-202 Behavioral Analysis of Organizations

Variable; Yearly; Credits: 4; CW,S;

The broad focus of the course is to examine how individuals come together to form a successful organization. The course is broken into three major sections: people, organizations, and leadership. The course emphasizes student involvement and engages students in a variety of in-class exercises, case analysis role playing exercises, small group exercises, and an off-campus class experience or two. One or more off-campus experiences are required for the course. Prerequisite: Sophomore standing.

PACS-205 Conflict Intervention

; ; Credits: 3; S;

Prerequisites: PACS 105, or PACS 108 or permission

EB-379 Bargaining and Conflict Management

Spring; Yearly; Credits: 3; S,CS;

Bargaining and Conflict Management provides students with an opportunity to learn about bargaining and conflict-management theory. Students will have the opportunity to explore and apply this theory, and to examine aspects of bargaining style, in a variety of bargaining simulations. The course will also have an international component by utilizing international bargaining simulations as an instructional tool. Prerequisite: EB202 or PACS202.

PS-334 Human Rights

Variable; Variable; Credits: 3; I,S;

This class focuses on some of the debates concerning human rights: realism versus idealism; individualism versus communitarianism; universalism versus relativism; religious fundamentalism versus secularism; women's rights as human rights; liberalism versus socialism. We review the historical evolution of human rights. We devote part of the semester to the role of literature and the arts in creating and promoting human rights. Prerequisite: PS102.

Interdisciplinary Electives:

IS-104 Ideas & Power in the Modern World

Spring; All Years; Credits: 4; H,I,CW,SWGHI;

An integrative examination of human experience with an emphasis on language, gender, race, and literature and the ways in which different cultures and classes understand human reality.

HS-305 The American Revolution

Spring; Variable; Credits: 4; H,CW,WK-HT;

The American Revolution reshaped the world by spreading the idea of independence, and it continues to influence our lives in every way, from debating the rights of citizenship to including Hamilton on your playlist. HS-305 examines the origins and consequences of the American Revolution. The central questions include: What caused the American Revolution? How did the United States win the War of Independence? What resulted from the American Revolution? Class activities include extensive discussion, reading, and a role-playing game.

HS-309 Civil War and Reconstruction

Fall; Yearly; Credits: 3; H,CW,CTDH;

Examines the political, social, military, economic and ideological origins and consequences of the Civil War and Reconstruction. The course looks deeply into several important questions. What caused the Civil War? Why was the Union victorious? Why did the war proceed as it did? What was the nature and legacy of reconstruction? What does this period in our history mean to us now? Prerequisites: HS115 or HS116 and SO, JR, or SR standing.

CM-340 Intercultural Communication

Either Semester; Yearly; Credits: 3; H,I;

This course examines symbolic patterns of communication as they relate to issues of diversity. Interactive skills needed to open channels of communication between and among people of diverse backgrounds are analyzed and developed. A multi-cultural approach to the study of human communication serves as a basis for exploring issues of diversity that include but are not limited to race, gender, class, ability, orientation, religion and ethnicity. Prerequisite: CM230.

CM-133 Mass Media and Society

Either Semester; Yearly; Credits: 3; H,CS;

An examination of the convergence of mass media (print, radio, television, sound, film, and internet) which serve our most common public interests. The focus is on the four primary functions to inform, to entertain, to persuade, and to transmit culture. Students have a better understanding of the tension between media as business and its social responsibility to its citizens. This course is not open to seniors.

CM-230 Interpersonal Communication

Either Semester; Yearly; Credits: 3; H,CS;

Introduces students to the various theories and styles of one-on-one communication. It emphasizes the transactional approach in the study of the communication process as it occurs in interpersonal relationships. It explores interaction as a way by which we come to know ourselves and each other. Prerequisites: CM130.

PS-222 Western Political Thought

Variable; Variable; Credits: 4; H,WK-HT;

Surveys selected works of philosophers from Plato to Nietzsche. The course will focus on enduring questions -- what is the good, the nature of the best regime, how do freedom and authority intersect, and so on. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

PS-243 U.S. Foreign Policy

Variable; Variable; Credits: 3; S,I;

Examines U.S. Foreign Policy from the Monroe Doctrine to the New World Order. Special emphasis is given to the tension between isolationism and globalism in this century. The course will focus on contemporary issues such as: the relationship with the UN, the U.S. as a global policeman, and the role of human rights as an American priority. Prerequisite: PS102.

PS-340 Topics in International Politics

Variable; Variable; Credits: 3; S,I;

Examines international politics in light of a specific topic or issue. The topics include themes such as: Global Environmental Politics, Nationalism, and Competing World Ideologies.

EB-105 International Economic Issues

Fall & Spring; Variable; Credits: 3; S,I;

Understanding international economics is increasingly important for private and public decision-makers. In a world of growing economic interdependence, the ability of policy makers to provide a stable environment for business is a key issue. Accordingly, this course develops the principle topics of international economics, including trade theory, the balance of payments, the cause and consequences of exchange rate movements, the flow of capital, currency crises and regional trade issues. The applied topics emphasized will be based on the most pressing current issues.

ESS-100 Environmental Systems I

Variable; Yearly; Credits: 4; N,WK-SP,CTGIS;

This course introduces students to the concept of systems, reviews ecological systems, and then goes on to human systems

as these impact the environment. The course will explore the two forces that are at the core of most environmental impacts (climate change, ozone depletion, air and water pollution, and a loss of biodiversity) will be explored as will the fundamental attributes of agriculture, food, soil, and water. Throughout, the influence of culture, society, ethics, and science on the environmental problems will be discussed. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

CA-270 Infectious Disease & Society

Either Semester; Yearly; Credits: 3; CA,CTGES,WK-SP;

This course focuses primarily on the impact of ten human infectious diseases that have changed the world. Each disease is analyzed from five distinct perspectives: Clinical, Historical, Economic, Artistic, and Public Health. We also discuss genomics aspects of the infective organisms and of their human hosts.

Methods Courses (Choose at least 1):

CM 320 Qualitative Research Methods

; ; Credits: 3; S;

Prerequisites: CM 130 or CM 230 or CM 220 or CM 405

CM-330 Media Analysis

Spring; Yearly; Credits: 3; H,CW,CS;

Designed to explore analytical approaches applied to a variety of media, including advertising, television sitcoms, new shows, propaganda, film, music and architecture, in order to ascertain the persuasive messages inherent in each artifact. By examining the rhetorical choices revealed by each method of criticism, we can better understand the structure of message design, the medium and in a larger sense the cultural values that shape both. Prerequisites: CM132 or CM133.

PY-360 Research Methods and Statistics for Psychology I

Fall & Spring; Yearly; Credits: 4; CW,Q,S;

Part 1 of a 2-part sequence of Research Methods and Statistics for Psychology I and II. This course focuses on becoming a better research producer and a research consumer from a psychological science perspective. Students will learn to think critically about media claims and accurately summarize primary source articles about behavior. Students will learn to use statistical software to accurately describe data. Students will learn to communicate effectively about research through written and oral work and make ethical judgments informed by APA ethical standards. Students will design and execute their own individual research studies. Prerequisite: PY101

PY-361 Research Methods & Stats Psychology II

Fall & Spring; All Years; Credits: 4; S,CW,QS;

This course focuses on becoming a better research producer and a research consumer from a psychological science perspective. Students will learn to think critically about media claims and accurately summarize primary source articles about behavior. Students will learn to use statistical software to accurately describe data. Students will learn to communicate effectively about research through written and oral work and make ethical judgments informed by APA ethical standards. Students will design and execute their own individual research studies.

AN-311 Topics in Anthropology

Spring; Variable; Credits: 3; S;

Occasional offerings in which students and a professor explore an area of specialized interest. Some themes include religion, gender, culture change, cultural ecology, frontiers and insider/outsider. Prerequisites: AN151 or AN254.

ESS-301 Environmental Methods

Either Semester; Yearly; Credits: 3; N;

This course deals with a variety of environmental issues and problems. This includes the causes and the scientific and social backgrounds needed to understand them. It also introduces the student to the roles of scientists and engineers in dealing with them. The course involves both quantitative and qualitative assessments. Prerequisites: ESS100 and 1 year of chemistry or permission of the instructor.

Total credit hours = 45 to 60

Philosophy

PHILOSOPHY CORE

Take the following courses:

PL-105 Introduction to Logic

(OR)

PL-208 Symbolic Logic

PL-450 Senior Thesis

HISTORY COMPONENT

Take the following courses:

PL-205 Ancient Philosophy

PL-275 Modern Philosophy

Take one of the following courses:

PL-245 Chinese Philosophy

PL-304 Existentialism

PL-308 Hegel to Nietzsche

EPISTEMOLOGY & METAPHYSICS COMPONENT

Take two of the following courses:

PL-250 Science and Human Values

PL-260 Philosophy of Science

PL-255 Philosophy of Religion

PL-318 Knowledge, Truth and Skepticism

VALUES STUDIES COMPONENT

Take one of the following courses:

PS-221 American Political Thought

PS-222 Western Political Thought

PL-241 Philosophy of Love

PL-310 Contemporary Political Philosophy

PS-320 Topics Political Philos & Jurisprudence

RU-335 Tolstoy

PL-340 Philosophy of Art

RU-340 Dostoevsky

RL-450 God, Evil & the Holocaust

ETHICS COMPONENT

Take one of the following courses:

PL-106 Introduction to Ethics

PL-230 Business Ethics

PL-235 Ethics of Health Care

PL-265 Environmental Ethics

PL-270 Ethical Theory

Physics

Physics is the science that explores all aspects of the complex in-

teractions of matter and energy, from the forces that bind atoms to those that build bridges. Physicists study and develop concepts that are used in a precise mathematical description of nature and construct experiments to test their ideas. Skills cultivated in a study of Physics include critical reasoning, problem-solving, logical thought, and the ability to clearly communicate the value of this work to both peers and the public. Physics is at the core of a liberal arts education in a technological society.

The Physics Program of Emphasis is structured to allow a student to prepare for graduate school or to seek immediate employment. The first two years of physics consists of a broad introduction to the field, providing basic knowledge and initial analytical skill development. Some laboratory work is included to insure contact with concrete phenomena, while the mathematics sequence offers the necessary problem-solving techniques and discipline required for the upper-level physics courses at Juniata. At the upper level this program trains students in the fundamentals of experimentation and theory.

The program as stated provides minimal preparation for graduate school and many schools would expect more of their entrants. A person starting early in the field and heading clearly toward graduate school needs to develop a program with greater depth. The Department therefore recommends that a serious student take as large a fraction of the elective courses in physics as possible, and, in addition, acquire research experience.

MATHEMATICAL CORE

Take the following courses:

MA-130 Calculus I

MA-160 Linear Algebra

MA-230 Calculus II

MA-235 Calculus III

MA-335 Differential Equations

PHYSICS CORE

Complete one group below:

GROUP 1

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

GROUP 2

PC-204 University Physics

Take the following courses:

PC-203 Intro Physics II
 PC-203L Intro Physics Lab II
 PC-189 Physics Seminar I
 PC-289 Physics Seminar II
 PC-300 Modern Physics Lab
 PC-301 Theoretical Modern Physics
 PC-307 Advanced Physics Lab
 PC-340 Mathematical Methods in Physics
 PC-389 Physics Seminar III
 PC-402 Quantum Mechanics
 PC-410 Mechanics
 PC-489 Physics Seminar IV
 PC-491 Electricity & Magnetism

PHYSICS ELECTIVES

In addition to the required Physics and Mathematics courses, at least two of the following must be taken (graduate schools may expect additional courses):

PC-209 Electronics
 PC-239 Nuclear Threat
 PC-350 Thermodynamics
 PC-430 Optics

Physics Secondary Education

STEM CORE

Take the following courses:

PC-189 Physics Seminar I
 PC-209 Electronics
 PC-289 Physics Seminar II
 PC-300 Modern Physics Lab
 PC-301 Theoretical Modern Physics
 PC-307 Advanced Physics Lab
 PC-320 Engineering Mechanics I: Statics

PC-321 Engineering Mechanics II: Dynamics
 PC-389 Physics Seminar III
 MA-130 Calculus I
 MA-230 Calculus II
 MA-235 Calculus III
 CH-142 Integrated Chemistry Principles I
 CH-143 Integrated Chem Principles I Lab
 CH-144 Integrated Chemistry Principles II
 CH-145 Integrated Chemistry Principles II Lab

ADDITIONAL STEM CORE

Complete one group below:

GROUP 1

PC-202 Intro Physics I
 PC-202L Intro Physics Lab I

GROUP 2

PC-204 University Physics

Take the following courses:

PC-203 Intro Physics II
 PC-203L Intro Physics Lab II

PHYSICS/MATH ELECTIVE

Take one of the following courses:

PC-340 Mathematical Methods in Physics
 PC-350 Thermodynamics
 PC-430 Optics
 PC-491 Electricity & Magnetism

MA-335 Differential Equations

EDUCATION CORE

Complete both groups below:

GROUP 1

Take the following courses:

ED-110 Foundations of Education
 ED-111 Foundations of Education Field Experience
 ED-130 Adolescent Development
 ED-201 Educational Technology
 ED-240 Introduction to Students With Exceptionalities
 ED-314 English Language Learners
 ED-315 ELL Field Experience
 ED-341 Adaptations for Students With Exceptionalities
 ED-420 General Secondary Methods
 ED-423 Secondary Education Field Trip
 ED-450 Student Teaching
 ED-451 Student Teaching Seminar

GROUP 2

Take one of the following courses:

ED-419A Secondary Pre-Student Teaching
 ED-419B Secondary Pre-Student Teaching

There are field experiences in these courses. Students should take only one of these courses per semester. Allow a two-hour block of time for scheduled field experience twice a week.

ED 450 & 451 (Student Teaching and Seminar) may be taken only in the FALL semester of the senior year. Secondary Foreign Language Education majors take ED 450 & 451 in the SPRING semester. ED 450 requires students' full-time participation and no other courses may be taken during this semester. Students must have reliable transportation.

NOTE: It is imperative that students work closely with their advisors to meet all current certification requirements. All students are required to take six credits of English composition (or equivalent) and literature (or the equivalent) and two college level mathematics courses (or the equivalent) prior to being admitted to a certification program. See Section I of the Education Department Student Handbook for explanation of all certification requirements.

Politics

POLITICS CORE

Complete each group below:

American, International:

PS-101 Introduction to American Government
 (AND)

PS-102 Introduction to International Politics

Political Philosophy & Jurisprudence:

PS-221 American Political Thought
 (OR)

PS-222 Western Political Thought

AMERICAN POLITICS

Take one of the following courses: (PS-389, PS-199, PS-299 or PS-399 may fulfill requirement depending on specific topic of course)

PS-125 Citizenship

PS-206 The Culture War

PS-208 Policy and Community

PS-218 Public Policy & Admin.

PS-289 Politics and the Media

PS-313 Congress and Presidency

PS-318 Parties, Elections & Campaigns

PS-330 TPP: Topics in Public Policy

INTERNATIONAL POLITICS

Complete one of the following groups below: (PS-389, PS-199, PS-299 or PS-399 may fulfill requirement depending on specific topic of course.)

GROUP 1

Take one of the following courses:

PS-241 European Politics

PS-243 U.S. Foreign Policy

PS-298 Gender and Health Care

PS-334 Human Rights

PS-335 Law of Nations

PS-340 Topics in International Politics

PS-346 African Politics

GROUP 2

Take the following courses:

PS-235 Migration

PS-236 Eyewitness to Migration in Mexico

GROUP 3

Take the following courses:

PS-249 Senegambia I

PS-250 Senegambia II

POLITICAL PHILOSOPHY & JURISPRUDENCE

Take one of the following courses: (PS-389, PS-199, PS-299 or PS-399 may fulfill requirement depending on specific topic of course.)

PS-209 Sexual Politics

PS-221 American Political Thought

PS-222 Western Political Thought

PS-305 Politics in Film

PS-311 Constitutional Interpretation: Powers of Government

PS-312 Constitutional Interpretation: Civil Rights

PS-320 Topics Political Philos & Jurisprudence

PS-322 Surveillance and the Constitution

COMPARATIVE SOCIETIES AND CULTURE

Complete one of the following groups below: (PS-389, PS-199, PS-299 or PS-399 may fulfill requirement depending on specific topic of course)

GROUP 1

Take one of the following courses:

PS-241 European Politics

PS-291 Mexican Fulbright Special Topics

PS-298 Gender and Health Care

PS-346 African Politics

(OR)

Any short-term/long-term study abroad course or an appropriate course from departments such as History, PACS, Religion, or World Languages upon approval.

GROUP 2

Take the following courses:

PS-235 Migration

PS-236 Eyewitness to Migration in Mexico

GROUP 3

Take the following courses:

PS-249 Senegambia I

PS-250 Senegambia II

INTERPRETING DATA

Take one of the following courses:

DS-110 Intro to Data Science

EB-210 Quantitative Business Analysis

EB-211 Business Statistics

ESS-230 Environmetrics

MA-205 Elementary Statistics

MA-220 Introduction to Probability & Statistics

MA-321 Multivariate Statistics

PY-360 Research Methods and Statistics for Psychology I

SW-214 Integrated Research Methods & Stats I

ECONOMICS

Take one of the following courses:

EB-105 International Economic Issues

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

ESS-305 Environmental Economics

ELECTIVES

Complete any twelve credits from the Politics Department -any course with a PS prefix. (NOTE: Global Climate Change counts as a Politics Department elective)

CAPSTONE

Complete one of the following groups:

SENIOR SEMINAR

PS-499 Senior Seminar

HONORS RESEARCH SERIES

PS-497 Honors Research I

(AND)

PS-498 Honors Research II

IMPORTANT: No more than six credits of Internship can be included in your POE. No more than six credits of Mock Trial can be included in your POE. The same course cannot be used to satisfy more than one POE requirement. A total of 18 credits must be at the 300-level or above.

Professional Writing

CORE COURSES

Take the following courses:

EN-204 English Colloquium

EN-272 Introduction to Professional Writing

EN-308 English Research Methods

EN-376 Writing Across Media

EN-379 Professional Editing

CM-133 Mass Media and Society

IM-110 Principles of Digital Media

WRITING TRACKS (Choose Track A or B)

A: PROFESSIONAL WRITING TRACK

Internship and Seminar/Senior Capstone:

Complete one group below:

GROUP 1

EN-490 English Internship

EN-495 English Internship Research

(OR)

GROUP 2:

EN-496 Senior Research Capstone

Communication, Art, IMA Courses:

Take three of the following courses:

CM-132 Message Analysis

CM-200 Art of Public Speaking

CM-220 Group Communication

CM-290 The Metaverse

CM-300 Professional Presentations

CM-330 Media Analysis

CM-420E Digital Storytelling

AR-104 Design and Color

AR-203 Digital Photography I

AR-204 Digital Art I

IM-360 Digital Video Production

IM-375 Integrated Media Lab I

Professional Writing Courses:

Take three of the following courses:

EN-273 Visual Literacy

EN-299 Special Topics

EN-311 Professional News and Feature Writing

EN-315 Technical Writing

EN-399 Special Topics

Literature Courses:

Take two of the following courses:

EN-120 Forms of Literature

EN-122 Interpreting Pop Literature

EN-162 Women and Literature

EN-170 World Literatures

EN-188 Bad Literature

EN-207 Heaven or Hell on Earth

EN-212 Sports Literature

EN-213 Zombie Nation

EN-215 Boys Will Be Boys

EN-217 Disability in Fiction

EN-236 Dirty Books

EN-237 Constructing Identities

EN-239 Bloody Murder

EN-250 African American Literature

EN-251 Slave Narratives

EN-262 Unhappily Ever After

EN-301 Young Adult Literature

EN-302 The Literature of Social Protest

EN-307 Mythology in Film

EN-312 Literature of Revenge

EN-313 Firing the Canon

EN-341 Shakespearean Drama

EN-385 Queer Literature

EN-388 Heroes and Villains

EN-392 Crossing the Border

B: CREATIVE WRITING TRACK

Senior Capstone:

Take the following course:

EN-496 Senior Research Capstone

Creative Writing Courses:

Take three of the following courses:

EN-303 Poetry Writing

EN-305 Fiction Writing

EN-306 Creative Nonfiction Writing

EN-378 Video Production Writing

TH-263 Playwriting

Professional Writing Course:

Take one of the following courses:

EN-273 Visual Literacy

EN-299 Special Topics

EN-311 Professional News and Feature Writing

EN-315 Technical Writing

EN-399 Special Topics

Literature Courses:

Take three of the following courses:

EN-120 Forms of Literature

EN-122 Interpreting Pop Literature

EN-162 Women and Literature

EN-170 World Literatures

EN-188 Bad Literature

EN-207 Heaven or Hell on Earth

EN-212 Sports Literature

EN-213 Zombie Nation

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EN-251 Slave Narratives

EN-262 Unhappily Ever After

EN-301 Young Adult Literature

EN-302 The Literature of Social Protest

EN-307 Mythology in Film

EN-312 Literature of Revenge

EN-313 Firing the Canon

EN-341 Shakespearean Drama

EN-385 Queer Literature

EN-388 Heroes and Villains

EN-392 Crossing the Border

Psychology

PSYCHOLOGY CORE

Take the following courses:

PY-101 Introduction to Psychology

PY-260 Research Methods & Statistics I

PY-361 Research Methods & Stats Psychology II

PY-415 Capstone in Psychology

BREADTH COMPONENT

Applied & Professional:

Take two of the following courses:

PY-203 Abnormal Psychology

PY-210 Psych Professional Development Seminar

PY-321 Health Psychology

PY-322 Sport Psychology

PY-370 Intro Counseling Theories & Techniques

PY-404 School Psychology

Brain & Behavior:

Take two of the following courses:

PY-238 Biopsychology

PY-270 Cognitive Neuroscience

PY-303 Learning & Conditioning

PY-304 Cognitive Psychology

PY-401 Comparative Psychology

PY-402 Evolutionary Psychology

PY-412 Psychophysiology of Human Performance

Social, Developmental, & Cultural:

Take two of the following courses:

PY-202 Personality

PY-205 Social Psychology

PY-302 Moral Judgment

PY-311 Psychology of Prejudice

PY-350 Developmental Psychology

PY-312 Cultural Psychology

Public Health

BIOLOGY CORE

Complete one of the following groups:

GROUP 1

BI-190 Human Biology

GROUP 2

BI-101 General Biology I

BI-102 General Biology II

PROGRAM OF EMPHASIS CORE

Take the following courses:

BI-290 Nutrition

CM-130 Introduction to Human Communication

EB-223 Principles of Microeconomics

EB-325 Health Economics

PL-235 Ethics of Health Care

PY-101 Introduction to Psychology

PY-321 Health Psychology

PY-216 Public Health

Take one of the following courses:

BI-305 Biostatistics

MA-205 Elementary Statistics

MA-220 Introduction to Probability & Statistics

EB-211 Business Statistics

Take one of the following courses:

CM-230 Interpersonal Communication

CM-132 Message Analysis

Take one of the following courses:

CM-310 Understanding Health Inequity

HS-313 Disease, Medicine & Empire

AN-355 Evolution, Medicine and Health

Take one of the following courses:

EN-271 Public Health Writing

CM-400A Health Communication

Take one of the following courses:

PS-208 Policy and Community

IC-292 Justice and Global Health

Take one of the following courses:

SW-221 The Life Cycle

PY-350 Developmental Psychology

Take the following course:

MBA-561 Healthcare Operations

PRACTICUM/CAPSTONE

Complete one of the following groups below:

Practicum:

Take the following course:

HP-300 Health Navigator Practicum

Internship:

Take the following courses:

HP-490 Intern/Need Paperwork

HP-495 Health Professions Internship Research

Social Studies Secondary Education

SOCIAL STUDIES CORE

Take the following courses:

HS-115 United States to 1877

HS-116 The U.S. Since 1877

HS-152 World Civilizations From 1500

Take one of the following courses:

HS-109 China and Japan to 1800

HS-201 Samurai Legends & Lives

HS-367 Women in Africa

CIVICS & GOVERNMENT CORE

Take the following courses:

PS-101 Introduction to American Government

PS-102 Introduction to International Politics

Take one 200 or 300 level Politics course.

ECONOMICS CORE

Take the following course:

EB-105 International Economic Issues

PSYCHOLOGY CORE

Take the following course:

PY-101 Introduction to Psychology

SOCIOLOGY CORE

Take the following course:

SO-101 Introduction to Sociology

COLLOQUIUM CORE

Take the following course:

HS-293 Sophomore Colloquium

IN-DEPTH SOCIAL STUDIES CORE

Take three "Knowledge in depth courses" from the following list, for a total of 9 credits. One of these classes must be outside the United States.

HS-305 The American Revolution

HS-309 Civil War and Reconstruction

HS-272 Natives & Colonists in Early N. America

HS-322 Women's Lives-Medieval Europe

HS-305 The American Revolution

HS-299 Special Topics

HS-316 WWII in Asia and Pacific

HS-262 North American Environmental History

HS-312 The New South: 1877-1990

HS-325 The U.S. Since 1945

HS-306 People's Republic of China

HS-326 Modern China

HS-367 Women in Africa

HS-327 Modern Japan

HS-313 Disease, Medicine & Empire

HS-324 Gendering the Raj

HS-400 Crimes Against Humanity

HS-314 Medieval Medicine

PS-313 Congress and Presidency

PS-318 Parties, Elections & Campaigns

MATH & ENGLISH CORE

Take 12 credits from Math & English Departments.

EDUCATION CORE

Take the following courses:

ED-111 Foundations of Education Field Experience

ED-130 Adolescent Development

ED-110 Foundations of Education

ED-201 Educational Technology

ED-240 Introduction to Students With Exceptionalities

ED-314 English Language Learners

ED-315 ELL Field Experience

ED-341 Adaptations for Students With Exceptionalities

ED-419A Secondary Pre-Student Teaching

(OR)

ED-419B Secondary Pre-Student Teaching

ED-420 General Secondary Methods

ED-423 Secondary Education Field Trip

ED-450 Student Teaching

ED-451 Student Teaching Seminar

Social Work

Why study Social Work at Juniata College?

As a social work POE, you will gain the satisfaction of participating in a high caliber program that will prepare you to work in a context of social and economic justice to solve and prevent individual and societal problems. Additionally, you will be able to earn the Bachelor of Social Work (BSW) credential in a program that has been accredited by the Council on Social Work Education since 1981. With the BSW credential you earn, you will be able to enjoy enhanced access to career opportunities that begin on higher rungs of the career ladder with higher salaries and rapid advancement.

Social Work POEs enjoy the benefits of rigorous, experiential learning that is integrated throughout the curriculum while experiencing close collaborating with faculty and other students in the social work program. Upon graduation, you will join about 75% of our graduates who pursue Master of Social Work degrees with the benefit of advance standing that often saved 50% of the time and money that graduate school would otherwise require.

Field Placement Manual Program Handbook

SOCIAL WORK CORE

Take the following courses:

SO-101 Introduction to Sociology

PY-101 Introduction to Psychology

BI-190 Human Biology

SO-203 Minority Experiences

SW-214 Integrated Research Methods & Stats I

SW-215 Integrated Research Methods & Stats II

SW-221 The Life Cycle

SW-230 Introduction to Social Work Practice

SW-231 Social Problems & Social Welfare

SW-330 Social Work Practice: Individual, Family & Small Groups Laboratory

SW-331 Social Work Practice: Individual, Family & Small Groups

SW-332 Social Work Practice: Large Groups, Organizations and Communities

SW-333 Social Welfare Policies and Services

SW-490 Social Work: Professional Semester

SW-495 Professional Semester: Research Seminar

NOTE: This POE is constructed under the guidelines established by the Council on Social Work Education. Students seeking the Bachelor of Social Work Credential (BSW) from Juniata College must complete all of this POE.

Social Work students must earn a C- or higher in every course in the POE. Students must have an overall GPA of at least 2.5 and a GPA of at least 2.5 in the Social Work POE in order to enroll in SW 490 and SW 495.

Spanish Education

This POE accurately reflects the requirements for a full Spanish & Hispanic Cultures degree and also fulfills the requirements of the PA Department of Education for K-12 Certification in Spanish.

Spanish Requirements

One academic year of study abroad in a Spanish speaking country. Exceptions will be permitted only under special circumstances with the approval of the Department of World Languages and Cultures.

After returning from their year abroad, students will take a 300 or 400-level course at Juniata offered in Spanish.

Prior to the second semester of the student's senior year, she/he will demonstrate advanced-low oral proficiency in Spanish as measured by an Oral Proficiency Interview (American Council on the Teaching of Foreign Languages).

A minimum of 33 hours in Spanish and Hispanic Cultures beyond the 210 level, including the courses listed below. One course must be designated "CW" (communication). Alternative courses taken at a foreign exchange institution may be substituted for the required courses as long as they are deemed to be comparable to the Juniata offering by the Spanish faculty.

SP-110 Spanish I

SP-120 Spanish II

Note that the placement exam does not fulfill distribution or skills requirements

SP-210 Spanish III

Note that the placement exam does not fulfill distribution or skills requirements

SP-230 Spanish Conversation & Composition

Note that the placement exam does not fulfill distribution or skills requirements

SP-235 Intensive Spanish Grammar

SP-245 Spanish Phonetics & Phonology

--OR--

SP-345 Spanish Phonetics & Phonology

Upper level; see table below for distribution requirement 18 credits require

SP-250 Introduction to Hispanic Literature

--OR--

SP-255 Contemporary Hispanic Short Fiction

SP-265 Contemporary Spain

Students may take either SP 250 or SP 255 as part of core Spanish requirements. SP 255 is Contemporary Hispanic Short Fiction (3 credits; SP 210 prereq.; H, I, CS).

300-400 level 1 civilization, culture or history course

300-400 level 1 Hispanic literature course

300-400 level 1 Hispanic literature course

300-400 level elective

300-400 level elective

300-400 level elective

Minimum total credit hours in Spanish = 33

Minimum total credits in Education = 38

The student must have one advisor who is a member of the World Languages Department Spanish faculty and one advisor designated by the Education Department.

Required Education Courses

ED-110 Foundations of Education
 ED-111 Foundations of Education Field Experience
 Field experience*
 ED-130 Adolescent Development
 ED-201 Educational Technology
 ED-240 Introduction to Students With Exceptionalities
 ED-314 English Language Learners
 ED-315 ELL Field Experience

ED-341 Adaptations for Students With Exceptionalities
 Field experience*
 ED-398 Methods for Foreign Language Education
 Field experience*

ED-450 Student Teaching
 Spring Semester Senior Year**
 ED-451 Student Teaching Seminar
 Spring Semester Senior Year**

Total credit hours = 38 (25 upper level)
 Total certification credit hours = 71

*There are field experiences in these courses. Students should take only one of these courses per semester. Allow a two-hour block of time for scheduled field experience twice a week.

**ED 450 & 451 (Student Teaching and Seminar) may be taken only in the SPRING semester of the senior year. ED 450 requires students' full-time participation and no other courses may be taken during this semester without the education advisors approval. Students must have reliable transportation.

NOTE: It is imperative that students work closely with their advisors to meet all current certification requirements. All students are required to take six credits of English composition (or equivalent) and literature (or the equivalent) and two college level mathematics courses (or the equivalent) prior to being admitted to a certification program. See Section I of the Education Department Student Handbook for explanation of all certification requirements.

Additional Certification Requirements

2 math courses

1 English literature course
 1 year of study abroad in the target language
 GPA of 3.0 for certification program and student teaching
 Grade of C or higher in all courses required for certification
 Satisfactory rating in all practica
 Passing scores on all required PRAXIS exams
 Possible Schedule for the POE

Year	Fall Semester	Credits	Spring Semester	Credits
Freshman	College Writing Seminar		4	SP 230 3
	Information Access	1	ED 11 & ED 111	4
	ED 130	3	ED 240	3
	SP 210	3	1 math course (N)/ and/or 1 English Lit course	3-6
	One math course (Q) course on an elective	3	4	possibly an F or N
Sophomore		15	16	
	SP 235	3	SP 250	3
	SP 265	3	ED 314	1
	ED 341	4	ED 201	3
			1 math course (N) or 1 English Lit course	3
Junior			Additional Spanish courses and/or electives	6-9
		F or N course	3	
		16	13-16	
	Study Abroad		Study Abroad	
	1 Advanced Civ course	3	1 Advanced Lit course	3
Senior	2 Advanced Spanish electives	6	2 Advanced SP electives	6
	F (if not taken before); otherwise an elective	3	F (if not taken earlier); otherwise an elective	3
	IC/CA requirement waived for 1 year of study abroad			
		12		12

Senior	ED 315	1	ED 450	14
	ED 398	4	ED 451	1
	SP 245 or SP 345 3			
	1 Advanced Lit course		3	
	Electives 3-6			
	14-17		15	

Spanish/Hispanic Cultures

The Spanish/Hispanic Cultures designated program of emphasis enables students to build functional proficiency in Spanish and to expand their knowledge and understanding of Hispanic cultures. This program will prepare students for graduate work in Spanish-related fields as well as for a variety of domestic and international employment opportunities when pursued in conjunction with interdisciplinary study in such fields as business, criminal justice, education, environmental science/studies, health and allied health professions, international relations, international studies, peace and conflict studies, pre-law, and social work.

Requirements

A minimum of one semester and preferably one year of study abroad in a Spanish speaking country. Exceptions will be permitted only under special circumstances with the approval of the Department of World Languages and Culture.

After returning from their semester or year abroad, students will take a 300 or 400-level course at Juniata offered in Spanish.

Prior to the second semester of the student's senior year, she/he will demonstrate intermediate-high oral proficiency in Spanish as measured by an Oral Proficiency Interview (American Council on the Teaching of Foreign Languages).

A minimum of 33 hours in Spanish and Hispanic Cultures beyond the 210 level, including the courses listed below. One course must be designated "CW" (communication). Alternative courses taken at a foreign exchange institution may be substituted as long as they are deemed to be comparable to the Juniata offering by the Spanish faculty.

SP-110 Spanish I

Fall & Spring; Yearly; 4 Credits; H, I;

Emphasizes fundamentals of grammar, pronunciation, and language production. The development of skills in oral comprehension, speaking, writing and reading are stressed. Note: Students receive H or I credit provided that they have not taken more than two years of the language at the secondary school level.

Students will only receive H or I distribution if they have not taken more than two years of Spanish at the secondary level.

SP-120 Spanish II

Fall & Spring; Yearly; 4 Credits; H, I, CS, SWGLS;

Spanish 120 is the second part of a three-semester introductory sequence. Its primary goals are to enable students to build their proficiency and attain a broader understanding of Hispanic cultures. Emphasis is placed on the use of the target language in the classroom and the study of culturally authentic materials. Students will achieve greater accuracy with basic language structures. Pre-req: SP110 or placement test.

SP-210 Spanish III

Fall & Spring; Yearly; 3 Credits; H, I, CS, SWGLS;

Spanish 210 is the third part of a three-semester introductory sequence. Its primary goals are to enable students to build their proficiency and attain a broader understanding of Hispanic cultures. Emphasis is on the use of the target language and the study of culturally authentic materials. Students will achieve greater accuracy with basic language structures. Pre-req: SP-120 or placement results.

SP 110, 120, 210 are waived if students place out of them, but no academic credit will be awarded

SP-230 Spanish Conversation & Composition

Spring; Yearly; 3 Credits; H, I, CW, CS, SWGLS;

SP230 focuses on continued learning of Spanish through the practice of speaking and writing. Students discuss short films, readings, and topics of interest from the Hispanic world. Through practice in and outside of class and study of grammatical structures and vocabulary, students will improve their reading and listening comprehension and their speaking and writing competence. Prerequisite: SP210 or placement test results.

SP-235 Intensive Spanish Grammar

Fall; Variable; 3 Credits; H, I;

This course serves to reinforce the fundamental grammar that students have studied previously and to delve more deeply into certain topics that often prove to be challenging for native English speakers of Spanish. Topics typically of this course include; identifying the building blocks of sentences; identifying verb classes and studying how that information determines the way we construct sentences; analyzing the Spanish pronominal system including, subject and object clitic pronouns; reviewing and expanding upon the use of subordinate clauses introduced in SP210. Prerequisites: SP210.

SP-245 Spanish Phonetics & Phonology

Fall; Yearly; 3 Credits; H, I, CS;

This course serves as an introduction to the phonetics and phonology of Spanish. The goals of the course include providing students with a theoretical and practical understanding of the system of Spanish sounds, including dialectal variations, as well as strengthening students' Spanish speech in the direction of more native like pronunciation. Prerequisite: SP210.

SP-230 Spanish Conversation & Composition

Spring; Yearly; 3 Credits; H, I, CW, CS, SWGLS;

SP230 focuses on continued learning of Spanish through the practice of speaking and writing. Students discuss short films, readings, and topics of interest from the Hispanic world. Through practice in and outside of class and study of grammatical structures and vocabulary, students will improve their reading and listening comprehension and their speaking and writing competence. Prerequisite: SP210 or placement test results.

--OR--

SP-255 Contemporary Hispanic Short Fiction

Fall; Variable; 3 Credits; H, I, CS;

An intensive introduction to reading and analyzing twentieth-century Spanish and Spanish American short narrative. Study of the literary texts enables students to develop a better understanding of and appreciation for Hispanic cultures while continuing to build their Spanish language proficiency. Prerequisite: SP210.

WL-201 Language in Motion

Fall & Spring; Yearly; 1 Credit; H, I, CS, SW-LE;

In this course, international students, study-abroad returnees, students with other international experiences, heritage speakers, and/or upper-level language students expand their knowledge of language and culture, process their own intercultural and language-learning experiences, and enrich local school classrooms. In addition to learning about teaching language and culture and the school context, students develop individual projects for presentation in school classrooms.

Other Requirements

Two Spanish or Spanish American civilization, culture, or history courses (at least one of which must be at the 300/400 level)

Two Spanish or Spanish American literature courses (at the 300/400 level)

Three electives which focus on topics of Spanish language or Hispanic cultures (at the 300/400 level)*

*By way of example only, courses taken on such topics as U.S. trade with Mexico, translation, business Spanish, social violence in Latin America, and Hispanic art and architecture would be considered acceptable electives provided that they were offered at the 300/400 level.

Required credit hours = 45 (including SP 110, 120, and 210 if students have placed out of these introductory-sequence courses)

Total POE credit hours should not exceed 63

Studio Arts

CORE COURSES

Take one of the following courses:

AR-103 Beginning Drawing

AR-200 Beginning Painting

Take the following course:

AR-104 Design and Color

Take one of the following courses:

AR-203 Digital Photography I

AR-204 Digital Art I

Take one of the following courses:

AR-215 Ceramic Sculpture

AR-117 Intro to Sculpture

Take one of the following courses:

AH-108 Cross Cultural Art 1

AH-113 Cross-Cultural Art 2

Take one of the following courses:

AH-329 Impressionism to Abstract Expressionism

AH-330 Why Is That Art? 1945-Present

ADVANCED ART HISTORY

Take 3-9 credits from the following courses:

AH-295 Methods in Art History

AH-301 African-American Art: Slavery to Social Justice

AH-309 Expanding the Renaissance

AH-310 Global Baroque Art & Architecture

AH-311 Art of Ancient Peoples

AH-312 Medieval Art: Really a Dark Age?

AH-313 Northern Renaissance Art

AR-315 Women in Art

AH-316 Art & Revolution: 19th Century Europe

AR-322 Modern Architecture

AR-340 Philosophy of Art

MM-390 Museum Studies

MM-392 Museum Education

MM-394 Curatorial Studies

CAPSTONE EXPERIENCE

Take 3-6 credits from the following courses:

AR-451 Capstone in 2D Studio Art I

AR-452 Capstone in 2D Studio Art II

AR-453 Capstone in 3D Studio Art I

AR-454 Capstone in 3D Studio Art II

Choose one of the following tracks:

2-D TRACK

Take 18-21 credits from the following courses:

AR-200 Beginning Painting

AR-203 Digital Photography I

AR-204 Digital Art I

AR-208 Beginning Photography

AR-299 Special Topic

AR-300 Intermediate Painting

AR-303 Intermediate Drawing

AR-400 Advanced Painting

* 2D Studio Art Students are required to take 12 credits of 300-400 level courses in at least two of the following areas: Drawing, Painting, and/or Photography.

3-D TRACK

Take 18-21 credits from the following courses:

AR-117 Intro to Sculpture

AR-125 Explorations in Clay

AR-211 The Art of Bookmaking

AR-225 Wheel Throwing

AR-235 Empty Bowls Practicum

AR-305 Intermediate Ceramics

AR-405 Advanced Ceramics

* 3D Studio Art Students are required to take 12 credits of 300-400 level courses.

MIXED MEDIA TRACK

Take 18-21 credits from the following courses:

AR-117 Intro to Sculpture

AR-125 Explorations in Clay

AR-200 Beginning Painting

AR-203 Digital Photography I

AR-204 Digital Art I

AR-208 Beginning Photography

AR-211 The Art of Bookmaking

AR-225 Wheel Throwing

AR-235 Empty Bowls Practicum

AR-299 Special Topic

AR-300 Intermediate Painting

AR-303 Intermediate Drawing

AR-305 Intermediate Ceramics

AR-400 Advanced Painting

AR-405 Advanced Ceramics

*At least 12 of these must be advanced courses (at the 300-400 level).

Wildlife Conservation

The Wildlife Conservation POE is designed to provide students with both the practical skills and the theoretical knowledge necessary to work as a professional in the field of wildlife conservation, using a multi-disciplinary approach to the study of wild animals and their habitats. Students have the option of selecting from a variety of courses offered at Juniata, including wildlife biology and management, zoology, botany, chemistry, and mathematics.

The specific requirements of the Wildlife Conservation POE are listed below. Substitutions require permission of the wildlife advisors.

REQUIRED COURSES

Take the following courses:

ESS-100 Environmental Systems I

ESS-110 Environmental Systems II

BI-101 General Biology I

BI-300 General Ecology

BI-301 General Ecology Lab

BI-360 Vertebrate Zoology

BI-361 Vertebrate Zoology Lab

ESS-325 Conservation Biology

ESS-224 Wildlife Mgmt

ESS-330 Geographical Information Systems

ESS-400 Senior Capstone I

(OR)

ESS-401 Senior Capstone II

PLANT BIOLOGY

Take one of the following courses: (BI-327, ESS-340 or BI-325/BI-326)

BI-327 Botany

ESS-340 Forestry

BI-325 Plant Ecology

(AND)

BI-326 Plant Ecology Lab

CHEMISTRY REQUIREMENT

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

RESOURCE POLICY/MANAGEMENT

Take one of the following courses:

ESS-324 Natural Resource Management

ESS-337 Environmental Law

MATHEMATICS/STATISTICS

Take the following course:

ESS-230 Environmetrics

Take one of the following courses:

BI-305 Biostatistics

ESS-335 Quantitative Ecology

MA-130 Calculus I

MA-205 Elementary Statistics

Raystown Field Station: The Raystown Field Station provides students with a unique setting to study and do research. Residential programs are available at the station each semester. The curriculum offered during the spring semester is tailored to fit the needs of the Wildlife Conservation POE. Some possible schedules to incorporate the field station semester into your POE are listed here - for students entering as freshmen on an even year, and for students entering as freshmen on an odd year. The Station also offers a summer program that focuses on providing students with specialized zoology courses needed to certify as an associate wildlife biologist from The Wildlife Society. Details on the course offerings at the Station can be accessed at the official website of the Raystown Field Station.

Wildlife Certification: The Wildlife Society, the professional organization for wildlife educators, managers and others who work to study, conserve, and manage wildlife and its habitat. The Wildlife Society recognizes professional credentials through a certification process, and the details of this process can be accessed at the offi-

cial Wildlife Society website.

Juniata College offers all of the courses required for certification as an Associate Wildlife Biologist. Since the requirements for certification are more extensive than the Wildlife Conservation POE, it would require more planning to complete in 4 years. To help with the planning, here is a possible schedule for certification.

SECONDARY EMPHASES (MINORS)

Accounting Secondary Emphasis

The secondary emphasis is for use by students with POEs in other departments. We do not allow a student with a POE in ABE to use one of our own secondary emphases, e.g. Accounting w/secondary emphasis in Finance.

The secondary emphasis is shown on the POE forms using the words "w/secondary emphasis in" (e.g., Communications w/secondary emphasis in Marketing). We suggest that using "and" to connect two disciplines - e.g., Communications and Marketing - implies that the student is a "dual major" and has completed the designated POE in Marketing and sufficient work in the other discipline that a faculty member of that department would approve the POE.

Note that prerequisites for 300/400 courses will NOT automatically be waived.

Take the following courses:

EB-131 Financial Accounting

EB-222 Principles of Macroeconomics

EB-232 Intermediate Accounting I

EB-236 Managerial Accounting

Take one of the following courses:

EB-334 Advanced Accounting

EB-335 Auditing

EB-336 Federal Taxation: Individuals

EB-337 Cost Accounting

Art History Secondary Emphasis

ART HISTORY CORE

Take five of the following courses:

AR-110 Survey of Western Art

AH-108 Cross Cultural Art 1

AH-113 Cross-Cultural Art 2

AH-301 African-American Art: Slavery to Social Justice

AH-302 Reframing American Art

AH-309 Expanding the Renaissance

AH-310 Global Baroque Art & Architecture

AH-311 Art of Ancient Peoples

AH-312 Medieval Art: Really a Dark Age?

AH-313 Northern Renaissance Art

AH-316 Art & Revolution: 19th Century Europe

AH-329 Impressionism to Abstract Expressionism

AH-330 Why Is That Art? 1945-Present

AH-492 Senior Thesis in Art History

AR-315 Women in Art

Astronomy Secondary Emphasis

The Astronomy Secondary Emphasis at Juniata College will:

provide a rigorous yet broad introduction to astronomy, where the theoretical background is complemented by hands-on, observational experience.

be situated within the liberal arts tradition of Juniata College, and include an exploration of the role of astronomy in culture and the opportunity to study abroad.

offer a pathway to coursework and experiences that will appeal to and add value for students who plan to attend graduate school in astronomy or astrophysics.

be available to students in all disciplines through a sequence of courses that have less mathematical rigor and few prerequisites, as well as the opportunity to fulfill general education credits while completing the secondary emphasis.

A student who has completed the Astronomy Secondary Emphasis at Juniata College will be able to:

apply critical thinking and quantitative reasoning skills to problems in astronomy.

clearly articulate scientific ideas both orally and in writing.

explain the apparent motion of celestial objects as seen from Earth.

connect the laws of physics to specific astronomical processes and phenomena.

use telescopes, cameras, and spectrometers to observe, analyze, and interpret the light received from celestial objects.

understand the role of astronomy in human cultures, past and present.

INTRO PHYSICS I

Complete one of the following options below:

Physics Fall Term Option 1:

PC-200 General Physics I

PC-200L General Physics Lab I

Physics Fall Term Option 2:

PC-201 General Physics II

PC-201L General Physics Lab II

Physics Fall Term Option 3:

PC-204 University Physics

INTRO PHYSICS II

Complete one of the following options below:

Physics Spring Term Option 1:

PC-201 General Physics II

PC-201L General Physics Lab II

Physics Spring Term Option 2:

PC-203 Intro Physics II

PC-203L Intro Physics Lab II

REQUIRED CORE

Complete both groups below:

GROUP 1:

AS-160 Measuring the Universe

GROUP 2:

AS-260 Observational Astronomy

ELECTIVES

Complete the following groups:

GROUP 1

AS-390 Astrophysics

CA-227 Archaeoastronomy

AS-350 Astronomy Research I

AS-450 Astronomy Research II

GROUP 2

AS-300 Chile: Southern Stars I

AS-301 Chile: Southern Stars II

GROUP 3

CONN-310A Revolution! Part 1

CONN-310B Revolution! Part 2

**Courses in Geology, Biology, Chemistry, Data Science, and possibly other disciplines may be approved as electives if they have a substantial astronomy content or are closely related to astronomy topics.

Bioethics Secondary Emphasis

The Bioethics Secondary Emphasis will prepare students in Biology, Health Professions, and related areas, to resolve perplexing yet inescapable ethical dilemmas through the acquisition of essential conceptual and ethical frameworks.

REQUIRED CORE COURSES

Take one of the following courses:

PL-105 Introduction to Logic

PL-208 Symbolic Logic

Take one of the following courses:

PL-235 Ethics of Health Care

IC-292 Justice and Global Health

Take one of the following courses:

PL-250 Science and Human Values

PL-260 Philosophy of Science

ELECTIVES

Complete 7 credits from the following courses:

CA-270 Infectious Disease & Society

HS-313 Disease, Medicine & Empire

HS-314 Medieval Medicine

IC-203 Genomics, Ethics & Society

PL-205 Ancient Philosophy

PL-270 Ethical Theory

PL-304 Existentialism

RU-275 Medicine and Literature

Biology Secondary Emphasis

CORE COURSES

Take the following courses:

BI-101 General Biology I

BI-102 General Biology II

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

CH-232 Organic Chemistry I

CH-233 Organic Chemistry I Lab

UPPER-LEVEL COURSES

Complete 2 courses from the BI - Biology department at the 300/400 level. One of the upper-level courses must have a lab.

NOTE: These courses cannot be included in a student's POE.

Chemistry

Chemistry

INTRODUCTORY COURSES

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

FOUNDATIONAL COURSES

Take the following courses:

CH-222 Inorganic Chemistry

CH-232 Organic Chemistry I

CH-233 Organic Chemistry I Lab

CH-247 Bioanalytical Chemistry

CH-252 Analytical Chemistry

CH-312 Biochemistry

CH-352 Physical Chemistry I

CH-353 Physical Chemistry Laboratory

IN-DEPTH COURSES

Take nine credits from the following courses:

CH-332 Organic Chemistry II

CH-354 Physical Chemistry II

CH-372 Instrumental Methods

CH-401 Advanced Organic Chemistry

CH-406 Advanced Inorganic Chemistry

CH-418 Advanced Biochemistry

CH-399 Special Topics

CH-499 Chemistry Special Topics

**Requirements for ACS-certified degree: Take one additional in-depth course

and a minimum of 400 total laboratory hours.**

ADVANCED LABORATORY EXPERIENCE

Take the following course:

CH-385 Advanced Chemistry Lab

OTHER CHEMISTRY COURSES

Take the following courses:

CH-210 Chemistry and Biochemistry Seminar

CH-489 Chemistry & Biochemistry Capstone

SUPPORT COURSES

Take the following course:

MA-130 Calculus I

Take one of the following combinations:

PC-200 General Physics I

PC-200L General Physics Lab I

(OR)

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

**Requirements for ACS-Certified Degree

All Intro Courses (8 Credits)

All Foundational Courses with Lab (20 Credits)

4 In-Depth Courses (at least 12 Credits)

2 Semesters of Calculus (MA-130, MA-230; 8 Credits)

2 Semesters of Physics with Lab (PC-200/202, PC-201/203, associated labs; 8 Credits)

Advanced Lab (2 Credits)

Other CH Courses (CH-210, Capstone; 4 Credits)

at least 400 hours of lab

Chemistry Secondary Emphasis

INTRODUCTORY COURSES

Take the following courses:

CH-142 Integrated Chemistry Principles I

CH-143 Integrated Chem Principles I Lab

CH-144 Integrated Chemistry Principles II

CH-145 Integrated Chemistry Principles II Lab

FOUNDATIONAL COURSES

Take the following courses:

CH-222 Inorganic Chemistry

CH-232 Organic Chemistry I

CH-233 Organic Chemistry I Lab

CH-247 Bioanalytical Chemistry

CH-252 Analytical Chemistry

CH-312 Biochemistry

CH-352 Physical Chemistry I

CH-353 Physical Chemistry Laboratory

IN-DEPTH COURSES

Take nine credits from the following courses:

CH-332 Organic Chemistry II

CH-354 Physical Chemistry II

CH-372 Instrumental Methods

CH-401 Advanced Organic Chemistry

CH-406 Advanced Inorganic Chemistry

CH-418 Advanced Biochemistry

CH-399 Special Topics

CH-499 Chemistry Special Topics

**Requirements for ACS-certified degree: Take one additional in-depth course

and a minimum of 400 total laboratory hours.**

ADVANCED LABORATORY EXPERIENCE

Take the following course:

CH-385 Advanced Chemistry Lab

OTHER CHEMISTRY COURSES

Take the following courses:

CH-210 Chemistry and Biochemistry Seminar

CH-489 Chemistry & Biochemistry Capstone

SUPPORT COURSES

Take the following course:

MA-130 Calculus I

Take one of the following combinations:

PC-200 General Physics I

PC-200L General Physics Lab I

(OR)

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

**Requirements for ACS-Certified Degree

All Intro Courses (8 Credits)

All Foundational Courses with Lab (20 Credits)

4 In-Depth Courses (at least 12 Credits)

2 Semesters of Calculus (MA-130, MA-230; 8 Credits)

2 Semesters of Physics with Lab (PC-200/202, PC-201/203, associated labs; 8 Credits)

Advanced Lab (2 Credits)

Other CH Courses (CH-210, Capstone; 4 Credits)

at least 400 hours of lab

Communication Secondary Emphasis

COMMUNICATION CORE

Take any 12 credits of CM-Communication courses.

UPPER-LEVEL CORE

Take at least 6 credits of 300 or 400 level CM-Communication courses.

Computer Programming Secondary Emphasis

To claim knowledge of computer programming, one should have experience in two or more high level languages and also have gained a fundamental understanding of the machine and its organization. In addition, those intending to program in any realistic environment will need a background in larger software systems as covered in Software Design or Database Management Systems.

CORE COURSES

Take the following courses:

CS-110 Computer Science I

CS-220 Computer Organization

CS-240 Computer Science II

MA-116 Discrete Structures

PROGRAMMING COURSES

Take one of the following courses:

CS-255F FORTRAN Programming

CS-255B COBOL Programming

CS-255C C++ Programming

CS-255P Perl Programming

CS-255R Ruby Programming

CS-255Y Python Programming

UPPER-LEVEL COMPUTER SCIENCE COURSE

Take one 300 or 400 level CS - Computer Science course.

Computer Science Secondary Emphasis

To claim a solid background in computer science (as opposed to computer programming), a student needs software design experience, an understanding of the computer hardware and a background in the mathematical basis of computer science. The study of algorithms and computational structures provide a more complete understanding of the science itself.

CORE COURSES

Take the following courses:

CS-110 Computer Science I

CS-240 Computer Science II

CS-220 Computer Organization

CS-480 Computer Science Seminar I

MA-116 Discrete Structures

Take one of the following courses:

CS-315 Algorithms and Analysis

CS-330 Computer Graphics

Take one of the following courses:

CS-300 Software Engineering

CS-370 Database Management Systems

Take one upper-level CS-Computer Science elective.

Criminal Justice Secondary Emphasis

Criminal Justice Secondary Emphasis

Overview

Course Listings

Program Faculty

Outcomes

REQUIRED CORE

Take the following courses:

SO-101 Introduction to Sociology

SO-260 Introduction to Criminal Justice

SO-302 Social Deviance and Criminology

ELECTIVES

Take 9 credits from the following courses:

PS-190A Mock Trial

PS-190B Mock Trial

EN-239 Bloody Murder

HS-400 Crimes Against Humanity

PACS-105 Introduction to Conflict Resolution

PACS-110 Introduction to Peace & Conflict Studies

PL-106 Introduction to Ethics

PS-218 Public Policy & Admin.

PS-312 Constitutional Interpretation: Civil Rights

PS-334 Human Rights

PY-203 Abnormal Psychology

PY-205 Social Psychology

PY-410 Aggression and Prejudice

SO-203 Minority Experiences

SO-244 Drugs and Society

SO-320 Wealth, Power, & Society

SO-362 Juvenile Justice

Home

Departments

Data Science

Data Science Secondary Emphasis

Data Science Secondary Emphasis

DATA SCIENCE CORE

Take the following courses:

DS-110 Intro to Data Science

CS-110 Computer Science I

STATISTICS

Take one of the following courses:

MA-220 Introduction to Probability & Statistics

MA-205 Elementary Statistics

EB-211 Business Statistics

ESS-230 Environmetrics

SW-215 Integrated Research Methods & Stats II

MA-321 Multivariate Statistics

BI-305 Biostatistics

ESS-309 Econometrics

PY-361 Research Methods & Stats Psychology II

ADDITIONAL COURSES

Take twelve credits from the following courses:

CS-370 Database Management Systems

IM-242 Info Visualization

DS-352 Machine Learning

DS-375 Big Data

MA-321 Multivariate Statistics

DS-210 Data Acquisition

MA-325 Statistical Consulting

Economics Secondary Emphasis

The secondary emphasis is for use by students with POEs in other departments. We do not allow a student with a POE in ABE to use one of our own secondary emphases, e.g. Accounting w/secondary emphasis in Finance.

The secondary emphasis is shown on the POE forms using the words "w/secondary emphasis in" (e.g., Communications w/secondary emphasis in Marketing). We suggest that using "and" to connect two disciplines - e.g., Communications and Marketing - implies that the student is a "dual major" and has completed the designated POE in Marketing and sufficient work in the other discipline that a faculty member of that department would approve the POE.

Note that prerequisites for 300/400 courses will NOT automatically be waived.

Economics Core:

Take the following courses:

EB-105 International Economic Issues

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

Introductory Statistics:

Take one of the following courses:

EB-211 Business Statistics

MA-220 Introduction to Probability & Statistics

MA-205 Elementary Statistics

Upper-Level Core:

Take two of the following courses:

EB-320 Intermediate Microeconomics

EB-321 Intermediate Macroeconomics

EB-325 Health Economics

EB-381 International Political Economy

EB-463 Financial Markets & Institutions

EB-465 Financial Theory and Analysis

Education Secondary Emphasis

EDUCATION CORE

Take the following courses:

ED-110 Foundations of Education

ED-111 Foundations of Education Field Experience

ED-240 Introduction to Students With Exceptionalities

Complete one of the following groups below:

GROUP 1

ED-120 Child Development

ED-121 Child Development Lab

GROUP 2

ED-130 Adolescent Development

Take 8 additional credits from the ED- Education Department.

*Faculty in the Education Department support students who may want to work with youth in some capacity but outside of the public school system. Students may want to pursue a Secondary Emphasis in Education to complement their Program of Emphasis. For example, students with a Program of Emphasis in Psychology could include a Secondary Emphasis in Education entitled Psychology with a Secondary Emphasis in Education.

*In addition to the core of Education courses listed above, students must select a number of other Education courses for a minimum of 18 credits total.

*Students must choose an advisor in the Education Department to serve as their general advisor to assist them in choosing appropriate courses to complete the requirements for a Secondary Emphasis in Education. Students must meet all course prerequisites or obtain permission by the instructor to register for Education courses.

English Secondary Emphasis

ENGLISH REQUIREMENTS

In consultation with an English professor, complete 18 credits from the English Department; 6 credits must be at the 300 level or above.

Entrepreneurship Secondary Emphasis

The secondary emphasis is for use by students with POEs in other departments. We do not allow a student with a POE in ABE to use one of our own secondary emphases, e.g. Accounting w/secondary emphasis in Finance.

The secondary emphasis is shown on the POE forms using the words "w/secondary emphasis in" (e.g., Communications w/sec-

ondary emphasis in Marketing). We suggest that using “and” to connect two disciplines - e.g., Communications and Marketing - implies that the student is a “dual major” and has completed the designated POE in Marketing and sufficient work in the other discipline that a faculty member of that department would approve the POE.

Note that prerequisites for 300/400 courses will NOT automatically be waived.

Take the following courses:

EB-100 Introduction to Management

EB-102 Introduction to Entrepreneurship

EB-131 Financial Accounting

EB-207 New Venture Creation

EB-307 New Venture Start-Ups

Environmental Studies Secondary Emphasis

CORE COURSES

Complete each of the following groups below:

GROUP 1

Take the following courses:

ESS-100 Environmental Systems I

ESS-310 Water Resources I

GROUP 2

Take one of the following courses:

ESS-324 Natural Resource Management

ESS-325 Conservation Biology

GROUP 3

Take one of the following courses:

ESS-335 Quantitative Ecology

ESS-337 Environmental Law

GROUP 4

Take two courses from the options below:

BI-101 General Biology I

HS-262 North American Environmental History

GL-100A Environmental Geology

GL-210 Minerals

ESS-324 Natural Resource Management

ESS-325 Conservation Biology

ESS-335 Quantitative Ecology

ESS-337 Environmental Law

BI-300 General Ecology

(AND)

BI-301 General Ecology Lab

ESS-400 Senior Capstone I

(OR)

ESS-401 Senior Capstone II

Finance Secondary Emphasis

The secondary emphasis is for use by students with POEs in other departments. We do not allow a student with a POE in ABE to use one of our own secondary emphases, e.g. Accounting w/secondary emphasis in Finance.

The secondary emphasis is shown on the POE forms using the words “w/secondary emphasis in” (e.g., Communications w/secondary emphasis in Marketing). We suggest that using “and” to connect two disciplines - e.g., Communications and Marketing - implies that the student is a “dual major” and has completed the designated POE in Marketing and sufficient work in the other discipline that a faculty member of that department would approve the POE.

Note that prerequisites for 300/400 courses will NOT automatically be waived.

Take the following courses:

EB-100 Introduction to Management

EB-131 Financial Accounting

EB-222 Principles of Macroeconomics

EB-236 Managerial Accounting

Take two of the following courses:

EB-361 Financial Management I

EB-362 Financial Management II

EB-363 Health Care Financial Management

EB-463 Financial Markets & Institutions

EB-465 Financial Theory and Analysis

Fine Arts Secondary Emphasis

CORE COURSES

Take a minimum of 18 credits of AR and AH courses. At least 6 credits must be at the 300 level or above.

French Secondary Emphasis

Requirements: Minimum of 15 credits beyond the third semester level, selected with advisors.

Geology Secondary Emphasis

GEOLOGY CORE

Take the following courses:

GL-100A Environmental Geology

GL-204 History of Earth

Take an additional eleven Geology (GL) credits at the 200 level or higher.

History Secondary Emphasis

HISTORY CORE

Take five courses from the History Department, two of which must be at the level 300:

(NOTE: One of the five courses must cover history outside of the US and Europe)

HS-104 European History to 1550

HS-109 China and Japan to 1800

HS-115 United States to 1877

HS-116 The U.S. Since 1877

HS-152 World Civilizations From 1500

HS-199 Special Topics

HS-200 The Great War

HS-201 Samurai Legends & Lives

HS-204 Australia/New Zealand

HS-213 History of Ireland

HS-215 Rome: Republic to Empire

HS-217 The Lowcountry and the Gullah Culture

HS-221 Gender and Sexuality

HS-262 North American Environmental History

HS-266 History of South Africa

HS-268 Sword & Scimitar: Islam & West 500-1300

HS-272 Natives & Colonists in Early N. America

HS-277 History of Food

HS-293 Sophomore Colloquium

HS-305 The American Revolution

HS-306 People's Republic of China

HS-309 Civil War and Reconstruction

HS-312 The New South: 1877-1990

HS-313 Disease, Medicine & Empire

HS-314 Medieval Medicine

HS-316 WWII in Asia and Pacific

HS-320 Interpreting Terrorism

HS-322 Women's Lives-Medieval Europe

HS-324 Gendering the Raj

HS-325 The U.S. Since 1945

HS-326 Modern China

HS-327 Modern Japan

HS-367 Women in Africa

Human Resource Management Secondary Emphasis

The secondary emphasis is for use by students with POEs in other departments. We do not allow a student with a POE in ABE to use one of our own secondary emphases, e.g. Accounting w/secondary emphasis in Finance.

The secondary emphasis is shown on the POE forms using the

words "w/secondary emphasis in" (e.g., Communications w/secondary emphasis in Marketing). We suggest that using "and" to connect two disciplines - e.g., Communications and Marketing - implies that the student is a "dual major" and has completed the designated POE in Marketing and sufficient work in the other discipline that a faculty member of that department would approve the POE.

Note that prerequisites for 300/400 courses will NOT automatically be waived.

Take the following courses:

EB-100 Introduction to Management

EB-131 Financial Accounting

EB-202 Behavioral Analysis of Organizations

EB-371 Human Resource Management.

EB-379 Bargaining and Conflict Management

Take one of the following courses:

PY-101 Introduction to Psychology

PY-205 Social Psychology

PY-303 Learning & Conditioning

PY-304 Cognitive Psychology

CM-130 Introduction to Human Communication

CM-230 Interpersonal Communication

CM-340 Intercultural Communication

CM-405A Women, Work & Identity

PACS-105 Introduction to Conflict Resolution

PACS-205 Conflict Intervention

PACS-305 Gender and Conflict

Secondary Emphasis in International Business

Given the unique requirements built into the designated POE in International Business, a secondary emphasis should only be used in rare instances wherein the student has met most of the requirements for the designated, but somehow missed "something." For example, student did not go abroad. Please seek the advice of an ABE faculty member.

Secondary Emphasis in Investing

Take the following courses:

EB-100 Introduction to Management

EB-140 Investing: Your Future

EB-222 Principles of Macroeconomics

EB-131 Financial Accounting

EB-340 Investing Analysis

EB-361 Financial Management I

EB-440 Portfolio Management I

EB-463 Financial Markets & Institutions

Secondary Emphasis in Management

Take the following courses:

EB-105 International Economic Issues

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

Take the following courses:

EB-100 Introduction to Management

EB-131 Financial Accounting

EB-202 Behavioral Analysis of Organizations

Take two EB courses at the 300/400 level: (except EB-490/EB-495)

Secondary Emphasis in Marketing

Take the following courses:

EB-100 Introduction to Management

EB-131 Financial Accounting

EB-351 Marketing Management

EB-355 Marketing Strategies

EB-358 Marketing Research and Analytics

EB-359 Advertising & Promo Mgmt

Information Technology Secondary Emphasis

CORE COURSES

Take the following courses:

CM-200 Art of Public Speaking

CS-110 Computer Science I

IT-110 Principles of Information Technology

IT-210 Information Technology Systems

IT-307 Project Management

IT-308 Innovations for Industry I

THE METAVERSE

Take one of the following courses:

IT-290 The Metaverse

CM-290 The Metaverse

BUSINESS ELECTIVE

Take one course from the Business - EB Department.

Integrated Media Arts Secondary Emphasis

IMA COURSES

Take the following courses:

IM-110 Principles of Digital Media

CM-133 Mass Media and Society

AR-104 Design and Color

Take one of the following courses:

IM-375 Integrated Media Lab I

IM-376 Integrated Media Lab II

ELECTIVE

Take one of the following courses:

AR-103 Beginning Drawing

AR-200 Beginning Painting

AR-203 Digital Photography I

AR-204 Digital Art I

AR-117 Intro to Sculpture

AR-225 Wheel Throwing

CM-420E Digital Storytelling

CM-330 Media Analysis

UPPER-LEVEL ELECTIVE

Take one course at the 300 level or above:

CM-300 Professional Presentations

CM-330 Media Analysis

CM-420A Hollywood Films

CM-420E Digital Storytelling

CM-499 Special Topics

IM-310 Social Media

IT-341 Web Design

IT-342 Web Programming

IM-360 Digital Video Production

IM-361 Video Production II

IM-375 Integrated Media Lab I

IM-376 Integrated Media Lab II

EN-307 Mythology in Film

EN-399 Special Topics

EB-351 Marketing Management

EB-355 Marketing Strategies

EB-358 Marketing Research and Analytics

EB-359 Advertising & Promo Mgmt

EN-376 Writing Across Media

EN-378 Video Production Writing

International Business Secondary Emphasis

Given the unique requirements built into the designated POE in International Business, a secondary emphasis should only be used in rare instances wherein the student has met most of the requirements for the designated, but somehow missed "something." For example, student did not go abroad. Please seek the advice of an ABE faculty member.

International Studies Secondary Emphasis

CORE COURSES

Take the following courses:

EB-105 International Economic Issues

PS-102 Introduction to International Politics

Take one of the following courses:

IS-104 Ideas & Power in the Modern World

PACS-105 Introduction to Conflict Resolution

Take one of the following courses:

IS-200 Politics & Culture of Modernization

PACS-110 Introduction to Peace & Conflict Studies

Take one of the following courses:

HS-320 Interpreting Terrorism

EB-381 International Political Economy

PS-334 Human Rights

Take two foreign language courses at the 200, 300 or 400 level or Study Abroad for at least one semester.

Investing Secondary Emphasis

Take the following courses:

EB-100 Introduction to Management

EB-140 Investing: Your Future

EB-222 Principles of Macroeconomics

EB-131 Financial Accounting

EB-340 Investing Analysis

EB-361 Financial Management I

EB-440 Portfolio Management I

EB-463 Financial Markets & Institutions

Secondary Emphasis in Management

Take the following courses:

EB-105 International Economic Issues

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

Take the following courses:

EB-100 Introduction to Management

EB-131 Financial Accounting

EB-202 Behavioral Analysis of Organizations

Take two EB courses at the 300/400 level: (except EB-490/EB-495)

Secondary Emphasis in Marketing

Take the following courses:

EB-100 Introduction to Management

EB-131 Financial Accounting

EB-351 Marketing Management

EB-355 Marketing Strategies

EB-358 Marketing Research and Analytics

EB-359 Advertising & Promo Mgmt

Linguistics Secondary Emphasis

Effective Fall 2016

Course Number	Description	Credits
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I. Core Courses (9 credits, 3 credits each):

EN 200	History of the Language	3
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EN 300	Modern Theories of Grammar	3
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WL 303	Sociolinguistics	3
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II. Electives (a minimum of 6 credits chosen from the following list):

BI 450 OR BI 450CW	Neurobiology	3 or 4
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CM 130	Intro to Human Communication	3
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CM 320	Qualitative Research Methods	3
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CM 450B	Nonverbal Communication	3
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CS 110	Computer Science I	3
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AND CS 255P	Perl Programming	2
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CS 362	Languages and Translation	4
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ED 312	Language and the Brain	3
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AND ED 313	Language and the Brain Lab	1
MA 220	Intro to Probability and Statistics	4
OR ND.SS 214	Statistics for Social Sciences	4
PL 208/MA 208	Symbolic Logic	3
PL 321	Philosophy of Language & Communication	4
PY 304	Cognitive Psychology	4
PY 339	Psychology of Language	3
SP 245/345	Spanish Phonetics and Phonology	3

III. Language (a minimum of 3 credits chosen from the following list-must meet prerequisites)

CN 210	Chinese III	3
FR 210	French III	3
GR 210	Intermediate German	3
RU 210	Intermediate Russian	3
SP 210	Spanish III	3
SP 235	Intensive Spanish Grammar	3
SP 430	Advanced Spanish Grammar	3

*For students who have already demonstrated proficiency in one language at the 210 level, there are additional options for completing the language requirement: taking a 110 -or 120-level course in one of the languages not closely related to the language in which the student already has the 210-level proficiency or taking ED 300S, ED 301, AND ED 302: Sign Language I, II, and III. The student should see his or her adviser or any member of the Linguistics Committee for details.

Equivalent courses in other languages taken abroad or at another institution, as a special topics course or independent study, or in an online or hybrid course may also apply. Such a course may be chosen with the approval of the student's advisors and the Linguistics Committee

Optional Capstone:

Seniors may choose to incorporate linguistics into their capstone experience, such as a thesis or project, in their POE departments. Alternatively, a senior project in linguistics could be done as an independent study with a member or members of the Linguistics Committee. Neither is required for the Secondary Emphasis in Lin-

guistics.

Advising:

A student with a Secondary Emphasis in Linguistics is strongly encouraged to have one of the members of the Linguistics Committee as one of his or her advisors.

More information:

Contact any member of the Linguistics Committee:

Deb Roney, chair

Michael Beamer

Kathleen Biddle

Lynn Cockett

Holly Hayer

Loren Rhodes

Xinli Wang

Management Secondary Emphasis

Take the following courses:

EB-105 International Economic Issues

EB-222 Principles of Macroeconomics

EB-223 Principles of Microeconomics

Take the following courses:

EB-100 Introduction to Management

EB-131 Financial Accounting

EB-202 Behavioral Analysis of Organizations

Take two EB courses at the 300/400 level: (except EB-490/EB-495)

Marketing Secondary Emphasis

Take the following courses:

EB-100 Introduction to Management

EB-131 Financial Accounting

EB-351 Marketing Management

EB-355 Marketing Strategies

EB-358 Marketing Research and Analytics

EB-359 Advertising & Promo Mgmt

Mathematics Secondary Emphasis

To claim a solid foundation in mathematics, a student should be acquainted with an appropriate variety of techniques and applications areas. This certainly includes a good background in calculus, and an exposure to matrices, probability, statistics, and discrete mathematics. In addition, one should pursue a more in-depth understanding of at least one area of mathematics and also deal more explicitly with the theoretical nature of the subject.

MATHEMATICS COURSES

Take the following courses:

MA-130 Calculus I

MA-230 Calculus II

MA-235 Calculus III

MA-160 Linear Algebra

MA-220 Introduction to Probability & Statistics

Complete one of the following:

MA-210 Foundations of Mathematics

(OR) Upper level Mathematics course (except MA-480 and MA-355).

Take one 300 or 400 level Mathematics course (except MA-480 and MA-355).

Medical Humanities Secondary Emphasis

CORE COURSES

Take five of the following courses:

FYS-102 First-Year Seminar

EN-217 Disability in Fiction

HS-314 Medieval Medicine

HS-313 Disease, Medicine & Empire

CA-270 Infectious Disease & Society

PL-106 Introduction to Ethics

PL-235 Ethics of Health Care

IC-203 Genomics, Ethics & Society

CM-310 Understanding Health Inequity

Museum Studies Secondary Emphasis

MUSEUM STUDIES CORE

Take one of the following courses:

AH-108 Cross Cultural Art 1

AH-113 Cross-Cultural Art 2

Take the following courses:

MM-390 Museum Studies

MM-392 Museum Education

MM-394 Curatorial Studies

MM-480 Museum Practicum I

MM-481 Museum Practicum II

Peace and Conflict Studies Secondary Emphasis

PEACE AND CONFLICT STUDIES CORE

Take the following courses:

PACS-105 Introduction to Conflict Resolution

PACS-110 Introduction to Peace & Conflict Studies

ADDITIONAL COURSES

Complete twelve additional credits from PACS department; six of which must be at the 300/400 level.

NOTE: Students must be able to defend the coherence and logic of their choices. Students should have a PACS professor as an advisor.

Philosophy Secondary Emphasis

Philosophy Secondary Emphasis

There is also a defined course of study for the addition of Philosophy as a Secondary Emphasis to supplement a student's POE in

another program. In order to qualify for this secondary emphasis, a student must complete 18 credit hours in philosophy (5 or 6 philosophy courses). More specific, among these 18 credits must be:

At least TWO advance philosophy courses from:

Course Number	Title	Credits	Dist.	Skills
PL 304	Existentialism	4	H	CW
PL 305	Modern Philosophy	4	H	CA, CW
PL 308	Hegel to Nietzsche	4	H	
PL 310	Contemporary Political Philosophy	4	H	H, S CW
PL 312	Twentieth Century Philosophy	4	H	
PL 318	Knowledge, Truth and Skepticism	4	H	
PL 321	Philosophy of Language & Communication	4	H	
PL 335	Advanced Ethical Theories	4	H	
PL 340	Philosophy of Art	3	H, F	

ONE logic course from:

Course Number	Title	Credits	Dist.	Skills
PL 105	Introduction to Logic	3	H	
PL 208	Symbolic Logic	3	H, N	

At least ONE course from the list of history of philosophy courses:

Course Number	Title	Credits	Dist.	Skills
PL 205	Ancient Philosophy	4	H	
PL 305	Modern Philosophy	4	H	CA
PL 308	From Hegel to Nietzsche	4	H	
PL 312	Twentieth Century Philosophy	4	H	

Notes:

(a) There are currently TWO philosophy courses (PL 245 - Chinese Philosophy, PL 305 - Modern Philosophy) with CA designations which can fulfill the CA requirement. Any of these courses may double count to fulfill both secondary emphasis in Philosophy and Cultural Analysis requirements. That means if you take any one of these courses as your CA course, it will count as one philosophy course.

(b) Also, a course could double count to fulfill multiple requirements, such as PL 305 counts as an advance philosophy course AND a history of philosophy course (it also count as your CA course).

Physics Secondary Emphasis

MATHEMATICS CORE

MA-130 Calculus I

MA-230 Calculus II

MA-235 Calculus III

PHYSICS CORE I

Complete one group below:

GROUP 1

PC-202 Intro Physics I

PC-202L Intro Physics Lab I

GROUP 2

PC-204 University Physics

PHYSICS CORE II

PC-203 Intro Physics II

PC-203L Intro Physics Lab II

PC-300 Modern Physics Lab

PC-301 Theoretical Modern Physics

PHYSICS ELECTIVE

Take one course from the Physics Department.

UPPER-LEVEL PHYSICS

Take one course from the Physics Department at the 300/400 level.

(NOTE: The Department may waive the Modern Physics Lab requirement if the student is taking P-Chem Lab as a part of the

Chemistry POE, and they are taking two or more additional Physics courses at the 300/400 level beyond PC-301).

Politics Secondary Emphasis

POLITICS COURSES

Take the following courses:

PS-101 Introduction to American Government

PS-102 Introduction to International Politics

Take one of the following courses:

PS-221 American Political Thought

PS-222 Western Political Thought

Take 12 additional credits from the Politics Department; at least three of these credits must be at the 300-level or above.

NOTE: No more than six credits of Internship can be included in your secondary emphasis. No more than six credits of Mock Trial can be included in your secondary emphasis. Global Climate Change counts as a Politics Department course.

Psychology Secondary Emphasis

PSYCHOLOGY COURSES

Take a minimum of eighteen credit hours in Psychology with at least 6 credit hours at the 300/400 level.

GROUP 1:

Take 12 credits from the following courses:

PY-101 Introduction to Psychology

PY-260 Research Methods & Statistics I

PY-361 Research Methods & Stats Psychology II

PY-415 Capstone in Psychology

PY-210 Psych Professional Development Seminar

PY-238 Biopsychology

PY-202 Personality

PY-203 Abnormal Psychology

PY-270 Cognitive Neuroscience

PY-205 Social Psychology

PY-404 School Psychology

PY-303 Learning & Conditioning

PY-302 Moral Judgment

PY-321 Health Psychology

PY-304 Cognitive Psychology

PY-311 Psychology of Prejudice

PY-322 Sport Psychology

PY-399 Special Topics

PY-401 Comparative Psychology

PY-350 Developmental Psychology

PY-402 Evolutionary Psychology

PY-312 Cultural Psychology

PY-412 Psychophysiology of Human Performance

GROUP 2:

Take 6 credits from the following courses (at the 300/400 level) :

PY-361 Research Methods & Stats Psychology II

PY-415 Capstone in Psychology

PY-404 School Psychology

PY-303 Learning & Conditioning

PY-302 Moral Judgment

PY-321 Health Psychology

PY-304 Cognitive Psychology

PY-311 Psychology of Prejudice

PY-322 Sport Psychology

PY-401 Comparative Psychology

PY-350 Developmental Psychology

PY-399 Special Topics

PY-402 Evolutionary Psychology

PY-312 Cultural Psychology

PY-412 Psychophysiology of Human Performance

Religious Studies Secondary Emphasis

RELIGIOUS STUDIES CORE

Take the following courses:

RL-110 What Is Religion

RL-123 Global Religions Today

Take one of the following courses:

RL-131 Old Testament As History and Literature

RL-132 New Testament As History and Literature

Take 9 credits from the Religion Department; 6 credits must be at the 300 or 400 level.

Spanish Secondary Emphasis

Spanish Secondary Emphasis

Requirements: Minimum of 15 credits beyond the third semester level, selected with advisors.

Studio Art Secondary Emphasis

CORE COURSES

Complete one of the following courses:

AH-108 Cross Cultural Art 1

AH-113 Cross-Cultural Art 2

Take 15 credits from AR - Art department. At least 6 credits must be at the 300 level or above.

Theatre Arts Secondary Emphasis

CORE COURSES

Take the following courses:

TH-221 Acting I

TH-263 Playwriting

TH-325 Acting II

TH-405 Directing

VISUAL AND PERFORMING ARTS COURSES

Take 6 credits from the following courses:

2-D Track:

AR-200 Beginning Painting

AR-203 Digital Photography I

AR-204 Digital Art I

AR-208 Beginning Photography

AR-298 Mixed Media Animation

AR-300 Intermediate Painting

AR-303 Intermediate Drawing

AR-400 Advanced Painting

3-D Track:

AR-117 Intro to Sculpture

AR-125 Explorations in Clay

AR-211 The Art of Bookmaking

AR-215 Ceramic Sculpture

AR-225 Wheel Throwing

AR-235 Empty Bowls Practicum

AR-305 Intermediate Ceramics

AR-398 3D Computer Animation

AR-405 Advanced Ceramics

4-D Track:

CONN-234 Ways of Well-being

TH-161 Play/Making

TH-123 Jedi Academy

IC-225 Theatre of the Observed

Women and Gender Studies Secondary Emphasis

WOMEN AND GENDER STUDIES CORE

Take the following course:

PACS-305 Gender and Conflict

ADDITIONAL COURSES

Take five of the following courses:

AR-315 Women in Art

CM-340 Intercultural Communication

CM-330 Media Analysis

EN-162 Women and Literature

EN-191A Unlock Your Voice

FR-279 Sexuality and Literature

HS-322 Women's Lives-Medieval Europe

RL-321 Women in the Bible

SO-204 American Families

SW-221 The Life Cycle

CERTIFICATES***Certificate In Digital Humanities***

Courses

Archeology

AN-255 Applied Archaeology

Fine Arts

AR-104 Design and Color

AR-203 Digital Photography I

AR-204 Digital Art I

Communication

CM-420E Digital Storytelling

English

EN-374 Ethical Game Design

EN-376 Writing Across Media

EN-378 Video Production Writing

History

HS-309 Civil War and Reconstruction

HS-367 Women in Africa

Integrated Media Arts

IM-110 Principles of Digital Media

IM-242 Info Visualization

IM-250 Digital Audio Production

IM-360 Digital Video Production

IM-361 Video Production II

Music

MU-111 Composition

Non-Departmental

ND-271 3D Scanning, Design, and Printing for Non-specialists

Religious Studies

RL-210 Sacred Landscapes

Genomics Certificate Program

The Genomics Leadership Initiative at Juniata College was been funded by the Howard Hughes Medical Institute and National Science Foundation. The initiative achieved its goal by developing a genomics certificate program, a leadership module, and student summer research experiences.

Genomics Certificate Program

Comprised of seven courses, the genomics certificate addresses both the science and the broader ethical, legal and social implications (ELSI) surrounding progress and discoveries in the field of genomics. The ethical, legal and social issues surrounding advances in genomics provides a strong focus for practicing a breadth of knowledge and skills; the understanding of the scientific foundation of genomics provides the focus for developing an interdisciplinary base and cross disciplinary understanding of the life sciences in an era of "big data". To help support this part of the program the grant has also funded an ELSI faculty development workshop, a seminar series, stipends for faculty developing new or revised classes, and stipends for faculty to formally assess the learning gains of students as a result of programmatic activities.

What is a Certificate?

In general, an undergraduate certificate provides an interdisciplinary curriculum that is not available within any single academic unit. A certificate offers the possibility of a more cohesive general education experience oriented around a theme and taught by faculty who work together as a group on an ongoing basis and have common inter-departmental learning objectives and assessments. The awarding of the certificate is noted on the student's transcript.

Who is this Certificate For?

Students intending to pursue careers in biological research and medicine are the primary target. However, students interested in careers in public policy, public health, law, and business will gain by developing similar competencies.

Why Should a Student Get this Certificate?

As cost of a human genome approaches \$1,000, appreciation of both the science and the ethical, legal, and societal implications of genomics has become an increasingly pressing issue. Design of the certificate was based on recommendations from a joint document between the Howard Hughes Medical Institute (HHMI) and Association of American Medical Colleges (AAMC) entitled, "Scientific Foundations for Future Physicians." This report emphasized the importance of integrative scientific approaches, scientific reasoning, intellectual curiosity, communication and decision making skills, adaptability, ethical principles, and understanding of patients as individuals and in a social context. HHMI has funded Juniata College to implement this certificate program.

Description and Goals of a Certificate in Genomics, Ethics, and Society

Comprised of seven courses, the certificate addresses both the science and the broader ethical, legal and social implications (ELSI) surrounding progress and discoveries in the field of genomics. No area of modern biology provides a more appropriate focus for

combining the humanities and sciences than the ethical, social and legal implications (ELSI) of the human genome project and the evolution of the field of personalized medicine. The subject cannot be completely addressed without the input of specialists working across disciplinary boundaries. The ethical, legal and social issues surrounding advances in genomics provide a strong focus for practicing a breadth of knowledge and skills while understanding the acts of judgment and social contexts involved in the development and application of scientific knowledge; the understanding of the scientific foundation of genomics provides the focus for developing an interdisciplinary base and cross disciplinary understanding of the life sciences in an era of "big data".

Learning Objectives:

Students who attain genomics certification will be able to:

Describe the basic concepts and principles of genomics.

Explain the scope of genomics from genes to society.

Integrate knowledge of the chemical, physical, mathematical and computational bases of genomics.

Explain the importance of the place of genomics in the human effort to understand natural phenomena, including its history and social impact.

Be able to make and justify ethical judgments about genomics research and its uses in medical practice and elsewhere.

Use the skills and interdisciplinary perspectives of the liberal arts in understanding trends in genomics and communicating them to academic peers and others.

Apply the process of science to questions in genomics.

Demonstrate an in-depth knowledge of a selected field in genomics.

Progress into a leadership role, working with experts and non-experts, with an awareness of the likely results of one's actions and an understanding of how results might differ in different settings and different cultures.

Requirements

Core Courses: All students pursuing a genomics certificate must take four core courses required for a genomics certificate. Download the Genome Certificate Sheet to organize and plan your course of study.

If your POE is outside of Biology or Chemistry: As with most of the ELSI options, Human Biology, Intro Prob and Stat, and Computer Science I - Genomics have few to no prerequisites.

To see the most updated times and prereqs for each class, use colleague self service as follows: Navigate to Academics and then Advanced Search. Select the term of interest. Scroll to the bottom of the page and select "Course Type". Select "Certificate: Genomics Ethics & Society."

1) Genomics, Ethics and Society (IC 203; Fall MW 1-2:40pm; prereq: 3rd or 4th year; CONN) A team-taught course that lays the foundations for interdisciplinary work on the ethical and social dimensions of genomics .

2) A course covering basic molecular biology, genetics, and genomics:

Biology II BI 106 (no longer offered)

General Biology I; BI 101

Talk Nerdy To Me BI 399; Spring; N division class; schedule TBA, prereq permission of instructor

Human Biology BI 190; Not for biology majors; Fall; N division class

3) At least three credits of statistics:

Biostatistics with lab BI 305, Fall; N and QS division class; T/TH 10:30 to 11:40AM; Lab F 1:00 to 2:45PM or 3 to 4:45; BI102 or ESS100 prereq

Environmetrics ESS 230; Fall N division and QS class; Sophomore standing and permission

Introductory Probability and Statistics MA 220, Spring MWF 10:30AM 11:40A.; QS and N division class, prereq MA130.

4) One course covering informatics and analysis of large data sets:

Medical Genomics. BI480. Summer Online.

Bioinformatics Fundamentals Spring, BIN 400. T/Th 10:00 AM - 11:40 AM. Prereqs: BI101, BI 102. Junior or Senior Standing.

Computer Science 110 (Fall or Spring)

Unix CS 255U, 1 credit Fall, prereq Computer Science 110 or Instructors Permission; AND

Perl CS255P, 2 credits, Spring, prereq Computer Science 110 or Instructors Permission, sophomore standing, self study

OR

Python CS255Y, 2 credits, Spring, prereq Computer Science 110 or Instructors Permission, sophomore standing, self study

Environmental Genomics BI400. Summer Online.

Molecular Microbiology (BI331) and lab (BI332), Fall (not offered regularly), N division class, prereqs Gen Bio I and II and Instructors Permission (Lamendella).

BI489 Biological Research that is computationally intensive (3 credits, possibly with Buonaccorsi, Lamendella, Dries, or Keeney, by Instructors Permission)

Biological Sciences Research Methods (Buonaccorsi or Keeney sections ONLY) Even Spring Semesters (Buonaccorsi), N division class; schedule TBA; or (BI 101 and BI 102; Gen Bio I and II) or Instructors Permission Odd Spring Semesters (confirm with Keeney)

Information Visualization IM 242, Fall odd years; MWF noon; prereqs IT110 or IT111 or CS110 or IM 110 or Instructors Permission (also CTDH)

Electives: In addition to the core courses, students must take at least three elective courses related to ELSI genomic themes:

Ethics of Healthcare. PL235. Spring. MWF at 9:00, SW-ER, also part of the Bioethics secondary emphasis.

Medieval Medicine: Health and Disease in the Middle Ages History HS 314. Spring. H division class. TTH 10:30AM 11:45A

Science and Human Values Philosophy PL 250, WK-HT. H division class.

Philosophy of Science. PL 260 Fall. H division and WK class. Check with Prof. Wade Roberts for offerings.

Moral Judgment Psychology PY302 OL, Winter online. Summer online, S division class.

Leadership in the 21st Century. Business EB 375, Springs online (3 cr, S division class) AND Executive Leadership Business EB-120, 1 cr, Spring (Not offered Spring 2021)

Infectious Disease and Society, CA 270. WK-SP. Spring (in person), Winter and Summer terms (OL).

Science and Society, CONN 202, 3 cr. Fall. Winter and Summer terms (OL). Check with Prof. Jones for offerings.

Disease, Medicine, and Empire, History 313, Spring (not offered Spring 2022). May count as a CA, or an H or I division class. MW 01:00PM 02:15P.

Management Plan

Students must submit a notice of intent to complete the certificate to Prof. Vince Buonaccorsi before senior year. The certificate may be approved by Vince Buonaccorsi, Jill Keeney, Jay Hosler, Jim Roney, or Kim Roth (the certificate advisory board). Courses other than those listed above may also apply if approved by this group.

Download the Genome Certificate Sheet to organize and plan your course of study.

Genomics Certificate Program Pre-Assessment

Students interested in pursuing a genomics certificate should follow the Genomics Certificate Notice of Interest link and send your name to the program director. This does not obligate you to joining the program but it does put you on our radar so that we can assist you if you choose to go through the certificate process.

Geographic Information Systems (GIS) Certificate Program

Geographic Information System (GIS) and spatial reasoning are a mainstay knowledge base for working professionals in environmental science, resource management, local and regional planning, disease monitoring and evaluation, real estate, military planning, and social science research. The Juniata GIS certificate program is offered jointly by the Environmental Science and Studies and the Computer Science and Information Technology Departments. We have two tracks to prepare a student for a career in any of the GIS fields. The first track has a focus on Environmental Science. This track has more courses in field methods in GIS and spatial analysis. The second track has a focus on Information Technology. This track has more courses in programming and data mining. The certificate is open to students in all departments as well as Juniata alumni.

Requirements for GIS (18-21 credits)

We have designed this certificate based on looking at successful programs. We have tried to match core strengths of other successful programs while differentiating ourselves based on our key strengths. The cores courses include

Introduction to geographic information systems

Topics in remote sensing and spatial analysis

Quantitative methods

The ways we differentiate ourselves is through our strength in field data collection techniques for environmental sciences. We include tracks in Environmental Science and in Information Technology. The requirements of the certification are as follows:

QUANTITATIVE FIELD INTRO

This section requires the student to have a quantitative introductory class in their field. The requirement of this course is that it has a lab or quantitative section where Excel or other spreadsheet or database program is used to compile and represent or analyze data.

Complete one course from either track below:

Environmental Track:

ESS-100 Environmental Systems I

IT Track:

IT-111 Principles of IT Science

CS-110 Computer Science I

STATISTICS or DATA ANALYSIS CORE

Complete one course from either track below:

Environmental Track:

ESS-230 Environmetrics

BI-305 Biostatistics

IT Track:

IM-241 Info. Discovery and Architecture

GEOGRAPHICAL INFORMATION CORE

Required Core:

Take the following courses:

ESS-330 Geographical Information Systems

ESS-337 Environmental Law

Complete one course from either track below:

IT Track:

CS-370 Database Management Systems

Environmental Track:

GL-240 Geological Field Methods I

ESS-328 Limnology

ESS-340 Forestry

ESS-345 Ichthyology

FIELD DATA COLLECTION

This section is intended to have students exposed to the vagaries of field data collection. It is preferred that students collect spatially explicit data using GPS technologies or other spatially explicit survey methods. Database manage or other courses that explore the process of data collection will also meet this requirement.

Complete one course from either track below:

IT Track:

CS-370 Database Management Systems

Environmental Track:

ESS-340 Forestry

ESS-345 Ichthyology

ESS-350 Field Research Methods

GL-240 Geological Field Methods I

CAPSTONE OR PROJECT REQUIREMENT

Complete one of the following tracks below:

IT Track Option 1:

IT-307 Project Management

IT-308 Innovations for Industry I

IT-380 Innovations for Industry II

IT Track Option 2:

IT-307 Project Management

IT-308 Innovations for Industry I

IT-480 Innovations for Industry III

Environmental Track:

ESS-410 Water Resources II

Academic Honors

DEAN'S LIST

At the end of each semester, the Provost announces the Dean's List. Matriculated students are named to the Dean's List when:

1. they have taken at least 12 graded credits,
2. they achieve an average of 3.60 or better, and
3. they have no unsatisfactory grades.

A notation of Dean's List achievement appears on the transcript.

Juniata students studying abroad will not be eligible for the Dean's List. Students who are partner degree visiting students and visiting non degree students are also not eligible for this notation.

GRADUATION HONORS

Honors are conferred at commencement ceremonies according to the following grade point average scale:

summa cum laude	3.90 - 4.0
magna cum laude	3.75 - 3.89
cum laude	3.60 - 3.74

Students who are partner degree visiting students are not eligible for graduation honors.

HONOR SOCIETIES

The Juniata College Honor Society is a group of junior and senior students elected on the basis of outstanding academic achievement and leadership ability. Other honor and honorary societies on campus also recognize students for their accomplishments: Alpha Phi Sigma (criminal justice), Beta Beta Beta (biology), Lambda Pi Eta (speech communication), The Masque (theatre), Omicron Delta Kappa (leadership), Phi Alpha (social work), Phi Alpha Theta (history), Pi Lambda Theta (education), Pi Sigma Alpha (politics), Psi Chi (psychology), Rho Epsilon Chapter of Gamma Sigma Epsilon (chemistry), Sigma Gamma Epsilon (geology), Sigma Iota Rho (international studies), Sigma Pi Sigma (physics), Sigma Tau Delta (English) and Tau Pi Phi (accounting, business and economics).

DISTINCTION IN THE POE

To achieve distinction in the POE, a student must fulfill all graduation requirements and complete a senior experience that integrates several areas of their POE. This requirement can be fulfilled in many ways. Some possibilities might include: an original independent creative project that involves significant academic work, such as laboratory research resulting in a significant report; a major paper on a well-defined project; a body of artistic work equivalent to a major exhibition or performance; or field experience (e.g., student teaching or certain internships) culminating in a significant report. The project must be evaluated and judged worthy of distinction in the POE by two faculty members, at least one of whom must be from the home department. The project must also be presented in a forum open to all interested parties, either at Juniata or to an outside audience such as the National Conference on Undergraduate Research (NCUR).

Departments and programs will be free to establish further requirements for receiving distinction in the POE, including higher GPA requirements.

Departments shall forward the names and forms of successful candidates for distinction to the Registrar's Office.

Special Juniata Programs

COOPERATIVE PROGRAMS

Health Professions Affiliations

A distinctive feature of the Juniata College Health Professions Program is a broad array of formal affiliation agreements. These agreements enable qualified students to gain early acceptance or accelerated admission into professional school programs.

Several types of programs are included, designated below by the number of years a student spends at Juniata College, followed by the number of years spent at the affiliated institution. The 3 + _ programs allow students who matriculate at Juniata for three years and complete all the Juniata College general degree requirements, to earn degrees from both Juniata College and the corresponding professional institution.

The “_” designation indicates a variable number of years at the professional school, depending on the specialty chosen.

See the specific career track on the Health Professions website for details.

<https://www.juniata.edu/academics/departments/healthprofessions/>

Biotechnology

3 + 1 B.S. program with Jefferson School of Health Professions

3 + 2 B.S./M.S. entry-level master's program with Jefferson School of Health Professions

Chiropractic

3 + 3 B.S./D.C. program with the New York Chiropractic College

Cytotechnology

3 + 1 B.S. program with Jefferson School of Health Professions

3 + 2 B.S./M.S. Entry-level Master's Program with Jefferson School of Health Professions

Dentistry

3 + 4 B.S./D.M.D. program with Temple University School of Dentistry

4 + 4 B.S./D.M.D. Early Acceptance Program with the LECOM School of Dental Medicine

Medical Technology

3 + 1 program with Jefferson School of Health Professions

3+2 B.S./M.S. Entry-level Master's program with Jefferson School of Health Professions

Medicine

4 + 4 B.S./D.O. Early Assurance Program with Lake Erie College of Osteopathic Medicine

4 + 4 B.S./M.D. Early Assurance Program with Temple University School of Medicine and Geisinger Health System

Nursing

3 + __ B.S./M.N./M.S.N./D.N.P. (Doctor of Nursing Practice) OR D.N.P./Ph.D. programs with the Frances Payne Bolton School of Nursing at Case Western Re-

serve University

Occupational Therapy

3 + 2 B.S./M.S.O.T. program with Jefferson School of Health Professions

Optometry

3 + 4 B.S./O.D. program with the Pennsylvania College of Optometry at Salus University

Pharmacy

3 + 3 and 3 + 4 Accelerated OR 4 + 3 and 4 + 4 Early Acceptance B.S./Pharm.D. programs with Lake Erie College of Osteopathic Medicine School of Pharmacy

Physical Therapy

4 + 3 B.S./D.P.T. Early Acceptance program with Drexel University

3 + 3 B.S./D.P.T. program with Jefferson School of Health Professions

4 + 3 B.S./D.P.T. Early Acceptance program with Widener University

Podiatric Medicine

4 + 4 B.S./D.P.M. Early Assurance program with Temple University School of Podiatric Medicine

Radiologic Sciences

4 +1 B.S. and M.S. options in a variety of specialties with Jefferson School of Health Professions

Engineering: 3+2 Programs

Advisor: Professor White

Juniata participates with Columbia University, The Pennsylvania State University, and Washington University in St. Louis, in cooperative programs for training in engineering. The purpose of such arrangements is to produce engineers who are educated in the fullest sense, as well as competent specialists in a particular field.

The student takes three years of undergraduate work at Juniata. Upon recommendations of the adviser and fulfillment of the transfer requirements, including the required GPA, he or she then transfers to the engineering institution for two additional years of engineering

study. Upon successful completion of the five years, the student receives two degrees; a bachelor's of science degree from Juniata and an engineering degree from Columbia University, The Pennsylvania State University, or Washington University in St Louis.

Law: 3+3 Program

Advisor: Professor Barlow

The pre-legal student should seek a broad undergraduate experience in the liberal arts. Students interested in law should have a thorough command of English, an extensive background in research methods, skill and experience in developing logical arguments, and a critical understanding of the human institutions and values with which the law deals. They are strongly encouraged to develop proficiency in another language and to study abroad. Juniata also offers courses in conflict resolution, a growing field in the legal profession. Although students may develop any Program of Emphasis which suits their particular talents and interests, the experience of others indicates that English, history, politics, American studies, and economics are the most common programs of students entering law schools.

In addition to helping students through the process of applying to law school, the prelaw adviser assists with course selections that will fulfill their POE goals while providing them with appropriate skills for the study of law. In addition, he helps to provide students with resources to prepare for the LSAT and helps to arrange internships that allow students to explore the legal field while they are in college. Students should plan to take the LSAT in the fall of the senior year and apply to law school by mid-January.

A special arrangement with the Duquesne University School of Law allows students to apply for admission to the Law School after three years of undergraduate study, allowing them to complete their degrees in six rather than seven years. Students must have an LSAT score that puts them at or above the 75th percentile, and a GPA of 3.36 or better.

DEGREE COMPLETION PROGRAMS

The Degree Completion programs are designed for Juniata College students who are not GPA deficient and wish to complete the requirements to earn a Juniata degree.

How you can reapply:

The readmission process requires the students contact the Dean of Students Office for readmission for degree seeking status. These students do not enter through Enrollment admissions as they are not first time degree seeking students. Once they have been cleared by the Dean of Students records for any behavioral sanctions, they are forwarded to the Registrar's Office for re-admittance.

Walker Program:

Students who have not completed their Walker requirements and/or who are returning full-time to complete their degree:

- Regular admissions will include a statement letter of intent sent to the Registrar's Office who reviews with the Dean of Students to determine space accommodations for on campus living, and with the Provost and Academic Support office to review academic record for feasibility for completion and advisor assignment. A \$300.00 administrative fee may be applied when accepted into the program.

Completion Program:

It is designed for those former students who need to earn 30 semester credits or less to meet their degree requirements.

- Typically these students cannot return full-time on campus to finish requirements.
- Students will register for a Degree Completion Planning Seminar to work out the details of their program. Following that, the program requires enrollment in at least one semester. The Fall or Spring enrollment need not be full-time or on campus.
- The POE must be approved by the Department Chair.
- Upon readmission, students are assigned a POE advisor to assist them in developing a program of emphasis which meets the degree requirements. The remaining credits needed to graduate may be earned through:
 - regular courses offered at the College;
 - through independent studies with the College faculty (including emeritus faculty) or with practitioners or scholars recognized as qualified by the Provost;
 - or through courses taken at other accredited institutions.

Students may transfer in credits if the student has not exhausted the current transfer credit policy. A \$300.00 administrative fee is applied when accepted into the program.

Deadlines to apply for readmission to Juniata in the Degree Completion program:

- July 1 for Fall semester
- November 1 for Spring semester

ACADEMIC AMNESTY PROGRAM

Broad Guidelines:

- The Academic Amnesty Program applies only to students that have been away from the college for at least 5 years and wish to complete their degrees.
 - Under the Academic Amnesty policy, a maximum of 15 credits (with grades) may be forgiven from the student's GPA calculation when he or she re-enters the college. Alternatively a student's GPA may be reset if the student has over 55 credits remaining to graduate.
 - No grades will be removed from a student's permanent record
 - Academic Amnesty can be offered only once per student
 - Final transcript will show GPA before and after Amnesty administered, and the new or adjusted GPA will be marked, "Academic Amnesty"
 - Students under this program will not qualify for academic honors, and their class rank will not be calculated
- All requests for implementation of degree completion programs, including academic Amnesty, will be heard by SAD
- Recognizing that certain areas of study may have changed dramatically over the course of decades, a student's POE must be approved by the relevant department chair as a condition of re-entry.
- Curriculum committee will address concerns over outdated distribution requirements.
- Students who graduate in these programs may take part in the May commencement ceremony
- A \$300.00 administrative fee is applied when accepted into the program.

Certificate Requirements

Certificates are credit-bearing programs that certify satisfactory completion of an organized program of study. New certificate programs must be approved by the Department and Program Committee. All new certificate program applications to the Department and Program Committee must be made after consultation with departments that house the certificate courses and the Provost.

All certificates will consist of a minimum of 18 credit hours. Certificates may be of different lengths, as defined by National Center for Education Statistics (NCES) standards:

Short-term Certificates

Less than 1 academic year or Less than 30 semester credit hours.

Moderate-term Certificates

At least 1 but less than 2 academic years or At least 30 but less than 60 semester credit hours.

Long-term Certificates

At least 2 but less than 4 academic years or 60 or more semester credit hours.

All pre-requisite courses must be part of the credit count for the certificate.

The certificate degree will have a separate status, separate paperwork, and will be recorded separately on the student's transcript.

Sub-baccalaureate Certificate Degree Requirements

Students wishing to earn a certificate must have a 2.0 grade average or above in their certificate courses.

When students seeking a B.A. or B.S. degree at Juniata are also enrolled in a certificate program, the policies and procedures regarding matriculation requirements, course registration policies, and graduation application guidelines remain the same. Students seeking a certificate must submit a faculty-approved, final version of the certificate form to the Office of the Registrar. Certificates may overlap with POE coursework.

However, if a student wishes to get a certificate and a secondary emphasis, there must be a minimum of 15 credits in the certificate that do not overlap with the

secondary emphasis.

For students who enroll in certificate programs as a standalone degree, policies and procedures will be determined administratively with the on-going consultation of the Executive Committee.

Accelerated Dual Degrees

Purdue for Masters in Chemistry

<http://www.juniata.edu/departments/chemistry/outcomes.html>

To qualify for automatic acceptance the student must have a 3.3 GPA and has a letter of recommendation from the chair of the chemistry department. Purdue has a graduate program in chemistry and analytical chemistry.

Graduate Degrees and Certificates

Graduate Programs of Study

MASTER OF ACCOUNTING

Graduates of Juniata's Master of Accounting (MAcc) program have a remarkable placement rate. The Master of Accounting program is designed to prepare students for entry into a world where individuals must have a command of relevant knowledge about accounting, management, and economics, and have a capacity to apply that knowledge in addressing problems and making decisions. The program will emphasize the development of skills necessary for a productive long-term career, along with a firm understanding of accounting theories and concepts. This understanding and development of skills will give students the knowledge they need to do well on the CPA Examination and to achieve their career goals. Additionally, accounting skills are highly valued in the marketplace and can lead to career possibilities in corporate, non-profit sector, and governmental work.

A Distinct Experience

MAcc program faculty have considerable experience in both professional and academic work environments.

Class sizes are small and allow for lively discussion and personalized attention.

Course work is unique in that the program includes financial economics as a requirement. Accounting professionals should under-

stand the increasing complexity of financial market transactions in order to present transparent financial statements. The use of derivatives and securitizations has been at the root of recent stock and credit market trouble. Study of financial economics provides added expertise not found in traditional accounting curricula.

The MAcc is also distinct in that it contains a course in accounting research, a rare requirement in master's programs in accounting.

The MAcc program is designed to develop the following learning outcomes for our graduates. Students will:

Interpret the professional standards of financial accounting, managerial accounting, tax practices, and attestation.

Explain and utilize complex accounting theory and practices in a business environment.

Analyze information to recommend business decisions.

Generate professional verbal and written communication.

Evaluate the economic, ethical, social, political, legal, regulatory, and global environment of complex accounting problems.

By working in teams, propose solutions to accounting issues using the case method.

Core Courses

AC-532 Corporate Taxation

AC-533 Government and Non-Profit Accounting

AC-534 Advanced Accounting

AC-535 Auditing

AC-536 Federal Taxation of Individuals

AC-537 Cost Accounting

AC-538 Forensic Accounting

AC-539 Accounting Research

Economic Courses

(Must Complete One)

AC-563 Financial Markets & institutions

AC-564 Financial Theory & Analysis

MBA-523 Managerial Economics

MBA or Data Science Elective

(Must Complete One - Offerings Vary Per Term)

Prerequisites

EB-131 Financial Accounting

EB-232 Intermediate Accounting I

EB-233 Intermediate Accounting II

EB-203 Introduction to Business Law

OR

EB-204 Legal Regulation of Business

EB-222 Principles of Macroeconomics

PL-230 Business Ethics

EB-211 Business Statistics

Or Approved Statistic Course

MA-130 Calculus I

Or Approved Substitute Course

MASTER OF BUSINESS ADMINISTRATION

Earn your MBA in as little as one year. Part-time students can earn an MBA in two years.

Use the links below to apply online at no cost, or to request further information.

[Apply Online Request Information](#)

Gain the knowledge and skills necessary to successfully lead an organization as you move into positions with more authority and

responsibility. Juniata's Master of Business Administration (MBA) program is designed for professionals aspiring to do well in leadership roles. Fulltime students can complete the program in one year.

A Distinct Experience

Click on the banners below and learn more about what makes the MBA program unique at Juniata College.

Networking Opportunities

Faculty With Professional Experience

The Juniata Center for Entrepreneurial Leadership (JCEL)

Glaeser Executive-in-Residence Program

International Perspectives

Connecting Students with Business and Theory to Practice

Like traditional MBA programs, Juniata's curriculum focuses on developing technical expertise in the functional areas of business including accounting, finance, marketing, economics, human resource management, and operations. But, we also go a step beyond, inspiring you to be an innovative leader by providing meaningful international study, project management and consulting experience, and executive mentors who will help you on your journey.

Formats offered: Online (January 2019 Pending approval by the Middle States Commission on Higher Education) on campus (August 2019).

Courses/Curriculum

Master of Business Administration (MBA) Curriculum

Course	MBA course #	Credits
21st Century Leadership	MBA 502	3
Marketing in the Information Age	MBA 522	3
Social Entrepreneurship	MBA 540	3
Quantitative Analysis and Research Methods	MBA 511	3
Organizational Behavior	MBA 512	3
Professional Ethics & Social Responsibility	MBA 531	3
Strategic Human Resource Management and People Analytics	MBA 571	3
Project Management and Consulting (capstone)	MBA 580-581	3-6

International Business Strategy	MBA 590	3
Managerial Economics	MBA 523	3
Financial Reporting and Analysis	MBA 532	3
Operations & Information Management	MBA 541	3
Cost Accounting	4	
Financial Markets & Institutions	4	
Financial Theory & Analysis	4	

Over time, the MBA will add concentrations in areas to include Business Analytics, Health Care Administration, and others.

Prerequisites include an earned bachelor's degree from an accredited institution and the completion of accounting, microeconomics, statistics, and marketing courses.

MASTER OF ORGANIZATIONAL LEADERSHIP

Earn your MOL in as little as one year. Part-time students can earn an MOL in two years.

Use the links below to apply online at no cost, or to request further information.

[Apply Online Request Information](#)

Develop and enhance your leadership skills for career growth in the for-profit, nonprofit, or public sectors. Acquire the technical expertise needed to develop strategy, gain knowledge of organizational behavior, improve your ability to communicate effectively with individuals and teams, and learn to make ethical decisions, plan strategically, and motivate members of your organization. The interdisciplinary structure of the Juniata's Organizational Leadership master's degree program, which features our College's distinctive expertise in conflict resolution, will enable you to earn a master's degree that focuses on conflict and change, social entrepreneurship, collaborative partnerships, and the ability to think broadly about leadership in for-profit, nonprofit, and public sectors.

[A Distinct Experience](#)

[Click on the banners below and learn more about what makes the Organizational Leadership program unique at Juniata College.](#)

[Demonstrated Success](#)

[Interdisciplinarity](#)

[Conflict Resolution Tools](#)

[Core Courses](#)

[ORG-502 21st Century Leadership](#)

[ORG-510 Organizational Communication and Culture](#)

[ORG-511 Quantitative Analysis & Research Methods](#)

[ORG-512 Organizational Behavior](#)

[ORG-520 Strategic Marketing Management](#)

[ORG-530 Conflict and Change](#)

[ORG-531 Profsnl Ethics & Social Respnsblty](#)

[ORG-542 Entrepreneurial Management](#)

[ORG-571 Strategic HR Mgmt & People Analytics](#)

[ORG-595 Capstone](#)

MASTER OF SCIENCE IN BIOINFORMATICS

There is an incredible need for properly prepared bioinformaticians, to address the current revolution in biology. The field of bioinformatics will be a constant necessity, as the amount of data keeps growing and the nature of it keeps changing. Faculty from the biology department and data science program who will teach classes include Gina Lamendella, Vince Buonaccorsi, Jill Keeney, Loren Rhodes, and Kim Roth.

[A Distinct Experience](#)

[Click on the banners below and learn more about what makes the Bioinformatics program unique at Juniata College.](#)

[Cutting Edge Curriculum](#)

[Biotech Company Partnerships](#)

[Interdisciplinary Nature](#)

[Outcomes That Matter](#)

[Core Courses](#)

BIN-500 Bioinformatics Fundamentals

DS-510 Computer Science Fundamentals

BIN-516 Molecular and Cellular Biology

DS-520 Statistics Fundamentals

Computational Electives

DS-516 Mathematics Fundamentals

DS-525 Data Acquisition & Visualization

DS-530 Multivariate Techniques

DS-552 Data Mining

DS-570 Database Systems

DS-575 Big Data Techniques

Biotechnology Electives

BIN-560 Genetic Analysis

BIN-580 Advanced Research Methods

BIN-600 Environmental Genomics

Capstone Experience

BIN-581 Bioinformatics Capstone

OR

DS-580 Data Science Capstone

MASTER OF SCIENCE IN DATA SCIENCE

Data Science is a rapidly growing field in which there are many job opportunities emerging across many disciplines. The program is designed for individuals with bachelor's degrees who want to learn data science, with no prerequisites of courses in computer science or statistics. The program will be 30-32 credits of courses taught fully online, with optional once per semester weekend boot-camps for cohort building and software setup. Faculty from the IT/CS and Mathematics departments who will teach classes include Loren Rhodes, Kim Roth, Melissa Innerst, Jerry Kruse, Bill Thomas, and John Wright.

A Distinct Experience

Click on the banners below and learn more about what makes the Data Science program unique at Juniata College.

Weekend Boot-Camp

Enroll With Any Background

Outcomes That Matter

Core Courses

DS-500 Data Science Fundamentals

DS-510 Computer Science Fundamentals

DS-516 Mathematics Fundamentals

DS-520 Statistics Fundamentals

DS-525 Data Acquisition & Visualization

DS-570 Database Systems

DS-580 Data Science Capstone

Elective Courses

DS-530 Multivariate Techniques

DS-552 Data Mining

DS-575 Big Data Techniques

MBA-511 Quantitative Analysis & Research Methods

BIN-500 Bioinformatics Fundamentals

BIN-580 Advanced Research Methods

BIN-600 Environmental Genomics

Courses of Instruction

Undergraduate

ACCOUNTING, BUSINESS, AND ECONOMICS (ABE)

EB-100 Introduction to Management (Variable; All Years; 3.00 Credits; S) This course develops an understanding of management principles in the areas of planning, organizing, staffing and control, including but not limited to the aspects of strategy, legal environment, operation/supply chain management.

EB-102 Introduction to Entrepreneurship (Spring; Yearly; 3.00 Credits; S) Students will explore the personal ramifications of becoming an entrepreneur. They will generate ideas for new business start-ups and learn how to determine whether an idea represents a viable business opportunity. Students will develop their concepts as far as possible toward the actual startup venture. Prerequisite: EB101 or permission of the instructor.

EB-105 International Economic Issues (Fall & Spring; Variable; 3.00 Credits; S,I) Understanding international economics is increasingly important for private and public decision-makers. In a world of growing economic interdependence, the ability of policy makers to provide a stable environment for business is a key issue. Accordingly, this course develops the principle topics of international economics, including trade theory, the balance of payments, the cause and consequences of exchange rate movements, the flow of capital, currency crises and regional trade issues. The applied topics emphasized will be based on the most pressing current issues.

EB-120 Executive Leadership (Spring; Yearly; 1.00 Credit; S) Students will study leadership styles and effective leadership practices in various settings, including entrepreneurship, private business, corporations, not-for-profit organizations and social movements.

EB-131 Financial Accounting (Fall & Spring; Yearly; 3.00 Credits; S) Introduces fundamental principles and assumptions of accounting as they relate to transaction analysis and basic financial statements.

EB-140 Investing: Your Future (Fall & Spring; Yearly; 1.00 Credit; S) Saving too little can cost you a secure future. In this course you will learn to make informed judgments about how to save, how much to save, how to invest, what to believe, who to ask for advice, and how to choose among investments. Students with no investing knowledge but who are interested are especially encouraged to take this course.

EB-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

EB-202 Behavioral Analysis of Organizations (Variable; Yearly; 4.00 Credits; CW,S) The broad focus of the course is to examine

how individuals come together to form a successful organization. The course is broken into three major sections: people, organizations, and leadership. The course emphasizes student involvement and engages students in a variety of in-class exercises, case analysis role playing exercises, small group exercises, and an off-campus class experience or two. One or more off-campus experiences are required for the course. Prerequisite: Sophomore standing.

EB-203 Introduction to Business Law (Spring; Variable; 3.00 Credits; S) An introduction to the American legal system as it applies to the business community. Emphasis is on basic legal concepts in contracts, real and personal property, agency and employment, and transaction of business through partnerships and corporations. Prerequisite: Sophomore standing.

EB-204 Legal Regulation of Business (Spring; Variable; 3.00 Credits; S) Examines the areas in which by statute the legislative branch of government regulates business. Topics include anti-trust law, bankruptcy, consumer protection, securities laws and the uniform commercial code. Prerequisite: Sophomore standing.

EB-206A Fashion Marketing (Variable; Variable; 2.00 Credits; SW-GE) It is an interdisciplinary and international course that introduces you to fashion production and marketing in France and Morocco. This course provides classroom instruction along with practical experiences in France and Morocco to explore the cultural and economic impact of the fashion industry.

EB-206B Fashion Marketing (Variable; Variable; 2.00 Credits; SW-GE) It is an interdisciplinary and international course that introduces you to fashion production and marketing in France and Morocco. This course provides classroom instruction along with practical experiences in France and Morocco to explore the cultural and economic impact of the fashion industry.

EB-207 New Venture Creation (Fall & Spring; Yearly; 3.00 Credits; S) Students will analyze business start-up successes and failures, develop their own new ideas for new ventures and learn how to determine when an idea represents a viable business opportunity. Students will pursue those opportunities as far as possible toward actual startup of the venture. Prerequisites: EB102.

EB-210 Quantitative Business Analysis (Fall; Yearly; 3.00 Credits; QM,S) This course introduces quantitative techniques for solving business problems and works to establish a link between data analysis and business decision-making. The course presents algebra, graphical methods, applied calculus, and descriptive statistics as tools to aid business decision makers. Prerequisites: High school algebra or pre-calculus.

EB-211 Business Statistics (Either Semester; Yearly; 3.00 Credits; QS,S) This course covers basic descriptive and inferential statistics, normal curve and z-score computations, and addresses hypothesis testing using Chi-Square, T-Test, ANOVA, and linear regression modelling.

EB-222 Principles of Macroeconomics (Fall & Spring; Yearly; 3.00 Credits; S) Macroeconomic conditions affect individuals and businesses in numerous ways: employment opportunities, the purchasing power of wages and salaries, the cost of borrowing money, sales, profits, and competitiveness against foreign businesses. This course develops the theories relevant to understanding

the business cycle, inflation, unemployment, deflation, exchange rates and balance of payments problems. It also examines the options and tradeoffs governments face as they seek to provide a stable macroeconomic environment through monetary and fiscal policies. Case studies of the macroeconomic performance and policies of diverse countries provide a comparative orientation. Prerequisites: Sophomore, Junior, or Senior standing

EB-223 Principles of Microeconomics (Fall & Spring; Yearly; 3.00 Credits; S) The optimizing behavior of households and firms serves as the focal point in this study of market-based resource allocation. Supply and demand analysis, spending and saving decisions of households, production and employment decisions of firms, alternative market structures, and environmental economics are among the topics covered. Prerequisite: Sophomore, Junior, or Senior standing.

EB-232 Intermediate Accounting I (Fall; Yearly; 4.00 Credits; S) A comprehensive study and application of generally accepted accounting principles for asset valuation, income measurement, and financial statement presentation for business organizations. Prerequisites: EB131.

EB-233 Intermediate Accounting II (Spring; Yearly; 4.00 Credits; S) A continuation of the comprehensive study and application of generally accepted accounting principles for asset valuation, income measurement, and financial statement presentation for business organizations begun in Intermediate Accounting I. Prerequisite: EB232.

EB-236 Managerial Accounting (Fall & Spring; Yearly; 4.00 Credits; S,QM,CW) Emphasizes accounting concepts for the internal use of management in planning and control. Course focuses on spreadsheet applications to analyze management policies. Prerequisite: EB131.

EB-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

EB-300 Business in China I (Spring; Yearly; 2.00 Credits; I-,CA,SW-GE) This course will examine 1) the history of the Economic Reform that triggered the economic growth in 1988 in China; 2) the role that international trade has played that promoted the economic growth in China; 3) the civic life of China, particularly from the business perspective; and 4) the basic conversational Mandarin Chinese and Chinese business etiquette that help students get by in China. We will review basic economics concepts and introduce students to the fundamentals of economic theory. We will apply economic reasoning to think critically about the public policies, business decisions, and general tradeoffs that help explain the recent economic growth in China. Another objective of the course is to connect students with internship opportunities by physically visiting multinational enterprises in China and connecting with Juniata alumni in China. Students will gain a better understanding of China and better prepare those who want to start their careers in China. This course adds important value to the ABE department and the business curriculum as the course design is consistent with the college strategic plan with respect to China. Corequisite: EB301. Note: There are no refunds after drop/add ends.

EB-301 Business in China II (Summer; Yearly; 2.00 Credits; CA,I,SW-GE) This course will examine 1) the history of the Economic Reform that triggered the economic growth in 1988 in China; 2) the role that international trade has played that promoted the economic growth in China; 3) the civic life of China, particularly from the business perspective; and 4) the basic conversational Mandarin Chinese and Chinese business etiquette that help students get by in China. We will review basic economics concepts and introduce students to the fundamentals of economic theory. We will apply economic reasoning to think critically about the public policies, business decisions, and general tradeoffs that help explain the recent economic growth in China. Another objective of the course is to connect students with internship opportunities by physically visiting multinational enterprises in China and connecting with Juniata alumni in China. Students will gain a better understanding of China and better prepare those who want to start their careers in China. Corequisite: EB300.

EB-307 New Venture Start-Ups (Fall & Spring; Yearly; 3.00 Credits; S) Students will develop their new ventures beyond the conceptual and planning stages by establishing actual operations-purchasing, manufacturing, marketing, etc. to generate revenue. They will implement whatever support systems (accounting, human resources, inventory management, etc.) are needed. Prerequisite: EB207.

EB-320 Intermediate Microeconomics (Fall; Variable; 3.00 Credits; S) Microeconomics analyzes the behavior of individual economic units such as consumers and firms. Intermediate microeconomics builds on the topics covered in principles of microeconomics and principles of macroeconomics. While those courses were more intuitive, this course explores microeconomics with a deeper degree of rigor using mathematical models to predict economic behavior. Prerequisites include EB223 and EB222.

EB-321 Intermediate Macroeconomics (Fall; Variable; 3.00 Credits; S) Intermediate Macroeconomics builds upon the concepts developed in principles of microeconomics and principles of macroeconomics. Macroeconomics in general tries to understand the aggregate behavior of economies rather than that of individual economic actors, and in this course we will study and use models that help explain what has happened in the past and predict what will occur. Prerequisites: EB222 and EB223.

EB-325 Health Economics (Variable; Yearly; 3.00 Credits; S) Health Economics applies economic analysis to better understand the functioning of the healthcare industry. Topics will include demand for healthcare and health insurance, information problems, healthcare costs, comparative healthcare systems and healthcare policy. Prerequisite: EB223 Principles of Microeconomics

EB-332 Corporate Taxation (Fall; Variable; 3.00 Credits; S) This course is intended for undergraduates who desire to learn how the IRS code applies to corporations. Prerequisites: Junior or Senior standing.

EB-333 Governmental and Nonprofit Accounting (Spring; Yearly; 3.00 Credits; S) Governmental and Nonprofit Accounting is designed to provide an overview of fundamental concepts and practices used in accounting for activities of governmental and non-business organizations. After successfully completing the course, students will be familiar with recording financial transactions, preparing financial reports, budgeting, auditing, and analyzing the results for federal, state and local governments, colleges

and universities, healthcare organizations and other nonprofits. Prerequisite: EB 233 Intermediate Accounting II.

EB-334 Advanced Accounting (Fall; Even Years; 3.00 Credits; S) Focuses on accounting theory and problems regarding such specialized topics as: partnerships, consolidated financial statements, governmental accounting, multi-national enterprises and corporate bankruptcy. Prerequisite: EB233.

EB-335 Auditing (Fall; Variable; 3.00 Credits; S) Emphasizes current auditing principles and the objectives of independent accounting firms. Particular attention is placed on auditing procedures and the ethical and legal responsibilities of the auditor. Prerequisite: EB233.

EB-336 Federal Taxation: Individuals (Spring; Even Years; 3.00 Credits; S) Examines the federal income tax structure and its relationship to individuals and sole proprietorships. Emphasis is placed on the preparation of the individual income tax return. Prerequisite: EB131.

EB-337 Cost Accounting (Either Semester; Yearly; 3.00 Credits; S) An analysis of the use of cost accounting systems to accumulate and allocate manufacturing costs. In order to support inventory valuation and emphasis is on solving real business problems. Prerequisite: EB236 and Junior or Senior standing.

EB-340 Investing Analysis (Fall & Spring; Yearly; 1.00 Credit; S) The course is meant to train portfolio managers. Students will maintain an online trading account and learn about fiduciary responsibility. They will assist portfolio managers by analyzing investments and with other tasks. This course prepares students to become portfolio managers. Prerequisites: EB140

EB-341 Product and Operations Management (Either Semester; Yearly; 3.00 Credits; S) Examines the necessary things business firms must do to efficiently convert inputs to outputs. The course is about equally divided between qualitative operations management theory and quantitative tools that have been developed to solve typically occurring problems in production/ operations. Prerequisites: EB201.

EB-342 Management Information Systems (Spring; Yearly; 3.00 Credits; S) The study of how computer technology is used to gather, store, organize, retrieve, and transmit information within and between organizations. Topics include the organizational and technical foundations of information systems, the contemporary tools and techniques for building systems, and the management of information system resources. Emphasizes current computer platform applications and techniques used in business. Prerequisites: EB201 (EB201 can be taken concurrently) and Junior or Senior standing.

EB-351 Marketing Management (Fall & Spring; Yearly; 3.00 Credits; S) Analyzes consumer behavior leading to selection of product as well as pricing, promotion and distribution strategies. Research projects help students apply concepts to the complexities of decision making in marketing. Prerequisite: EB201.

EB-355 Marketing Strategies (Spring; Yearly; 3.00 Credits; S) Examines in depth the development and implementation of marketing strategies, for businesses and not-for-profits, for domestic and international businesses. Prerequisite: EB351.

EB-358 Marketing Research and Analytics (Variable; Yearly; 3.00 Credits; S) This course covers the three core pillars of analytics: Descriptive Analytics, Predictive Analytics, and Prescriptive Analytics, which helps students understand, conduct, interpret and evaluate basic statistics that are widely used in marketing research and in the process being able to critique research reports. Students will be trained to utilize computer software in conducting statistical analyses. Prerequisite: EB-351

EB-359 Advertising & Promo Mgmt (Variable; Yearly; 3.00 Credits; S) This promotion management course is designed to give students an in-depth examination of integrated marketing communication and how it relates to handling promoting an organization, a campaign, a product and (or) service, or any other specific cause. The course will look at various promotional techniques such as public relations, various sources of advertising and marketing, and the utilization of direct sales approaches, with the focus on the marketing mix to the various aspects of communications that take place between the firm and its customers. At the same time, this course lends itself to studying both applied and theoretical issues to give students both a real-world view of advertising and promotions, as well as frameworks for understanding such real-world decisions. The course will offer an insight into strategies that can be developed and implemented to manage promotional activities. Pre-Req: EB-351

EB-361 Financial Management I (Fall; Yearly; 3.00 Credits; S) The management of business assets and liabilities and the concurrent creation of sources and the use of funds. Special attention is given to financial statement analysis and decisions involving working capital management. Prerequisite: EB131 and Junior or Senior standing.

EB-362 Financial Management II (Spring; Yearly; 3.00 Credits; QM,S) Special attention to long-term external sources of funds. Capital budgeting under uncertainty, security market processes, strategies for debt/ equity mix, and portfolio theory are covered. Prerequisite: Junior or Senior standing.

EB-363 Health Care Financial Management (Variable; Yearly; 3.00 Credits; S) Emphasizes health care decision making using financial information. The course focuses on unique financial characteristics in the health care industry, such as the mix of government and non-government providers and payers, complex payment systems, and the interactions between providers, insurance companies and consumers. Prerequisite: EB131.

EB-371 Human Resource Management. (Fall; Yearly; 3.00 Credits; S) The early part of the course takes an in-depth look at the fundamental nature of the employer- employee relationship. The fundamental framework is then used to evaluate traditional aspects of Human Resource Management practice: Selection, training, recruitment, performance appraisals, and compensation. Class time involves some lecture, in-class exercises, guest speakers from industry, and case analyses. Prerequisites: EB202 or PACS202.

EB-375 21st Century Leadership (Spring; All Years; 3.00 Credits; S,CTGES) This course examines the challenges of providing leadership in the information age of global and cultural contexts. Leadership as manifested in today's workplace provides both opportunity and a great responsibility. The role and function of leaders look very different today than years ago. Change is the norm. Leaders must understand today's challenges and be able to

function effectively given a borderless, multicultural, virtual, and diverse group of followers. No prerequisites.

EB-377 Sports Management (Spring; Variable; 3.00 Credits; S,CS) Sports Management will explore the many business and socio-cultural aspects of the business of sports. Sport plays an increasingly significant role in our world as professional and collegiate sports attract more and more of our entertainment spending and sports personalities become more central and idolized in society. This exploration of the sports industry will connect well with other areas of business study: organizational behavior, strategy, human resource management, and marketing. Prerequisite: Junior standing.

EB-379 Bargaining and Conflict Management (Variable; Yearly; 3.00 Credits; S,CS) Bargaining and Conflict Management provides students with an opportunity to learn about bargaining and conflict-management theory. Students will have the opportunity to explore and apply this theory, and to examine aspects of bargaining style, in a variety of bargaining simulations. The course will also have an international component by utilizing international bargaining simulations as an instructional tool. Prerequisite: EB202 or PACS202.

EB-381 International Political Economy (Spring; Yearly; 3.00 Credits; S,I) The pursuit of wealth and power, profit and privilege, corporate growth and national security occurs in a global context. This course examines the business agendas and political priorities that find expression in the policy agreements and institutional agreements of the contemporary global economy. The course is conducted as a seminar and requires a substantial research project. Prerequisite: EB105.

EB-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Offers special studies to meet the interest and demands of Students. Note: Students may take each ST: course for credit.

EB-407 Entrepreneurship (Fall; Yearly; 3.00 Credits; S) Examines the application of administrative and functional fields to small business situations. Special attention is given to the problems typical of the small business. Projects and local businesses may be used as cases. Prerequisites: EB307 or permission of the instructor.

EB-440 Portfolio Management I (Fall & Spring; Yearly; 1.00 Credit; S) Students manage the Juniata College student portfolio, making all investment decisions about policy, trading, and long term goals. They present a progress report to the public, benchmark and account for the investments, and defend their choices. Prerequisites: EB140 and EB340 or EB362 or permission of the instructor.

EB-441 Portfolio Management II (Fall & Spring; Yearly; 1.00 Credit; S) Students manage the Juniata College student portfolio, making all investment decisions about policy, trading, and long term goals. They present a progress report to the public, benchmark and account for the investments, and defend their choices. Prerequisites: EB140 and EB340 or EB362 or permission of the instructor.

EB-442 Portfolio Management III (Fall & Spring; Yearly; 1.00 Credit; S) Students manage the Juniata College student portfolio, making all investment decisions about policy, trading, and long term goals. They present a progress report to the public, benchmark and account for the investments, and defend their choices.

Prerequisites: EB140 and EB340 or EB362 or permission of the instructor.

EB-443 Portfolio Management IV (Fall & Spring; Yearly; 1.00 Credit; S) Students manage the Juniata College student portfolio, making all investment decisions about policy, trading, and long term goals. They present a progress report to the public, benchmark and account for the investments, and defend their choices. Prerequisites: EB140 and EB340 or EB362 or permission of the instructor.

EB-463 Financial Markets & Institutions (Spring; Variable; 3.00 Credits; S,I) The role of credit and capital and the function of dollar and Euro bonds in today's internationalized financial markets are investigated empirically and assessed analytically in this course. Numerous economic theories relevant to understanding the behavior of various asset markets are developed, including portfolio and asset models of exchange rate determination and currency speculation. The costs and benefits of alternative government policies such as financial regulation and capital and foreign exchange controls are weighed. Prerequisite: EB222.

EB-464 Investments (Fall; Yearly; 3.00 Credits; S) The study of the basic concepts, analysis techniques and strategies for investing in portfolios of securities. Stocks, bonds, options and futures are examined as well as fundamental, technical and efficient market strategies. Prerequisites: EB 362.

EB-465 Financial Theory and Analysis (Spring; Variable; 3.00 Credits; S) Financial Theory & Analysis will be a finance elective aimed at juniors and seniors. EB465's purpose is to develop an understanding of traditional modern portfolio theory, recent challenges to this orthodoxy, empirical knowledge of asset performance and how to apply this knowledge to specific contexts, i.e. creating an appropriate portfolio. Prerequisites: EB211 and EB362. MA220 may be used as a replacement for EB211 only.

EB-470 Distinction Seminar (Fall & Spring; Yearly; 1.00-4.00 Credits; S)

EB-480 Senior Seminar (Fall & Spring; Yearly; 3.00 Credits; S) A capstone course for POE in Business. Through the use of readings, case studies and simulations, students in the course will formulate corporate strategy and implement it in a competitive environment. How firms may gain and sustain competitive advantage with the formulated strategy will be examined. In addition, students will also be trained to craft business reports on corporate strategies. The evaluation of performance will mainly depend on the content and the quality of the business reports.

EB-490 Business Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; S) Develops students' skills, through practical experiences or field projects which require proposals for problem analysis and solution. The experiences and projects are provided by local businesses or other organizations and use technical and decision skills developed in students' areas of concentration. Note: Limited availability. May be repeated up to a total of 9 hours credit. Corequisite: EB495. Prerequisites: Permission and Jr. or Sr. standing.

EB-495 Business Internship Seminar (Fall & Spring; Yearly; 2.00-6.00 Credits; S) Requires students to reflect on the experience and/or pursue relevant research. Note: Limited availability. May be repeated up to a total of 6 hours credit. Corequisite: EB490. Pre-

requisites: Permission.

EB-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) This course allows departments to offer topics not normally taught to be offered. Prerequisites and title vary by section.

EB-TUT Business Teaching Assistant (Variable; Variable; 3.00 Credits; S)

Fine Arts

AR-103 Beginning Drawing (Variable; Yearly; 4.00 Credits; F,WK-CE) This course will explore the fundamental concerns as well as representational methods and concepts. Using line, shape, form, volumetexture, and the effective spatial organization of these elements, students will develop perceptual and technical skills to interpret form and space. Students will work with graphite and charcoal, pencil, ink, and other media. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109.

AR-104 Design and Color (Variable; Yearly; 3.00 Credits; F,CTDH) The discipline of design is basic to all forms of visual art, including painting, drawing, photography, ceramics, and illustration. This course is designed to acquaint the student with the basic elements of picture structure: composition, line, shape, value, texture, color, scale, proportion, tension, and balance.

AR-107 3D Design (Variable; Variable; 3.00 Credits; F) The objective of this class is to familiarize students with the language, creation, and function of three-dimensional objects and visual culture. In order to develop an approach to the art making process, we will explore basic concepts of design and form, through the investigation of modern and traditional media. Additional topics will include visual tactics used by artists and designers both to evoke specific emotions and concepts. Students will create hands-on projects using materials such as plaster, wire, cardboard, wood, and fabric. Note: additional lab fees apply.

AR-117 Intro to Sculpture (Variable; Yearly; 3.00 Credits; F,WK-CE) This course is an introduction to the foundational concepts and creation of sculpture. We will explore various techniques related to wood working, metal working, fiber arts, and glass casting; along with aesthetic, historical, and cultural considerations associated with 3-dimensional art. Through this course, students will begin developing their artistic voice by experimenting with and apply these concerns in their work.

AR-125 Explorations in Clay (Variable; Yearly; 3.00 Credits; F,WK-CE) This course introduces students to the basic techniques of hand-built ceramics. The fabrication techniques of pinching, coiling, and slabbing are combined with conceptual concerns of creating art pottery. Throughout the course of the semester students will develop their skills and understanding of Art both as a maker and as an audience. Pre- or Co-Req: FYC-101 or EN-110 or EN-109.

AR-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) An introduction to one of the branches of art not currently included in the regular course offerings. Prerequisites will vary based on the course being offered. Special fees may apply.

AR-200 Beginning Painting (Variable; Yearly; 4.00 Credits; F,WK-CE) Introductory course which investigates perceptual and technical aspects of painting which build off of Drawing, 2D Design

and Art History. Students work in oil paint, learn various support construction, mediums, traditional methods (including making and altering paint chemistry) and color theory. Demonstration, reading, lectures and slide presentations supplement studio sessions and outside projects. Materials are ordered for the student. Taking an introductory level drawing course prior to enrollment in Basic Painting is highly encouraged (but not mandatory). Note: Drawing courses from high school may provide adequate preparation. Please contact the course instructor for more information. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

AR-201 Introduction to Art Therapy (Variable; Variable; 3.00 Credits; F,S) Introduction to Art Therapy is designed to introduce undergraduates to the philosophical, pragmatic and historical bases of the human service field of art therapy, with emphasis on current applications in the field of art therapy. Art experiences, lectures, case studies and study of artistic productions will be utilized to explore the relationship between art and healing. A course fee is assessed.

AR-203 Digital Photography I (Variable; Yearly; 4.00 Credits; F) This course focuses on photography and the creation of digital imagery. Students will learn to operate a DSLR camera and complete projects utilizing a variety of photographic techniques and genres. Students will learn to express visual concepts through photography while utilizing specific techniques unique to the creation of digital photographic artwork. Final works will be exhibited electronically and in print. Students will also look at the work of contemporary photographers and prepare a presentation on one photographer. The course utilizes primarily Adobe Photoshop on a Mac platform.

AR-204 Digital Art I (Variable; Yearly; 4.00 Credits; F,CTDH,WK-CE) This course focuses on the creation of art through electronic processes. Adobe Creative Cloud and other apps will be utilized along with scanners, cameras, and printers. Final works will be exhibited electronically and in print.

AR-208 Beginning Photography (Variable; Yearly; 4.00 Credits; F,WK-CE) This foundational photography course does not assume any prior knowledge of black and white materials or 35mm camera operation. It is designed to introduce students to basic principles of camera and darkroom equipment operation. Students will seek a fine balance between technical acquisition of the photographic skills (such as correct film exposure, film development, and paper processing) and the ability to implement them to communicate a personal vision. Emphasis will be placed on learning basic principles of photography and an ability to express this knowledge creatively through high quality black and white photographs. Students will be exposed to aspects of the history of photography and visual language in photography today. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

AR-211 The Art of Bookmaking (Variable; Yearly; 3.00 Credits; F,WK-CE) This course will introduce fiber to students at its most sophisticated and expressive, mode: Book Arts. Students will be taught basic book-making techniques as well as a brief history of visual communication (both functionally and aesthetically). Students will create projects that challenge traditional notions of the book within the visual arts. Students will participate in such activities as papermaking, sewing, stitching, and other techniques used to alter the idea of published material and written communication. Note: Additional lab fees apply. Pre-Req or Co-Req: FYC-101 or EN-

110 or EN-109

AR-215 Ceramic Sculpture (Variable; Yearly; 3.00 Credits; F,WK-CE) Ceramic Sculpture introduces students to the basic methods and techniques of creating three-dimensional objects in clay. Students will learn various hand-building techniques as well as the technical, historical, and cultural considerations associated with 3-dimensional art. Through this course, students will develop their own artistic voice by experimenting with and apply these concerns in their ceramic work. Pre-requisite or co-requisite: FYC-101 or EN-110 or EN-109

AR-220 Formulating Beauty: Ceramic Chemistry (Variable; Yearly; 3.00 Credits; WK-SP) This course is an introduction to ceramic chemistry as related to the formulation of glaze for ceramic wares. Students will engage in experimentation with various materials to gain an understanding of how they contribute to and affect the fired glaze. Along with formulation, health hazards and food safety will be addressed and investigated throughout the course. Pre-requisite: FYC-101

AR-225 Wheel Throwing (Variable; Yearly; 4.00 Credits; F,WK-CE) This course will introduce students to the techniques of the potter's wheel and expressive qualities of clay as an artistic medium as well as an essential commodity. Students will learn wheel-throwing techniques to incorporate form, function, and design with each project. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

AR-235 Empty Bowls Practicum (Variable; Yearly; 4.00 Credits; F,SW-LE) Students will learn to create functional bowls to be donated to the annual Empty Bowls fundraising event that supports Huntingdon County food banks. Additional and complementary topics will include philanthropy, altruism, and empathy-building activities. Students will develop the knowledge and skills needed to engage effectively with the local communities they will inhabit throughout their lives. Creative thought and discourse will occur throughout the semester.

AR-298 Mixed Media Animation (Alternate Years; Variable; 4.00 Credits; F) Introduces students to animation through stop motion techniques and 2D computer animation. An emphasis is placed on story-telling and examining the physics of movement. Adobe Creative Cloud apps will be used in addition to Dragon Frame and traditional stop motion techniques. Projects will start by exploring the history of animation techniques and principles and culminate in independent projects.

AR-299 Special Topic (Variable; Variable; 1.00-4.00 Credits) An introduction to one of the branches of art not currently included in the regular course offerings. Prerequisites vary based on the course offering. Special fees may apply.

AR-300 Intermediate Painting (Variable; Yearly; 4.00 Credits; F) This course is designed for advanced students to broaden their understanding of painting, refine techniques, visualize sophistication of concepts, and begin building a personal portfolio that reveals an attempt at a search for meaning/content, personal style, and individual expression. Students will build upon foundational painting skills acquired in introductory level painting by exploring color and tonal relationship through a variety of applications and techniques of the oil media. Students will also investigate descriptive and expressive possibilities in painting introduced through

technical and conceptual painting problems designed to develop observational and conceptual awareness. Prerequisites: AR200 and Art POE or permission of the instructor. Note: A special fee for art supplies is applied.

AR-303 Intermediate Drawing (Either Semester; Variable; 3.00 Credits; F) This course is designed to expose students to many different drawing techniques using a variety of tools, media, support materials, and surfaces as applied to individual expression. This course will build upon skills acquired in Basic Drawing (AR103) by emphasizing observational concerns as well as representational methods and concepts, and by developing perceptual and technical skills. Through the use of line, shape, form, volume, texture, color and effective spatial organization of these elements, students will interpret and translate form and space. We will also be addressing content and conceptual concerns of drawing as a complete art form within itself and its place in contemporary art today. Prerequisites: AR103 or AR200. Note: A special fee for art supplies is assessed.

AR-305 Intermediate Ceramics (Variable; Yearly; 4.00 Credits; F) This course will investigate advanced ceramic techniques and concepts to strengthen students' abilities to utilize clay as a creative medium. Sophisticated and expansive projects will merge personal investigation, aesthetic sensibilities, and technical skills as a means of expression. Students will participate in other areas of ceramics, such as loading and unloading kilns and making clay. Prerequisites - Take ONE of the following: AR-125, AR-215, AR-225, AR-235, or by permission.

AR-308 Intermediate Photography (Variable; Variable; 3.00 Credits; F) Building upon the experiences of Basic Photography, this course will concentrate on black and white photography; however, students will be encouraged to go beyond the boundaries of a conventional black and white print by incorporating a range of techniques, paper sizes, and alternative processes. Students will be exposed to the work of early and contemporary photographers through thematically structured lectures based upon significant historical and contemporary themes, concepts, and ideas. Students will be expected to produce work with deeper content and individual expression. Prerequisite: AR208. Note: A special fee for art supplies is assessed.

AR-323 Wheel Throwing II (Either Semester; Variable; 3.00 Credits; F) This course is designed to investigate more complex theories and techniques of wheel-thrown ceramics. Sophisticated and expansive projects will fuse personal investigation, aesthetic sensibilities, and technical skills as a means of expression. Students are encouraged to challenge constraints of the material as well as their comfort level - it is only through the process of trying that one can never truly fail. Prerequisites: AR225. Note: A special supply fee is assessed on this course.

AR-335 Empty Bowls Practicum (Variable; Yearly; 4.00 Credits; F) Students enrolled in AR335 will create functional bowls to be donated to the annual Empty Bowls event in order to raise money for Huntingdon County food banks. Reflection on philanthropy and national hunger will be the secondary focus of the course. Prerequisite: AR225

AR-392 Museum Education (Fall; Variable; 3.00 Credits; F) This course will study the history, theory, and practice of museum education. The class combines lectures, round table discussions, and

design strategies for successful museum education programs for a variety of audiences. Students implement their learned skills through a series of programs that they design and implement for pre-selected groups. Prerequisites: AR-110 or AR-130.

AR-395 Advanced Photography Topics (Variable; Variable; 3.00 Credits; F) This course will expand upon students' understanding of photography and digital art. The class is structured around modules that dive into different genres, like documentary, still life, or fashion, and will end with an ambitious self-directed project. Advanced shooting, editing, and printing techniques will be covered. PRE-REQ (either/or): Digital Art (AR204), Digital Photo (AR203), BW Photo (AR208) Course Fee

AR-398 3D Computer Animation (Variable; Yearly; 4.00 Credits; F) Introduction to 3D animation using Autodesk Maya, though other programs will be used. Emphasis is placed on improving time-based design and story-telling by studies that explore movement, cinematography, editing, sound, and lighting. Prerequisite: AR-104 or AR-204 or IM-110 or AR-298.

AR-399 Special Topics in Art (Variable; Variable; 1.00-4.00 Credits) An introduction to one of the branches of art not offered. Prerequisites vary based on the course offering. Special fees may apply.

AR-400 Advanced Painting (Variable; Yearly; 4.00 Credits; F) This course is designed for advanced students to broaden their understanding of painting, and their refine techniques. This course will help students build a personal portfolio that conveys a search for meaning/content, personal style, and individual expression. Students will build upon painting skills acquired in introductory and intermediate level painting courses by investigating descriptive and expressive possibilities in painting. Painting abilities and techniques should be refined this semester, as well as sophistication of concepts. An emphasis will be placed on solving conceptual problems in painting in a context relevant to contemporary art. Prerequisites: AR200 and AR300 and Art POE or permission of the instructor. Note: A special fee for art supplies is assessed.

AR-403 Advanced Drawing Studio (Variable; Variable; 3.00 Credits; F) Offers the experienced student the opportunity to explore more complex problems of expression in drawing. Prerequisite: AR303.

AR-405 Advanced Ceramics (Variable; Yearly; 4.00 Credits; F) Students will propose individually-designed, sophisticated and expansive projects that display dedication to a cumulative sense of aesthetic sensibilities, technique(s), visual vocabulary, and concept utilizing clay as the primary medium. Creative thought and discourse will occur throughout the semester. Interaction will be expected during open forum sessions of AR405. Prerequisites - AR305 or by permission. Additional lab fees apply.

AR-451 Capstone in 2D Studio Art I (Variable; Yearly; 4.00 Credits; F) This course provides students with the time, focus, and experience to develop an art portfolio in preparation for entrance to graduate art programs or a career in visual arts. Students must have twelve credits of advanced courses (300 and 400 level) in one or more of the following art disciplines: Drawing, Painting, Photography, Ceramics, Sculpture (3-D arts), and Art History.

AR-452 Capstone in 2D Studio Art II (Spring; Yearly; 3.00 Credits;

F) This course provides students with the time, focus, and experience to develop an art portfolio in preparation for entrance to graduate art programs or a career in visual arts. Students must have twelve credits of advanced courses (300 and 400 level) in one or more of the following art disciplines: Drawing, Painting, Photography, Ceramics, Sculpture (3-D arts) and Art history.

AR-453 Capstone in 3D Studio Art I (Fall; Yearly; 3.00 Credits; F) This course provides students with the time, focus, and experience to develop an art portfolio in preparation for entrance to graduate art programs or a career in visual arts. Students must have twelve credits of advanced courses (300 and 400 level) in one or more of the following art disciplines: Drawing, Painting, Photography, Ceramics, Sculpture (3-D arts) and Art history.

AR-454 Capstone in 3D Studio Art II (Spring; Yearly; 4.00 Credits; F) Students will create a body of work to display in the spring Capstone exhibition. Independent investigations may vary in medium; capstones are offered to students who have displayed advanced talent and comprehension of material(s). Sophisticated and expansive projects will be individually designed by each student that displays dedication to a cumulative sense of aesthetic sensibilities, technique(s), visual vocabulary, and concept. Creative thought and discourse will occur throughout the semester. Interaction will be expected during open forum sessions of AR-454. Prerequisite: AR-405 or by permission. Additional lab fees apply.

AR-490 Art Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; F) Students will work under the supervision and guidance of a faculty member or internship sponsor. Internships may be in the fields of the fine arts, art history, or museum studies. Students may work as fine arts apprentices, museum interns, curatorial assistants, etc. Note: May be repeated to a total of 9 credit hours. Prerequisites: Permission and Jr. or Sr. standing. Corequisites: AR495.

AR-495 Art Research Seminar (Fall & Spring; Yearly; 2.00-6.00 Credits; F) Requires student to reflect on the experience and/or pursue relevant research. Corequisites: AR 490. Prerequisites: permission.

AR-498 Digital Photography II (Spring; Variable; 3.00 Credits; F) This course expands upon the skills learned in Art 203 or Art 208 and exposes students to more advanced skills in fine arts digital photography. Students will work on advanced projects, skills and the creation of a final portfolio. There will be a field trip. Note: a special fee for supplies, equipment and field trip will be applied. Prerequisites: Any ONE of the following courses: AR203 or AR208.

AR-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows departments to offer topics not normally offered. Prerequisites and fees vary by title.

AR-TUT Art Teaching Assistant (Variable; Variable; 1.00-4.00 Credits)

BIOLOGY

BI-101 General Biology I (Variable; Yearly; 4.00 Credits) General Biology I is the first course in the Biology POE core curriculum. This course will be structured around four primary case studies on the opioid crisis, climate change, environmental toxicology and the evolution of speed in animals. The cases will outline founda-

tional concepts in molecular biology and evolution.

BI-102 General Biology II (Variable; Yearly; 4.00 Credits) This class will emphasize student engagement in the research process along with basic research skills. Students will engage in research projects with their professors. The course will include hands-on laboratory technique development, experimental design, hypothesis testing, and scientific writing. Prerequisite: BI-101 or BI-105

BI-106 Functions of Cells and Organisms (Fall; Yearly; 3.00 Credits; N,CTGES) The second course in the introductory biology series. This course is divided into two half semester modules: cell and molecular biology and the physiology and systems of plants and animals. Prerequisites: CH142.

BI-142 Sensory Biology (Spring; Even Years; 3.00 Credits; N) The Senses will cover basic themes in biology using different sensory modalities as model systems. The course will deal with the traditional five senses as well as ways in which other animals perceive the world. The Senses will outline the vital role sensory processing plays in evolution, alterations in cellular activity and gene expression, memory and behavior. This course is not recommended for students whose programs of emphasis are in the natural sciences. There are no prerequisites for this course.

BI-159 Natural History of Florida (Spring; Variable; 1.00 Credit) This course examines the diverse, unique ecosystems of Florida. A combination of lectures and discussions are supplemented by a week-long trip to Florida. We will explore Florida's ecosystems through first-hand experiences.

BI-189 Freshman Seminar (Spring; Yearly; 1.00 Credit; N,CW) The Freshman Biology Seminar will provide students with a small biology class in their first year and provide faculty advisors with an opportunity to interact with their freshman advisees on a weekly basis and gauge progress in the program. Students will read and discuss the philosophical and quantitative underpinnings of scientific inquiry and will apply writing skills acquired in their first semester of College Writing Seminar to communicating scientific ideas. Prerequisites: Biology POE. This course is required for all students intending to graduate with a POE in Biology.

BI-190 Human Biology (Fall; Yearly; 3.00 Credits; N,CTGES) A non-majors approach to the biology of humans. The course covers the basic chemistry and biology of the human body, as well as how humans fit into the environment. Emphasis will be on applying information to current topics at the individual and societal levels. This course covers the biology requirement for the Social Work POE and is one of the courses included in the Genomics Certificate.

BI-199 BI Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer topics not normally taught. Prerequisites and Corequisites vary by title.

BI-199A Special Topics (Variable; Variable; 3.00-4.00 Credits) Allows departments to offer subjects not normally taught. Prerequisites and fees vary by topic.

BI-199B Special Topics (Variable; Variable; 3.00-4.00 Credits) Allows departments to offer subjects not normally taught. Prerequisites and fees vary by topic.

BI-199C Special Topics (Variable; Variable; 3.00-4.00 Credits) Allows departments to offer subjects not normally taught. Prerequisites and fees vary by topic.

BI-207 Modern Genomics (Spring; Yearly; 4.00 Credits; N) This course builds on the basic concepts covered in BI105 and BI106, with emphasis on signaling and energy balance and requirements of cells and biological systems. The course has both a classroom and a laboratory component. Required for students with a biology POE. Prerequisites: BI105, BI106, CH142 and CH144.

BI-231 Microbiology I (Variable; Yearly; 3.00 Credits; N) Focuses on the structure, function, growth, genetics and ecology of viral, bacterial, and fungal microorganisms. Basic concepts are emphasized and topics important to the quality of human life are examined. Corequisite: BI 232. Prerequisite: BI106 and CH144.

BI-232 Microbiology Laboratory I (Fall; Yearly; 1.00 Credit; N) Presents procedures and experiments which demonstrate basic micro-biological concepts and techniques. Illustrates and augments the content of the lecture. Note: A special fee is assessed. Corequisite: BI231.

BI-268 Intro. to Human Anatomy (Summer; Yearly; 4.00 Credits; N) A study of the structural and functional anatomy of the human body. This course is designed for both non-biology majors and biology majors with an interest in the health professions. At the end of the course you will be able to identify and describe the major anatomical features and function of the integumentary, skeletal, muscular, nervous, cardiovascular, respiratory, digestive, urinary, and reproductive systems.

BI-289 Frontiers of Biology (Fall; Yearly; 1.00 Credit) Seminar series, required in all Biology POE's in the Sophomore year, consisting of research seminars given by invited speakers and members of the department, both faculty and students. Descriptions of independent research, internship and study abroad opportunities as well as reports by students and faculty on experiences in these programs will be presented. .

BI-290 Nutrition (Variable; Yearly; 3.00 Credits; N,WK-SP) This course covers basic principles and facts about nutrition, explores the role of nutrition in human health, and considers a range of societal and political issues surrounding food and nutrition in the U.S. and abroad. Prerequisite: FYC-101 or EN-110 or EN-109.

BI-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the Biology department to offer topics not on the regular schedule. Prerequisites will vary based on topic.

BI-299A Special Topics (Variable; Variable; 3.00-4.00 Credits) Allows departments to offer subjects not normally taught. Prerequisites and fees vary by topic.

BI-299B Special Topics (Variable; Variable; 3.00-4.00 Credits) Allows departments to offer subjects not normally taught. Prerequisites and fees vary by topic.

BI-299C Special Topics (Variable; Variable; 3.00-4.00 Credits) Allows departments to offer subjects not normally taught. Prerequisites and fees vary by topic.

BI-300 General Ecology (Spring; Yearly; 3.00 Credits; N) Examines

the interactions of living organisms with their physical, chemical, and biotic environments. Special attention is given to the environmental, biological, and historical factors affecting the distribution, abundance, adaptation, and diversity of species in natural communities. This course deals with “ecological principles”, and as such complements the Introduction to Environmental Science course, which deals with environmental issues. Prerequisites: BI-101 or BI-105, and BI-102 or BI-121, or permission of the instructor. Corequisite: BI-301 or BI-301CW.

BI-301 General Ecology Lab (Spring; Yearly; 1.00 Credit; N) Students work together as research teams to carry out original investigations on the ecology of local species and natural communities. Emphasis on ecological research design, data collection and analysis, and oral and written presentation of results. Field trips are included. Prerequisites: BI-101 or BI-105 and BI-102 or BI-121, or permission of the instructor. Corequisite: BI-300.

BI-301CW General Ecology Lab (Spring; Yearly; 2.00 Credits; N,CW) Students work together as research teams to carry out original investigations on the ecology of local species and natural communities. Emphasis on ecological research design, data collection and analysis, and oral and written presentation of results. Frequent field trips are included. Note: a special fee is assessed and one optional field trip requires an additional fee. This section of general ecology lab contains added emphasis on writing to fulfill college writing requirements. Frequent field trips are included. Note: a special lab fee is assessed and one field trip may require an additional fee. Corequisite: BI300.

BI-305 Biostatistics (Fall; Yearly; 4.00 Credits; N,QS,CTGES) This course deals centrally with quantitative and statistical methodology in the biological sciences. It includes experimental design and the conventions of generating, analyzing, interpreting and presenting biological data. Counts as a math course for graduate and professional school requirements. Prerequisites: BI-102 or BI-106 or ESS-100.

BI-305CW Biostatistics (Fall; Yearly; 5.00 Credits; N,QS,CW,CTGES) This course deals centrally with quantitative and statistical methodology in the biological sciences. It includes experimental design and the conventions of generating, analyzing, interpreting and presenting biological data. Counts as a math course for graduate and professional school requirements. This writing intensive section requires the writing of an individual research report and one additional hour of class time to discuss writing in biology. Prerequisites: BI-102 or BI-106 or ESS-100.

BI-310 Physiology (Fall; Yearly; 4.00 Credits; N) A combined laboratory and lecture course which examines the function of cells, tissues, organs, and systems. Physical, Mathematical, chemical, and anatomical concepts are integrated to gain a comprehensive appreciation of the dynamics of living organisms. Students are introduced to the use of physiological instrumentation, experimental design, collection and statistical analysis of data, and preparation of scientific manuscripts. Laboratory experiments amplify and complement the lectures. Pre-Reqs: BI-102 or BI-106; CH-232 or CH-242.

BI-310CW Physiology (Fall; Yearly; 5.00 Credits; N,CW) A combined laboratory and lecture course which examines the function of cells, tissues, organs, and systems. Physical, Mathematical, chemical, and anatomical concepts are integrated to gain a com-

prehensive appreciation of the dynamics of living organisms. Students are introduced to the use of physiological instrumentation, experimental design, collection and statistical analysis of data, and preparation of scientific manuscripts. Laboratory experiments amplify and complement the lectures. In addition, students taking this Writing version of BI310 receive additional instruction regarding writing in Biology and produce a well-researched paper on a topic in Physiology. Pre-Reqs: BI-102 or BI-106; CH-232 or CH-242.

BI-316 Molecular & Cellular Biology. (Spring; Yearly; 3.00 Credits; N) A comprehensive approach to the study of cells, with emphasis on molecular techniques and understanding the primary literature. Analysis of the cell at the molecular level emphasizes a unity in the principles by which cells function.

BI-318 Developmental Biology (Fall; Yearly; 3.00 Credits; N) This course offers comprehensive investigation of the concepts and mechanisms of development, including gametogenesis, fertilization, pattern formation and organogenesis. The course examines classical and molecular approaches examining problems of development. Students are expected to present research from current literature in the field. Prerequisites: BI-106 or BI-102; CH-232 or CH-242.

BI-318CW Developmental Biology (Fall; Yearly; 4.00 Credits; N,CW) This course offers comprehensive investigation of the concepts and mechanisms of development, including gametogenesis, fertilization, pattern formation and organogenesis. The course examines classical and molecular approaches examining problems of development. Students are expected to present research from current literature in the field. This course is the CW version of BI318. In addition to the topic of Developmental Biology, students will receive instruction related to writing in the biological sciences and will be required to produce a well-researched paper on a topic in developmental biology. Prerequisites: BI-106 or BI-102; CH-232 or CH-242.

BI-321 Ecological Genetics (Spring; Variable; 3.00 Credits; N,QS) Ecological genetics is concerned with the genetics of ecologically and evolutionarily important traits, that is, traits related to fitness such as survival, growth, and reproduction. It is the study of the process of phenotypic evolution occurring in present-day natural populations. Basic and advanced concepts in population and quantitative genetics are covered, including measuring selection on phenotypic characters, with a focus on methods applicable to field studies of ecologically important traits. Mathematical and conceptual material are fully integrated and explained. Application to conservation, spread of invasive species, evolution of pesticide, herbicide, and antibiotic resistance, and environmental effects of genetically modified organisms used in agriculture will be covered. Lab period will be devoted to problem solving, discussion group, experimental manipulation and simulation studies, and independent student research projects. Prerequisites: BI105 and BI106 and BI305 or MA220.

BI-323 Mammalogy (Variable; Variable; 3.00 Credits; N) Examines the comparative biology of living mammals, including taxonomy, evolution, biogeography, ecology, morphology, physiology and behavior. Special attention is given to conservation issues, the relevance of mammals in modern biological research, and field techniques for studying mammals. Prerequisites: BI105 or permission of the instructor.

BI-324 Ornithology (Variable; Yearly; 3.00 Credits; N) This course provides a comprehensive survey of the comparative biology, ecology, and behavior of birds with a special focus on issues pertaining to conservation and management. Laboratory activities focus on field identification of birds and research and monitoring techniques. Several field trips are possible with one possible 3 day trip to Assateague Island. Prerequisite: BI105.

BI-325 Plant Ecology (Fall; Yearly; 3.00 Credits; N) Primarily an ecology course, but also included is a significant amount of plant identification and/classification and plant ecology. The ecology portion will cover the whole spectrum of this fast-growing field; from communities and ecosystems to theory and adaptation. Corequisite: BI-326. Prerequisites: BI-101 or BI-105 and Junior or Senior standing.

BI-326 Plant Ecology Lab (Variable; Yearly; 1.00 Credit; N) The first 10 weeks are devoted to laboratory work on the identification of the local entophyte flora. Students are required to make a personal collection representing a minimum of 8 families and are expected to become proficient in using a scientific manual. During the 5th and 6th week there is a mandatory all day field trip to collect forest data. An extensive paper on forest succession will be due by semester's end. Corequisite: BI-325. Prerequisite: BI-101 or BI-105.

BI-327 Botany (Spring; Yearly; 4.00 Credits; N) This course will provide an in-depth examination of the biology of plants. In lecture and lab we will examine plant reproduction and development, morphology and physiology, evolution and biodiversity, and ecology and conservation. Particular attention will be paid to the aspects of plant biology that are unique to this branch of life and/or are of critical importance to human or other biotic interactions (e.g. photosynthesis, pollination, agriculture, etc.). Prerequisites: BI105. Note: A special course fee is applied.

BI-331 Molecular Microbiology (Fall; Yearly; 3.00 Credits; N,CTG-ES) Focuses on the structure, function, growth, genetics and ecology of viral, bacterial, and fungal microorganisms. Basic concepts are emphasized and topics important to the quality of human life are examined. Corequisite: BI332. Prerequisites: BI207 and Jr. or Sr. standing.

BI-331CW Microbiology II (Fall; Yearly; 4.00 Credits; N,CW) Focuses on the structure, function, growth, genetics and ecology of viral, bacterial, and fungal microorganisms. Basic concepts are emphasized and topics important to the quality of human life are examined. Corequisite: BI332. Prerequisites: BI207 and Jr. or Sr. standing.

BI-332 Molecular Microbiology Lab (Fall; Yearly; 1.00 Credit; N) Presents procedures and experiments which demonstrate basic micro-biological concepts and techniques. Illustrates and augments the content of the lecture. Note: A special fee is assessed. Corequisite: BI331.

BI-333 Plant Diversity (Fall; Even Years; 4.00 Credits; N) This course explores the diversity of plants through the scientific field of plant systematics, and in particular, through the practice of plant taxonomy: the description, identification, naming, and classification of plants. We will focus our attention on studying and identifying the regional flora as well as the major vascular plant families. This will be done through a combination of field and liter-

ature study. Prerequisites: BI105 and BI12

BI-337 Comparative & Evolutionary Psych (Spring; Yearly; 3.00 Credits; CS,N,S) (see PY 337)

BI-339 Organic Evolution (Spring; Variable; 3.00 Credits; N) Presents the theory and facts of organic evolution through a review of modern and historical research on the subject. Major topics include population genetics, adaptations, evolutionary ecology, systematics, the fossil record, molecular evolution, ontogeny and phylogeny, macroevolution, co-evolution, human evolution, and sociobiology. Prerequisite: BI-101 or BI-105.

BI-339CW Organic Evolution (Spring; Yearly; 4.00 Credits; N,CW) Presents the theory and facts of organic evolution through a review of modern and historical research on the subject. Major topics include population genetics, adaptations, evolutionary ecology, systematics, the fossil record, molecular evolution, ontogeny and phylogeny, macroevolution, co-evolution, human evolution, and sociobiology. This course is the CW version of BI339. In addition to the topic of Evolution, students will receive instruction related to writing in the biological sciences and will be required to produce a well-researched paper on a topic in evolution. Prerequisites: BI207 or BI300 or permission of instructor.

BI-340 Medical Microbiology (Fall; Yearly; 4.00 Credits; N) A lecture and lab course focusing on the biology of microorganisms and microbial interactions with humans. Foundational concepts of microbial cell structure, diversity, metabolism, genetics and impacts on humans are discussed along with medical, biotechnical, and environmental aspects of microbiology. Lab provides hands-on experiences with microbiological techniques and handling microorganisms safely and aseptically. Note: A special fee is assessed. Prerequisite: BI-102 or BI-106, and CH-144.

BI-350 Invertebrate Zoology (Fall; Odd Years; 2.00 Credits; N) Focuses on the organizational plan, behavioral and ecological adaptation, diversity and economic importance of representative members of the major invertebrate phyla. Corequisite: BI351. Prerequisite: BI105 and BI121.

BI-351 Invertebrate Zoology Lab (Fall; Odd Years; 2.00 Credits; N) Illustrates and augments the content and concepts of the lecture through direct observation and/or dissection of selected representative organisms. Corequisite: BI350.

BI-353 Entomology (Fall; Even Years; 3.00 Credits; N) An introduction to the biology of insects. Emphasis is given to the systematic, structure, and ecology of the major insect orders and to selected families found in North America. Corequisite: BI354. Prerequisite: BI105.

BI-354 Entomology Lab (Fall; Even Years; 1.00 Credit) This lab will focus on insect collection, identification, behavior and ecology. Requires each student to contribute to preparation, identification, and presentation of a class collection of insects. Corequisite: BI353.

BI-360 Vertebrate Zoology (Fall; Yearly; 3.00 Credits; N) Focuses on the vertebrate animals of the Eastern United States. Collection, taxonomic identification and natural history are emphasized. Prerequisite: BI-101 or BI-105.

BI-361 Vertebrate Zoology Lab (Fall; Yearly; 2.00 Credits; N) Frequent field trips, for observation and specimen collection are followed by exercises in identification, specimen preparation, and museum techniques to illustrate and augment the concepts and content of the lecture. Note: A special fee is assessed and one optional field trip requires an additional fee. Corequisite: BI360.

BI-362 Animal Behavior (Fall; Variable; 4.00 Credits; N) Behavior is a result of the nervous system interacting with the environment. Animal Behavior will explore the proximate and ultimate causes of behavior. Special attention will be paid to the role and function of the nervous system in behavior as well as the interplay between genetics and the environment. The lab portion of the course is a co-requisite and will explore basic experimental design for studying animal behavior in the lab and in the field. Prerequisites are BI 105 or with instructors permission.

BI-367 Comparative Anatomy (Fall; Yearly; 3.00 Credits; N) A study of the structural organization of the human body organized around the major body systems with an emphasis on structure function relationships. To gain deeper understanding of structure function relationships, we will study human anatomy in relation to our position within the vertebrate lineage, comparing human anatomical features with those of other vertebrates. Prerequisites: BI-101 or BI-105 and BI-102 or BI-106. Corequisite: BI-368.

BI-368 Comp Anatomy Laboratory (Fall; Yearly; 1.00 Credit; N) Provides additional content to support the lecture using human models, online resources and dissection of selected representative vertebrates with an emphasis on amniote, mammalian and human anatomy. Note: A special fee is assessed. Corequisite: BI367.

BI-370 Herpetology (Variable; Variable; 3.00 Credits; N) This course presents the biology of amphibians and reptiles from an evolutionary, anatomical and ecological perspective. Phylogenetic diversity of modern taxa will be presented, focusing on North American groups. Instruction will be in the form of lectures, discussions, laboratory activities and field trips to observe local herpetological species. Prerequisites: BI105. Note: A special course fee will be applied.

BI-380 Biology Research Methods (Fall & Spring; Yearly; 4.00 Credits; N,CW,CTGES) Offered in multiple sections by faculty members in the Biology department for students interested in learning to conduct meaningful and responsible research. Students enroll in a section aligned with their research interest to generate novel data, while mastering the important components of research common to each of the diverse areas of Biology. Prerequisites: BI105 and BI122 and sophomore, junior, senior standing and permission of the instructor.

BI-389 Biology Research Seminar (Fall; Yearly; 1.00 Credit) Lectures, discussions and student exercises covering such topics as ethics in research, writing effective research proposals and the effective written and oral communication of research results. Professional research and educational societies, government and private funding of research in the United States and other countries and career opportunities will also be discussed. Prerequisites: BI289. Corequisites: BI489. Graded S (satisfactory) or U (unsatisfactory).

BI-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Of-

fered at the discretion of the department to qualified students. Topic titles may vary from semester to semester and more than one may be offered per semester. Note: Students may take each ST: course for credit and a special fee is assessed. Prerequisite: permission of the instructor, or as indicated.

BI-399A Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows departments to offer topics not normally taught. Prerequisites, corequisites and fees vary by title.

BI-399B Special Topics (Variable; Variable; 3.00-4.00 Credits) Allows departments to offer subjects not normally taught. Prerequisites and fees vary by topic.

BI-399C Special Topics (Variable; Variable; 3.00-4.00 Credits) Allows departments to offer subjects not normally taught. Prerequisites and fees vary by topic.

BI-399D Special Topics (Variable; Variable; 3.00-4.00 Credits) Allows departments to offer subjects not normally taught. Prerequisites and fees vary by topic.

BI-399E Special Topics (Variable; Variable; 3.00-4.00 Credits) Allows departments to offer subjects not normally taught. Prerequisites and fees vary by topic.

BI-400 Environmental Genomics (Variable; Yearly; 4.00 Credits; N) This course will utilize Microbial Community Analysis leveraging high-throughput sequencing technology to identify the microbes present in naturally occurring our man-made ecosystems. Students will learn both molecular and bioinformatics skill sets, as well as microbial ecology principles throughout this course.

BI-417 Reproductive Biology (Fall; Even Years; 3.00 Credits; N) This course examines reproductive biology by integrating aspects of development, anatomy, cell biology, and hormone physiology with the behavior and ecology of vertebrates. Prerequisites: BI06.

BI-417CW Reproductive Biology (Fall; Even Years; 4.00 Credits; N,CW) This course examines reproductive biology by integrating aspects of development, anatomy, cell biology, and hormone physiology with the behavior and ecology of vertebrates. Prerequisites: BI06.

BI-432 Environmental Toxicology (Spring; Even Years; 3.00 Credits; N) Broadly integrative in nature, this class compounds in environmental systems and focuses on the potential for deleterious consequences in wildlife species and humans. Examines aspects of chemistry, cell biology, and ecology in considering environmental contamination. Instruction includes lectures and student presentations/writing exercises. Prerequisites: Take 2 courses from BI-101 or BI-105 or CH-142 or ESS-100, or have permission from the instructor.

BI-432CW Environmental Toxicology (Spring; Even Years; 4.00 Credits; N,CW) Broadly integrative in nature, this class examines the fate and actions of xenobiotic compounds in environmental systems and focuses on the potential for deleterious consequences in wildlife species and humans. Examines aspects of chemistry, cell biology and ecology in considering environmental contamination. Instruction includes lectures and student presentations/writing exercises. Prerequisites: Take 2 courses from BI-105 or CH-142 or ESS-100 and permission of the instructor.

BI-444 Immunology (Variable; Yearly; 4.00 Credits; N) Covers the properties of antigens, antibodies and complement, humoral and cell-mediated immunological systems, antigen-antibody interactions and hypersensitivity reactions. Pre-Req: BI-102 or BI-106; CH-312 or CH-342.

BI-450 Neurobiology (Spring; Yearly; 3.00 Credits; N) Neurobiology is a lecture course that addresses concepts ranging from the molecular biology of ion channels to signal integration and behavior. This course is experimentally based and will focus on the biophysics, chemistry, and mechanisms of signal production and integration in the nervous system. Particular attention will be paid to sensory systems and memory consolidation. In addition to lecture exams, students will gain valuable experience in scientific writing through the preparation of a review paper on a neurobiological topic of their choosing. Pre-Req: Take one of the following courses: BI-101 or BI-105 or CH-142 or PY-101 or PC-200 or PC-202 or PC-204.

BI-450CW Neurobiology (Spring; Yearly; 4.00 Credits; N,CW) Neurobiology (W) is a lecture course that addresses concepts ranging from the molecular biology of ion channels to signal integration and behavior combined with a supplemental series of lectures to develop the students writing skills in Biology. This course is experimentally based and will focus on the biophysics, chemistry, and mechanisms of signal production and integration in the nervous system. Particular attention will be paid to sensory systems and memory consolidation. In addition to lecture exams, students will gain valuable experience in scientific writing through the preparation of a review paper on a neurobiological topic of their choosing. Pre-Req: Take one of the following courses: Take BI-101, BI-105, CH-142, PY-101, PC-200, PC-202, or PC-204.

BI-460 Genetic Analysis (Spring; Variable; 3.00 Credits; N) Topics covered will include basic and advanced topics in transmission, quantitative and population genetics, with emphasis on analysis. the methods that modern researchers use to discover the molecular basis of adaptive or disease traits and how they are transmitted over generations in model and non-model species. Case studies will be used to challenge students' understanding of conceptual material in context. Students will present an article from the primary literature and present on a topic of their choice. This class assumes students enter with a basic understanding of Molecular and Mendelian Genetics. Prereqs: BI-101 or 105 and BI-102 or 106.

BI-461 The Art & Science of Brewing (Spring; Yearly; 3.00 Credits; N) This is a synoptic study of brewing, integrating the science, technology, and history while considering all of the many steps in the brewing process including, barley and malting, yeast biology, brewing herbs mashing, conditioning and beer styles. NOTE: Students must be 21 years of age by the start date of the course. Students will be expected to have completed one semester each of biology and chemistry and two semesters of laboratory work in the natural sciences.

BI-481 Medical Genomics Research Methods (Variable; Yearly; 4.00 Credits; N) This class will provide training in advanced statistical and/or informatics tools. Bioinformatics skills will be related to variant characterization and/or comparison of eukaryotic genomes and populations. The research project will involve working with scientist/MD Dr. Holmes Morton on medical research problems affecting marginalized Amish and Mennonite populations in

Kish Valley. Pre-Req: BI-305 or BI-400 or BI-460 or permission of instructor.

BI-489 Biology Research (Fall & Spring; Yearly; 1.00-6.00 Credits; N) Individual research projects directed by faculty members based on proposals submitted in BI 389, Biology Research Seminar. Attendance at a departmental journal club is expected. Presentation at a professional meeting is encouraged. May be repeated for up to 15 credits. Prerequisite: Permission of the instructor.

BI-489CS Biology Research (Fall & Spring; Yearly; 1.00-6.00 Credits; N,CS) Individual research projects directed by faculty members based on proposals submitted in BI 389, Biology Research Seminar. Attendance at a departmental journal club is expected. Presentation at a professional meeting is encouraged. May be repeated for up to 15 credits. Prerequisite: Permission of the instructor.

BI-490 Biology Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; N) Note: May be repeated up to a total of 9 hours of credit. Corequisite: BI 495. Prerequisite: permission and Jr. or Sr. standing.

BI-495 Internship Seminar (Fall & Spring; Yearly; 2.00-6.00 Credits; N) Requires students to reflect on the experience and/or pursue relevant research. Corequisite: BI 490. Prerequisite: Permission

BI-497 Bio. Instr/Bio. Teachers (Summer; Irregular/On Demand; 3.00 Credits; N) Teaching high school and middle school teachers how to use laptop computers with Vernier computer probes in activities from biology and chemistry with may include Boyle's Law, freezing point, pH titration, colorimetry, molar volume of a gas, foot pressure, enzyme activity, cell volume relationships, conductivity, and respiration.

BI-498 Bio. Instr/Bio. Teachers (Summer; Irregular/On Demand; 3.00 Credits; N) This course will introduce teachers to the practical use and underlying theory behind modern biology instrumentation and technology. The Subject matter will include electrophoresis microscopy, histology, human physiology, microbiology, human evolution, genetics, enzymology, limnology, etc.

BI-499 Senior Thesis (Either Semester; Yearly; 3.00 Credits; N,CW) This course is the culmination of an individual research project initiated in BI 489. Students will complete their projects by writing a paper describing their research. These papers will be of significant length and contain full documentation of the student's original research. The thesis will be presented orally to faculty and students at the yearly campus wide Juniata Student Research Symposium. Prerequisite: Permission of the instructor.

BI-499 Adv Bi Inst/Bi Tchrs (Summer; Irregular/On Demand; 3.00 Credits) The purpose of this course is to continue the study of instrumentation beyond the introductory levels of BI498. The teachers will develop advanced techniques for teaching the practical use and underlying theory behind modern biological instrumentation and technology. The subject matter will include: Electrophoresis, Microscopy, Histology, Human Evolution, Genetics, Enzymology, Limnology, etc. Prerequisites: BI498.

BI-516 Molecular & Cellular Biology (Variable; Yearly; 4.00 Credits) A comprehensive approach to the study of cells, with emphasis on molecular techniques and understanding the primary literature. Analysis of the cell at the molecular level emphasizes a unity in the principles by which cells function. PRE-REQ: BS degree in

molecular biology, biochemistry or the permission of the instructor.

BI-TUT Biology Teaching Assistant (Variable; Variable; 1.00-4.00 Credits)

CHEMISTRY

CH-142 Integrated Chemistry Principles I (Fall; Yearly; 3.00 Credits; N) An introduction to the principles of chemistry, this course begins a two semester sequence that integrates information from all aspects of chemistry while focusing on the core principles of the relationships between energy, the structure of atoms and molecules, and atomic and molecular properties and reactivity. Topics include energy, reactions, atomic structure, elemental properties, bonding, and molecular properties. Corequisite CH143.

CH-143 Integrated Chem Principles I Lab (Variable; Yearly; 1.00 Credit; N,QS) This semester will focus on learning good laboratory practices, primarily through the quantitative analysis of compounds. The quantitative analysis of materials and an understanding of reproducibility and bias are relevant to many fields, including medical analysis or the analysis of contaminants in the environment. This course will also teach you how to keep an excellent laboratory notebook, identify safety hazards in the lab, and complete data analysis and graphing in Excel. All of these tools will serve you well in a variety of careers. CH142 is a corequisite of this course. A lab fee is associated with this course.

CH-144 Integrated Chemistry Principles II (Spring; Yearly; 3.00 Credits; N) An introduction to the principles of chemistry, this course completes a two semester sequence that integrates information from all aspects of chemistry while focusing on the core principles of the relationships between energy, the structure of atoms and molecules, and atomic and molecular properties and reactivity. Topics include thermodynamics, equilibrium reactions, acid/base and redox reactions, kinetics and nuclear reactions. Prerequisite: CH-142.

CH-145 Integrated Chemistry Principles II Lab (Spring; Yearly; 1.00 Credit; N,QS) This semester will focus on learning good laboratory practices, primarily through the quantitative analysis of compounds. The quantitative analysis of materials and an understanding of reproducibility and bias are relevant to many fields, including medical analysis or the analysis of contaminants in the environment. This course will also teach you how to keep an excellent laboratory notebook, identify safety hazards in the lab, and complete data analysis and graphing in Excel. All of these tools will serve you well in a variety of careers. Prerequisite: CH-143. A lab fee is associated with this course.

CH-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary with topic.

CH-210 Chemistry and Biochemistry Seminar (Variable; Yearly; 1.00 Credit) This course is designed to begin the journey for from students of science to citizens of the scientific community. During the semester speakers will present topics which will help inform the students about the opportunities for research and collaboration. Additionally, an emphasis will be made on post-graduation

career opportunities and planning. Must have at least sophomore standing and have a POE in Chemistry, Biochemistry or Chemistry Secondary Education.

CH-222 Inorganic Chemistry (Spring; All Years; 4.00 Credits; N) CH 222 is a one-semester course of Inorganic Chemistry that builds on chemistry knowledge acquired in CH 142 (Integrated Chemistry Principles I). The Inorganic Chemistry course is designed for all students having "chemistry" in their POE title but it will serve any student who wants to learn about "chemistry of elements" because it covers chemistry of all elements from the periodic table with exception of organic carbon chemistry. The class also introduces students to theoretical concepts such as molecular symmetry, molecular spectroscopy, and theory of complexes. Part of the class is a 4-hour laboratory session which introduces students into synthetic inorganic chemistry and characterization of inorganic compounds. Syntheses, reactivity, and characterization of main group element compounds and transition metals will be practiced. Pre-Req: CH-142 and CH-143. Pre-Req or Co-Req: CH-144 and CH-145.

CH-232 Organic Chemistry I (Variable; Yearly; 3.00 Credits; N) Students enrolled in CH-242 will become familiar with the fundamental concepts and nomenclature needed to understand and communicate organic chemistry. The course is further designed to teach the structure-function relationships that exist across many classes of organic and bio-organic systems, and therefore provide a foundation for further study in chemistry, biochemistry, biology, and medicine. Prerequisite: CH-144; Corequisite: CH-233.

CH-233 Organic Chemistry I Lab (Variable; Yearly; 1.00 Credit; N) This course will utilize techniques learned in CH-145 and carry out experiments illustrative of concepts learned in CH-232. The course will focus on spectroscopy, organic laboratory techniques and reactions, and compound characterization. This course will also reinforce good record-keeping skills continue to stress safe lab practices. A lab fee is associated with this course. Prerequisite: CH-145. Corequisite: CH-232.

CH-247 Bioanalytical Chemistry (Spring; Yearly; 1.00 Credit; N,QS) Exploration of experimental techniques and topics that are pertinent to the careful analytical evaluation of biologically relevant chemistry. Prerequisites: Take BI-102 or BI-106 (or have instructor's permission) and take CH-232 or CH-242.

CH-252 Analytical Chemistry (Spring; Odd Years; 4.00 Credits; N,QS) This course focuses on the methods that chemists use to identify and quantify compounds of interest and measure their physical properties. Classroom and laboratory time will be spent considering experimental design, measurement techniques, and validation of results in a variety of chemical contexts. Prerequisites: CH-144 and CH-145. Note: A special lab fee is assessed.

CH-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to teach special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary with topic.

CH-312 Biochemistry (Variable; Yearly; 3.00 Credits; N) The fourth semester of the introductory Chemistry series, this course pulls content from chemistry, biology, mathematics, and history to provide an integrated view of biochemistry. Topics include the use of thermodynamics, equilibrium, non-covalent interactions, kinetics,

separations, biomolecular structure, and genetics to probe and explain biological phenomenon. Prerequisites: Take BI-102 or BI-106 (or have instructor's permission) and take CH-232 or CH-242.

CH-322 Scientific Glassblowing (Spring; Yearly; 1.00 Credit) Course introduces the construction and repair of glassware for scientific purposes. The course starts with a discussion of the properties of glass relevant to glass working. Students then obtain practice in fundamental manipulations; straight, tee, and ring seals. This is followed by more complicated projects utilizing several seals such as condensers. Finally, students choose among a number of advanced topics such as lathe use, vacuum rack construction, and artistic creations. Note: A special course fee is assessed. Prerequisites: Junior or Senior standing or permission of the instructor.

CH-332 Organic Chemistry II (Variable; Yearly; 4.00 Credits; N) A continuation of the study of organic chemistry begun in CH-232 and CH-233. Special emphasis is placed on advanced aspects of structure and reactivity, with careful attention to the methodology and tools of synthesis. Topics include aromatic chemistry, enolate chemistry, pericyclic reactions, retrosynthetic analysis and various aspects of stereoselectivity. Prerequisites: Take CH-232/233 or CH-242/243.

CH-340 Wine Chemistry (Variable; Variable; 2.00 Credits; N) This is a 2-credit course dealing with the theoretical study (1 credit) of chemical processes that are involved in wine formation and that influence appearance, flavor, and aroma of different wines including such topics as barrel aging and corkage, wine and health, wine faults, and wine laboratory practices and procedures associated with vineyard to bottling lifecycle of wine. An intensive hands-on component (4 hours a week) enabling authentic experience of wine-grapes growing, wine making and wine tasting is part of the course (second credit). Prerequisites: 2 semesters of college Chemistry or permission of the instructor. Must be 21 years of age or older.

CH-352 Physical Chemistry I (Fall; Yearly; 3.00 Credits; N) In this course students will investigate the physical characteristics and interactions of matter. Topics covered will include thermodynamics, kinetics, quantum mechanics, and molecular spectroscopy within the contexts of chemistry and biochemistry. In addition, molecular modeling techniques will be briefly introduced. Prerequisites: Take CH-144, MA-130, and either PC-200 or PC-202.

CH-353 Physical Chemistry Laboratory (Variable; Yearly; 1.00 Credit; N,Q,CW) In this course, students will gain hands-on practice at obtaining data pertinent to physical chemistry through laboratory experiments. Experiments will be performed that highlight material from Physical Chemistry I (CH-352). A significant component of each lab will involve molecular modeling. Co-requisite: CH-352.

CH-354 Physical Chemistry II (Spring; Yearly; 3.00 Credits; N) In this course students will advance their understanding of physical chemistry concepts through primary literature sources and discussion. The course will focus on literature from the beginnings of thermodynamics and quantum mechanics as well as more modern research. Prerequisites: Take CH-352, MA-230, and either PC-201 or PC-203.

CH-362 Chemical Synthesis (Fall; Yearly; 2.00 Credits; N,CW)

CH-362 is an advanced laboratory-based organic and organometallic synthesis class. Through the completion of two to three multi-component projects, students will gain a better understanding of the requirements of advanced laboratory research and will learn how to communicate as organic chemists. Overall, the course is designed to help students mature into skilled citizens of the scientific community. Prerequisite: CH-232.

CH-372 Instrumental Methods (Fall; Odd Years; 3.00 Credits; N) The primary tools that chemists use to characterize chemical species involve increasingly complex instrumentation. We will explore the principles and methodology of various types of instrumental methods and will analyze data resulting from these techniques. Prerequisite: CH-232 or CH-242.

CH-385 Advanced Chemistry Lab (Variable; Yearly; 2.00 Credits) This course is a culmination or capstone of your laboratory experiences. You will draw upon your knowledge and experience from previous classes to identify a chemistry related question, design experimental work, and report your findings. The focus of each semester will vary depending on the specific instructors. Prereqs: CH-222, CH-232, CH-252, CH-312, and CH-352, plus junior or senior standing.

CH-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Advanced specialized topics in chemistry and related areas. Topic titles may vary from semester to semester. Note: abbreviated ST: (title); students may take more than one "ST:" course for credit. Offered at the discretion of the department to qualified students.

CH-401 Advanced Organic Chemistry (Either Semester; Variable; 3.00 Credits; N) Discusses selected topics in organic chemistry with emphasis on general principles, including chemical bonding. Recent literature is used. Prerequisite: CH-332 or CH-262.

CH-406 Advanced Inorganic Chemistry (Either Semester; Variable; 3.00 Credits; N) Completes an introductory study of inorganic chemistry at an undergraduate level. Theoretical topics, like electronic structure (molecular orbital theory), molecular symmetry, theories about complexes, reaction mechanisms of complexes, catalysis, introduction to solid state chemistry, and a role of metals in life processes are covered. Students will become familiar with inorganic chemistry journals, SciFinder and the Cambridge Structural Database. Prerequisites: CH-222 and CH-352.

CH-418 Advanced Biochemistry (Fall; Yearly; 3.00 Credits; N) Advanced Biochemistry is the third semester of the Biochemistry and Molecular Biology (BMB) curriculum for Biochemistry POEs, expanding the content of the previous two semesters. Stressing techniques and instrumentation, the course is comprised of student-led learning modules, which are created around the primary literature with the help of the instructor. Topics may include metabolism, systems biology, or genomics. Prerequisite: CH-312 or CH-342.

CH-489 Chemistry & Biochemistry Capstone (Variable; Yearly; 3.00 Credits) This course is the capstone experience of the chemistry and biochemistry programs of emphasis. In this course, students will reflect on the totality of their chemistry or biochemistry education and relate it to their broader Juniata education. This course will develop and emphasize students' roles as active and empowered members of the scientific community. Pre-Req: Senior standing.

CH-490 Chemistry Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; N) See the chapter, "Special Programs" under Internships in the catalog. Note: May be repeated up to a total of 9 hours of credit. Corequisite: CH495. Prerequisite: Permission and Jr. or Sr. standing.

CH-493 Senior Thesis (Spring; Yearly; 2.00 Credits; CW) Designed for students who are carrying out senior research; students will write a senior thesis describing their work, part of the requirements for graduating with a distinction in chemistry, and prepare an oral presentation of their work. Prerequisites: CH492. Corequisites: CH494

CH-494 Chemistry Research (Fall & Spring; Yearly; 1.00-4.00 Credits; N) Individual research projects directed by faculty members. Prerequisite: Permission of the instructor.

CH-495 Chemistry Research/Sem. (Fall & Spring; Yearly; 2.00-6.00 Credits; N) Requires students to reflect on the internship experience and /or pursue research related to the placement. Corequisite: CH 490. Prerequisite: permission.

CH-499 Chemistry Special Topics (Variable; Variable; 1.00-4.00 Credits; N) Allows departments to offer topics not normally taught. Prerequisites and corequisites vary by title.

CH-TUT Chemistry Teaching Assistant (Variable; Variable; 0.00-4.00 Credits) See catalog.

COMMUNICATION & THEATRE ARTS

CM-101 First Year Seminar (Fall; Yearly; 1.00 Credit; H) This one credit course is an introduction to the department and its offerings in terms of areas of study, practicum, internships, and programs abroad. Opportunities with our communication club and honor society are also explored. Together we explore areas of research, teaching, and the professional & graduate school opportunities that you need to know, as you choose your POE, plan your course of study and plan for your future. Overall, we hope to inspire you to find the joy and challenge we as a department experience in the study of communication. This course is for first year and sophomore students who have already declared Communication as their POE or who are genuinely considering Communication as a POE or secondary emphasis.

CM-130 Introduction to Human Communication (Either Semester; Yearly; 3.00 Credits; S) Surveys the fundamental tenets of human communication through application. This course is concerned with how and why we speak, listen, respond, and strategize through the uses of verbal and nonverbal symbol systems.

CM-132 Message Analysis (Variable; Yearly; 3.00 Credits; H,CS,WK-HT) The study of rhetoric investigates the art of persuasion. The course introduces the basic rhetorical concepts and language we need to make sense of the sea of messages we swim in. The course aims to sharpen your ability to reason, reflect, send, perceive and discern messages in a variety of contexts. Upon completion of this course, students understand several humanistic perspectives toward communication and are able to apply the basic tools of rhetorical analysis. Students have an increased awareness of the ways in which our symbolic behaviors shape our social lives. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109.

CM-133 Mass Media and Society (Either Semester; Yearly; 3.00 Credits; H,CS,WK-HT) This course provides an orientation to media industries, the academic field of media research, and the influence of media on our politics, society, and everyday lives. Through a broad survey of media technology, theory, issues, and policy, it offers a media literacy framework for critically evaluating media use and content, and positions you as a critical consumer, scholar, and citizen. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109.

CM-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows departments to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by topic.

CM-200 Art of Public Speaking (Either Semester; Yearly; 3.00 Credits; CS,H) Seeks to develop and improve fundamental principles and methods of selecting, organizing, developing, and communicating a line of reasoning and evidence for constructive influence in speaking situations. Students make three formal presentations, analyze messages, and improve their listening skills. Prerequisites: Sophomore, Junior, or Senior standing.

CM-210 Race and Language in the United States (Variable; Yearly; 3.00 Credits; SW-US) This class examines racism as a cultural system observed through our beliefs and practices about spoken English. The goal of the course is to develop an understanding of how linguistic prejudice contributes to the cultural programs of racism in the US.

CM-214 Cinderella (Fall; Yearly; 3.00 Credits; CA,H) Surveys the historical and cultural origins and pathways of the Cinderella story. Students use folk-tale research to identify the thematic content of the Cinderella story, explore its reach, and understand its ubiquity in American popular culture. The course includes a major project for which students conduct library research in order to write an original Cinderella based in a culture for which we do not have an extant copy. Prerequisites: FYC101, EN110, or EN109.

CM-220 Group Communication (Variable; Yearly; 4.00 Credits; H,CS,SW-LE) This course is designed to improve communication in small-group task and problem-solving situations. We will explore ways of developing communication strategies for effective participation in groups. Students will gain practical experience using these skills and theories by working as a group to address the needs of a community partner. Pre-Req: CM-130. Pre- or Co-Req: Take FYC-101 or EN-110 or EN-109.

CM-230 Interpersonal Communication (Either Semester; Yearly; 3.00 Credits; H,CS) Introduces students to the various theories and styles of one-on-one communication. It emphasizes the transactional approach in the study of the communication process as it occurs in interpersonal relationships. It explores interaction as a way by which we come to know ourselves and each other. Prerequisites: CM130.

CM-245 Photojournalism: the Ethics of Seeing (Variable; Yearly; 3.00 Credits; F,H,SW-ER) This introductory course explores the ethical responsibility in photojournalism. We all take pictures and know of photos that have changed us and changed the world. What are the ethics of seeing - a technical term which questions point of view and the understanding of the cultures and social issues portrayed. Pre-req or co-req: FYC-101 or EN-110 or EN-109

CM-250 LEAD:Listen & Empath Advocacy Diversity (Variable; Yearly; 3.00 Credits; H) Through the creative sharing of stories, the ontology of listening, reflective readings, writings and conversation we will explore diversity and multicultural communication as unfolding dimensions of our intersectionality, especially as it relates to leadership.

CM-261 Communication Studies Abroad I (Spring; Variable; 2.00 Credits; I,H,SW-GE) Students will spend the spring semester preparing for a trip abroad to visit a partner institution. Students will cover topics in the field of Communication such as intercultural and group communication and learn about the target country/culture through film, guest speakers, news, and readings. During the summer term, we will travel to the country for two weeks. Students must take both CM-261 and CM-262. NOTE: The total fee for the experience is split between the two courses, with half on the spring semester billing and the other half on the summer term billing.

CM-262 Communication Studies Abroad II (Summer; Variable; 1.00 Credit; I,H,SW-GE) Students will spend the spring semester preparing for a trip abroad to visit a partner institution. Students will cover topics in the field of Communication such as intercultural and group communication, and learn about the target country/culture through film, guest speakers, news, and readings. During Summer Term, we will travel to the country for two weeks. Prereq: CM-261. NOTE: The total fee for the experience is split between CM-261 and CM-262, with half on the spring semester billing and the other half on the summer term billing.

CM-289 Communication Practicum (Fall & Spring; Yearly; 1.00-2.00 Credits; F,H) A Practicum in Communication encourage students to: (1) develop skills in analyzing and delivering public presentations; (2) assess, interpret and analyze messages data among diverse audiences; (3) understand speech communication in a variety of contexts; (4) appreciate public address from a historic perspective; and (5) participate actively in the communication field. This course is repeatable up to 4 credits.

CM-290 The Metaverse (Fall; Yearly; 3.00 Credits; H,CW,CS) This introductory course focuses on how information technologies shape the way we think and organize ourselves. In studying the technology of the book, social media and the metaverse, students explore change and technology as central to the decision making of leaders. Prerequisites: CM133 or IT110 or IT111.

CM-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows departments to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by topic.

CM-300 Professional Presentations (Spring; Yearly; 3.00 Credits; CS,H) Designed for students to improve and polish their speaking skills for effective presentations in professional settings. It is a performance course with emphasis placed on speech structure, audience adaptation, style of presentation (oral report and manuscript reading), with the use of PowerPoint and/or Prezi. Video is used to help speakers understand the relationship between their speaking behaviors and responses of listeners. Prerequisites: CM200.

CM-310 Understanding Health Inequity (Variable; Yearly; 3.00 Credits; S,WK-SI) In this class, students will learn how to read,

understand, and conduct social research about individuals and systems that create disparity in health care and outcomes. The research that we will read and learn to conduct will rely on texts and stories rather than numbers and statistics. The class will address questions such as: what conditions are present that allow some populations greater access to health care than others? What social problems underlie the disparities in health outcomes for women, people of color, and people from low-income backgrounds. Students will gather and analyze their own research data. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

CM-330 Media Analysis (Spring; Yearly; 3.00 Credits; H,CW,CS) Designed to explore analytical approaches applied to a variety of media, including advertising, television sitcoms, new shows, propaganda, film, music and architecture, in order to ascertain the persuasive messages inherent in each artifact. By examining the rhetorical choices revealed by each method of criticism, we can better understand the structure of message design, the medium and in a larger sense the cultural values that shape both. Prerequisites: CM132 or CM133.

CM-340 Intercultural Communication (Either Semester; Yearly; 3.00 Credits; H,I) This course examines symbolic patterns of communication as they relate to issues of diversity. Interactive skills needed to open channels of communication between and among people of diverse backgrounds are analyzed and developed. A multi-cultural approach to the study of human communication serves as a basis for exploring issues of diversity that include but are not limited to race, gender, class, ability, orientation, religion and ethnicity. Prerequisite: CM230.

CM-365 Organizational Communication (Either Semester; Variable; 3.00 Credits; H,S,CW) Examines the strategic uses of communication by individuals in organizations and by organizations as a whole in the pursuit of organizational goals. Provides students with a theoretical vocabulary to analyze communication in organizational settings in order to understand processes such as social networks, leadership, and power. Focuses on personal and organizational ethics in work place communication. Prerequisites: CM130 and CM230 and CM220.

CM-399 Special Topics (Variable; Variable; 1.00-4.00 Credits; H) Allows departments to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by topic.

CM-400 Communication Philosophy (Variable; Variable; 3.00 Credits; H,CS) Topics in communication philosophy examine the relationship between thoughts, words, and actions. The study of rhetoric will be the basis for each course as it applies to specific contexts: health care, public discourse, diversity, conflicts and debates, political campaigns, and family dynamics. Prerequisites: CM130 and CM230.

CM-400A Health Communication (Spring; Odd Years; 3.00 Credits; H) Explores how communication functions to promote health, the important role of information in health care, the development of communication campaigns to promote health awareness, alternative and multicultural approaches to health care, the promotion of ethical health communication, and the use of new health communication technologies. Prerequisites: CM130 and CM230.

CM-400B Storytelling (Variable; Variable; 3.00 Credits; H,CS) This

performance course gives students the opportunity to examine the oral traditions of the language through the art of reading, writing, listening, watching and telling stories. Stories are at the heart of the human experience. They form the foundation for many academic disciplines. Stories help us to understand our own beliefs, values traditions and civilities. This course aims to strengthen our appreciation and understanding of storytelling, old and new.

CM-400C Advanced Interpersonal Communication (Fall; Variable; 3.00 Credits; H,CS) This course develops the theories and applications of interpersonal communication by focusing on various perspectives of communication with creativity, conflict in interpersonal relationships, listening and language appreciation. Students are expected to analyze and discuss specific conversational patterns that are both experienced and observed. How these patterns form and transform the conversational dynamic of an interpersonal relationship is explored. Prerequisites: CM130 and CM230.

CM-400D Rhetoric of Coming Out (Variable; Variable; 3.00 Credits; H) This course aims to explore diverse uses of rhetoric applicable to the coming out process. Cultural, social, political, physical, institutional, and financial constructs of the closet are studied in an effort to understand and appreciate the coming out process. Rhetorical constraints, functions, and strategies involved in the construction and deconstruction of the closet, both perceived and real, and of coming out the closet are illuminated. While various perspectives of rhetoric are covered, a classical perspective is most closely examined and applied.

CM-400E Listening (Variable; Variable; 3.00 Credits; H,CS) This course invites the students into an exploration of transactional communication by focusing on message reception. How is a message received? What interrupts reception? How can we determine if and when a message has been transmitted? How are messages interpreted? Specifically, we will study diverse perspectives of the listening process. This includes the study of (1) the pragmatics of listening; (2) the epistemology of listening; (3) the aesthetics of listening; and (4) the ontology of listening. Listening is viewed primarily as an expression and extension of creativity. We also examine and develop the relationship between listening and leadership. Prerequisites: CM130 and CM230.

CM-400F Rhetoric of Spirituality (Variable; Variable; 3.00 Credits; H) This course invites students to discover value and meaning in the rhetoric used to describe and define God. Who is and what is God? How do we come to learn about and experience divinity? What role does language play relevant to divinity? Specifically, we will be illuminating epideictic rhetoric and how it functions to establish and sustain faith-based communities. Rhetorical analyses and discussions will guide our efforts to question foundational assumptions embedded in religious values. Such questioning helps to strengthen understandings of spirituality and of the divine.

CM-401 Senior Seminar (Fall; Yearly; 1.00 Credit; H) Senior Seminar in Communication is an opportunity to refine your understanding of your communication POE and experiences and their application to the professional world of business or graduate school. Students will reflect on their communication expertise, prepare resumes and interviewing techniques, network with alums in communication, and communicate their expertise. This course intends to make explicit the strong knowledge base acquired in a Communication POE and to explore the opportunities available in the field of communication. Prerequisites: Senior standing.

CM-405A Women, Work & Identity (Fall; Variable; 3.00 Credits; S) Women. Work. Identity. These three words are related in a complex web that many of us struggle to untangle for our entire working lives. In this course, we identify and name the components of the relationships among these words—all in the context of the unique perspective that the communication discipline offers. Prerequisites: CM130 or CM230 or CM220 or CM365 or permission of the instructor.

CM-420 Media Studies (Variable; Variable; 3.00 Credits; H,CS) Courses examine mediated persuasion both in its theory and criticism. They focus on theories of rhetoric that have influenced our modern understanding of media and communication technologies. Areas of application such as public address, communication technologies, digital media, politics, and mass media form the emphasis. Depending on the emphasis the subtitle changes after the title Media Studies. Prerequisites: CM132 or CM133.

CM-420A Hollywood Films (Variable; Variable; 3.00 Credits; H,CW) In this course we explore one visual medium: film. Hollywood film is understood as mainstream media which is meant for a general audience and with strong box office constraints. A rhetorical perspective insists on the presence of an audience which is not necessarily of interest in all types of film study but will be crucial in our discussions. We relate theories, methods of production, and criticism to our work but it is not limited to them. This course is an opportunity for students to explore what mainstream films mean and why they are such an important cultural phenomenon. Prerequisites: CM132 or CM133.

CM-420B Media Violence (Variable; Variable; 3.00 Credits; H,CW) This media studies course introduces students to basic issues and research surrounding media violence. We take a hard look at media violence and its scholarly research in order to understand the intricacies of both our fascination and repulsion for all of the media's manifestations of violence. Cross-listed in Communication and Peace and Conflicts Studies, this course asks students to critically analyze media violence while integrating current media research into our understanding of violence as a presence in our lives and what we can or should do about it. Prerequisites: CM132 or CM133.

CM-420C Digital Media Studies (Variable; Variable; 3.00 Credits; H) We know we can connect with a friend studying abroad on a 24/7 basis and when we do research on the WWW, the materials, location, time and distance are irrelevant. This course lets us extend our vision to a serious study of how global business, politics and social relations are changing by these various processes of instant connection and perpetual contact. Digital Media are at the heart of this revolution in communication. Necessarily we want to pay attention to the digital divide and the continuities of our lives as these communication changes occur. In looking at the big picture, the scope of these changes is necessarily global, challenging, complex and fast. Hang on to your seats!! Prerequisites: CM132 or CM133.

CM-420D Truth and Lying (Variable; Variable; 3.00 Credits; H,CW) This media studies course introduces students to the theories of rhetoric to understand the question, who can we trust? We pay special attention to the classical period of Rhetoric and the Rhetoric of the 20th century. Rhetoric has been transformed through media. Despite these transformations, rhetoric has always been considered of first importance for the ethical practical conduct of

our everyday lives. How we present or lives our beliefs, attitudes, and commitments is indeed the concern of when we lie and who we can trust in our personal and public lives. Prerequisites: CM132 or CM133.

CM-420E Digital Storytelling (Variable; Variable; 3.00 Credits; H,F,CTDH) Digital stories derive their power in weaving images, music, narrative and voice together, and thereby giving deep dimension and vivid color to characters, situations, experiences, and insights. This course offers students the opportunity to experiment with narratives and their visualization using digital media technologies as a vehicle to tell stories creatively with a clear point of view and audience awareness. Prerequisites: CM133 or 1 of the following courses, CM290 or IT110 or AR404.

CM-490 Communication Internship (Variable; Variable; 2.00-9.00 Credits; H) Communication students may apply their acquired skills and knowledge to on-the-job internships for a semester during their junior or senior year for a total of 9 credit hours. Television stations, radio stations, newspapers, magazines, public relations, advertising agencies and human relations in health organizations are all possible placements. You not only work as full-time members of a business team, but also evaluate and document your growth in a work journal and prepare a portfolio of presentations or publications. Corequisite: CM495. Prerequisite: Communication core and Jr. or Sr. standing.

CM-495 Communication Internship Research (Variable; Variable; 2.00-6.00 Credits; H) In addition to the on-the-job experience provided by the internship, students are required to pursue research related to their placement. An in-depth research paper or presentation is completed during the semester. Corequisite: CM490. Prerequisite: Communication core and Jr. or Sr. standing.

CM-497 Honors Seminar (Variable; Variable; 3.00-6.00 Credits; H,CS) Designed to serve as a capstone course for students who emphasize Communication in their POE. The students will be expected to examine communication theories and research methods relevant to a topic, theme, issue, or problem that has served as an area of special interest throughout the previous two years of study. Students must have Senior standing, have a POE in Communication and meet the 3.40 GPA requirements.

CM-498 Honors Research (Either Semester; Yearly; 3.00-6.00 Credits; H,CS) Designed to serve as a capstone course for students who emphasize Communication in their POE. The students will be expected to examine communication theories and research methods relevant to a topic, theme, issue, or problem that has served as an area of special interest throughout the previous two years of study. Students must have Senior standing, have a POE in Communication and meet the 3.40 GPA requirements. Prerequisite: CM-497.

CM-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows departments to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by topic.

CM-TUT Communication Teaching Assistant (Variable; Variable; 1.00-4.00 Credits) This tutorial provides a structure for the experience of teaching in Communication and reflection on classroom dynamics.

Integrated Media Arts

IM-100 Integrated Media Art Seminar (Spring; Yearly; 1.00 Credit; H) This one credit course is an introduction to the Integrated Media Arts program and its offerings in terms of areas of study, practicum, internships, on campus projects and programs abroad. Meeting the faculty and learning of their interests and research goals is essential to finding your place in the department. Opportunities for Study Abroad, Internships and networking with Alumni are all part of this practical course with opportunities for written reflection and presentations. Together we explore your best options in professional and graduate school opportunities to inform your choice of POE and plan your course of study.

IM-110 Principles of Digital Media (Fall & Spring; Yearly; 3.00 Credits; CTDH) An introduction to the concepts of digital media. Students will develop an understanding of the basics of digital media, the technology surrounding the creation and use of digital media, and its association with art, communication, and information technology. Through a laboratory context of experimentation and discussion, the course explores the use of various creative software programs used to create artistic and expressive media content. The course provides an overview of media formats, media creation, the fundamental properties of the tools required for media manipulation, and insight into the artistic, social, psychological, and legal aspects of digital media. Restrictions: IMA or Art POE or secondary emphasis, or by instructor permission.

IM-199 IM Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer topics not normally scheduled.

IM-241 Info. Discovery and Architecture (Fall; Yearly; 3.00 Credits; S,QS,CTGIS) This course considers various aspects of organizing digital information for public consumption. Data representation, overviews of file formats, storage organization, modern database structures and web site organizations provide a technical dimension of information. The visualization, graphical and basic statistical analysis of data is then considered for information presentation. Data mining techniques covered offer information discovery methods. Prerequisite: IT110 or IT111 or CS110 or permission.

IM-242 Info Visualization (Fall; Variable; 3.00 Credits; N,CTDH,CTGES) This course considers the various aspects of presenting digital information for public consumption visually. Data formats from binary, text, various file types, to relational databases and web sites are covered to understand the framework of information retrieval for use in visualization tools. Visualization and graphical analyses of data are considered in the context of the human visual system for appropriate information presentation. Various open-source and commercial digital tools are considered for development of visualization projects. Prerequisite: IT 110, IT 111, IM 110, DS 110, or CS 110 or permission.

IM-250 Digital Audio Production (Spring; Yearly; 3.00 Credits; F,CTDH) Digital Audio Production introduces the student to the fundamentals of capturing, editing and reproducing sound, using digital tools. Hands on studio work combines with basic acoustic theory to help conceptualize the bridge between the analogue and digital worlds. The final project for the course puts the student in teams to record, edit, mix and do simple mastering on a full length CD.

IM-298 Integrated Media Practicum I (Variable; Yearly; 3.00 Cred-

its; SW-LE) Credit option for students who are applying their classroom theory by working on IMA projects on- or off-campus. Level (298, 398 or 498) is dependent upon the extent of the project and will be determined by the professor. By instructor permission only.

IM-310 Social Media (Variable; Variable; 3.00 Credits; F) This course will introduce students to the context and forms of social media. We will explore the theories and practices of narrative expression in online context, explore social media as culture and study the impact of "the sharing economy." What is social media, who uses it, who gains from it, and how is it transforming new media as well as traditional media. One of the outcomes of social media is that everything is connected, creating massive amounts of user generated content and data. Students will learn to analyze, design and visualize this data. We will also focus on the social norms of user communities and how we can leverage it to better understand emerging technologies. Students will have the opportunity to explore both theory and practice of social media through writing assignments, presentations, curating and creating creative content, and participating on both online and offline discussions. Prerequisites: IM110 or IT110 or IT111 or CS110.

IM-360 Digital Video Production (Spring; Even Years; 3.00 Credits; F,CTDH) Video Production I is a practical hands-on experience with cinematography, audio production, and lighting. Students learn the necessary skills to tell a well produced digital story with appropriate technical knowledge to enhance the narrative and audience engagement. This course will teach students how to work as a professional videographer by expanding digital media knowledge and techniques. Students will learn the technical foundations of video production, camera operation, lighting, audio acquisition and editing. Students will be encouraged to investigate the impact of video content based on the viewer in addition to artistic potential through digital storytelling. Prerequisites: IM110 or permission by instructor with prior video experience.

IM-361 Video Production II (Spring; Yearly; 3.00 Credits; F,CTDH) Digital Video Production II allows students to work from ideas to a final video production that is ready to showcase at a film premiere, enter into film competitions, or share with a client as a professional commercial for their business. From preproduction planning all the way to post production editing, students will work on a series of videos with full creative rights. Students will be required to oversee planning, storyboarding, shooting, editing, and final exporting. Students with prior video production experience are preferred. Prerequisite: IM360 or by instructor permission.

IM-375 Community Design Lab (Fall; Yearly; 4.00 Credits; SW-LE,CTDH) Community Design Lab (formerly Integrated Media Arts Lab I) is a laboratory context of experimentation and discussion for students in the IMA Program. Students are given the opportunity to engage in a reciprocal partnership with a local community partner. Working in a team-driven environment with a local community partner students propose, plan, and complete a real-world design project. The course includes reflection, design deliverables, and client presentations throughout the semester. Prerequisite: IM-110, sophomore standing or higher.

IM-376 Business of Design (Spring; Yearly; 3.00 Credits) Business of Design (formerly Integrated Media Arts Lab II) is a laboratory context of experimentation and discussion for students in the IMA Program. The course explores the methods and practices of creative industry standards and professional business practices of

being a creative entrepreneur in a competitive world. Students will work on multiple individually driven creative projects to find their personal brand including the development of their online presence as a self promotion tool. By the end of the semester students will understand the business side of creativity including ethical obligations, intellectual property, contracts, negotiation techniques, time tracking, and pricing in a business setting. Pre-Req: sophomore standing or higher.

IM-398 Integrated Media Practicum II (Either Semester; Yearly; 3.00 Credits; SW-LE) Credit option for students who are applying their classroom theory by working on IMA projects on- or off-campus. Level (298, 398 or 498) is dependent upon the extent of the project and will be determined by the professor. By instructor permission only.

IM-399 Special Topics (Variable; Variable; 1.00-4.00 Credits)

IM-490 IM Internship Need Paperwork (Variable; Yearly; 2.00-6.00 Credits) See catalog.

IM-495 Internship Seminar (Variable; Yearly; 2.00-9.00 Credits) See Catalog.

IM-496 IMA Seminar (Fall; All Years; 3.00 Credits) This course is designed to serve as a capstone course for seniors who emphasize Integrated Media Arts in their POE. Students are expected to examine design theory and research methods relevant to a topic, theme, issue, or problem that has served as an area of special interest. This course is intended to allow students to develop, compose, organize, revise, and edit their own writing. Through written assignments students will have the opportunity to produce a thesis or creative project. Students must have senior standing and have a POE in IMA (designated or individualized). Distinction may be achieved if the candidate meets the IMA Distinction requirements.

IM-497 IMA Research (Spring; Yearly; 3.00 Credits) This course is designed to serve as a capstone course for seniors who emphasize Integrated Media Arts in their POE. Students are expected to examine design theory and research methods relevant to a topic, theme, issue, or problem that has served as an area of special interest. This course is intended to allow students to develop, compose, organize, revise, and edit their own writing. Through written assignments students will have the opportunity to produce a thesis or creative project. Students must have senior standing and have a POE in IMA (designated or individualized). Distinction may be achieved if the candidate meets the IMA Distinction requirements.

IM-498 Integrated Media Practicum III (Either Semester; Yearly; 3.00 Credits; SW-LE) Credit option for students who are applying their classroom theory by working on IMA projects on- or off-campus. Level (298, 398 or 498) is dependent upon the extent of the project and will be determined by the professor. By instructor permission only.

IM-TUT IMA Teaching Assistant (Variable; Variable; 1.00-4.00 Credits)

Theatre Arts

TH-120 Tai Chi, Level I (Variable; Yearly; 1.00 Credit) This course provides an introduction to Tai Chi movement, history, and philosophy. Students will be able to explain the history of Tai Chi, perform a solo Tai Chi sequence, and engage in push-hands with a partner. Tai Chi is useful to the performing artist both in its philosophy and also in cultivation of kinesthetic and energetic awareness of the body. It also promotes mindfulness and wellbeing.

TH-123 Jedi Academy (Variable; Yearly; 3.00 Credits; F,WK-CE) In Jedi Academy, we will examine the nine major Star Wars films but also some of their historical, philosophical, neurobiology, and creative influences and intersections. We will also train our own bodies, minds, and spirits and search for our own personal definition of health, happiness, and wellbeing. NOTE: This course involves a significant physical strength and condition component. Everything we do in class is scalable and modifiable for all abilities and fitness levels. However, student-athletes must get permission from the Head Coach as activities in this class could lead to over-training. Pre-Req: FYC-101 or EN-110 or EN-109

TH-150 Intro to Theatre Design & Production (Either Semester; Yearly; 3.00 Credits; F,WK-CE) This introductory course exposes students to the theory and practice of behind-the-scenes theatrical production. Course introduces beginning design concepts, technical phases, and production organization found in modern production work. We look at different periods of theatrical design, the evolution of theatre technology, as well as the artistic processes of scenic, lighting, sound, and costume design. We look at the imbedded cultural biases on gender and race present in the technical and design elements of production. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109.

TH-155 Beginning Appl in Theatrical Production (Either Semester; Yearly; 3.00 Credits; F,WK-CE) This course builds on the foundational knowledge introduced in TH-150 and applies those skills and techniques to activity-based assignments. Students will gain experience in the steps needed to properly design, create, and implement the different artistic and technical elements of a theatrical production. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109.

TH-160 Tai Chi (Fall & Spring; Yearly; 2.00 Credits) This course provides an introduction to Tai Chi movement, history, and philosophy. Students will be able to explain the history of Tai Chi, perform a solo Tai Chi sequence, and engage in push-hands with a partner. Tai Chi is useful to the performing artist both in its philosophy and also in cultivation of kinesthetic and energetic awareness of the body.

TH-161 Play/Making (Variable; Yearly; 3.00 Credits; WK-CE,H,F) Compositions are a collaborative way to rehearse a play, build a play, and nurture ensemble. Built off an idea or theme, book or novel, or an existing play, these short theatre pieces can be woven together into a full-length production or simply stand-alone exercises to deepen an artists' understanding of work. We will be building all of our work off of a central idea with multiple source documents with the goal of creating a final, full-length performance piece.

TH-191 Technical Theatre Lab (Fall & Spring; Yearly; 3.00 Credits; F) This course is geared towards students of all skill levels. Students will gain hands on experience in many different technical aspects of physically producing a show from building sets, to equipment set ups, to lighting. This course deals with a number

of different needs for a varied set of performances. Topics and schedule vary based on performance needs. In addition to the lab based learning students can expect a small number of reading assignments and class handouts (provided by instructor). Assignments and expectations also vary to fit the experience of each student. This is a hands on lab course and can be taken alone or in conjunction with Theatre Arts Practicum. Prerequisites: Permission of the instructor.

TH-192 Technical Theatre Lab (Fall & Spring; Yearly; 3.00 Credits; F) This course is geared towards students of all skill levels. Students will gain hands on experience in many different technical aspects of physically producing a show from building sets, to equipment set ups, to lighting. This course deals with a number of different needs for a varied set of performances. Topics and schedule vary based on performance needs. In addition to the lab based learning students can expect a small number of reading assignments and class handouts (provided by instructor). Assignments and expectations also vary to fit the experience of each student. This is a hands on lab course and can be taken alone or in conjunction with Theatre Arts Practicum. Prerequisites: TH-191 and permission of the instructor.

TH-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

TH-221 Acting I (Fall; Yearly; 3.00 Credits; F) A study of the discipline of acting, including development of concentration methods, creative energy, fine tuning of the vocal and physical instrument and character analysis.

TH-243 Script Analysis (Fall; Even Years; 3.00 Credits; F) Upon successful completion of this course, the student should be able to: Demonstrate a practical understanding of a script as a blueprint for production that can be systematically unpacked and critically analyzed Produce complete analysis of full-length scripts Exhibit critical skills required to enhance participation as a theatre practitioner and an audience member Cultivate an appreciation and understanding of the jobs of theatre artists and technicians and other contributors to theatrical production, Reveal an awareness of the relationship of theatrical experiences of the past with those of the present. Students will leave this course with a better understanding how plays are constructed and, using a prescribed analysis model, be able to be analytical, creative, and critical in the breaking down and rebuilding of an existing play script. Prerequisite: TH105.

TH-262 Solos (Variable; Yearly; 3.00 Credits; F,CW,WK-CE) This course uses playwriting and performance techniques to move from page-to-stage as students create original one-person shows. We will explore a number of different playwriting techniques from self-exploration, interview, and narrative forms. Then we will rehearse and perform the pieces at the end of the semester in a new play festival.

TH-291 Technical Theatre Lab (Fall & Spring; Yearly; 3.00 Credits; F) This course is geared towards students of all skill levels. Students gain hands on experience in many different technical aspects of physically producing a show from building sets, to equipment set ups, to lighting. This course deals with a number of different needs for a varied set of performances. Topics and

schedule vary based on performance needs. In addition to the lab based learning students can expect a small number of reading assignments and class handouts (provided by instructor). Assignments and expectations also vary to fit the experience of each student. This is a hands on lab course and can be taken alone or in conjunction with Theatre Arts Practicum. Prerequisites: TH191 and TH192.

TH-292 Technical Theatre Lab (Fall & Spring; Yearly; 3.00 Credits; F) This course is geared towards students of all skill levels. Students gain hands on experience in many different technical aspects of physically producing a show from building sets, to equipment set ups, to lighting. This course deals with a number of different needs for a varied set of performances. Topics and schedule vary based on performance needs. In addition to the lab based learning students can expect a small number of reading assignments and class handouts (provided by instructor). Assignments and expectations also vary to fit the experience of each student. This is a hands on lab course and can be taken alone or in conjunction with Theatre Arts Practicum. Prerequisites: TH191 and TH192 and TH291.

TH-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

TH-321 Contemporary Scene Study (Fall & Spring; Yearly; 3.00 Credits; F) In this class we delve into scene work from contemporary plays and playwrights who were writing between the years of 1980 to the present. We learn about the play, the playwright and the historical context of the piece. We work in-depth on script and character analysis, moment-to moment work, physical transformation, breath work, and truthful playing of the scene. Prerequisites: TH221.

TH-322 Non-Naturalistic Scene Study (Variable; Variable; 3.00 Credits; F) In this class, we delve into scene work from contemporary non-naturalistic plays and playwrights who were writing between the years of 1960 to the present. We learn about the play, the playwright and the historical context of the piece. We work in depth on script and character analysis, moment to moment work, physical transformation, breath work, and truthful playing of the scene. Prerequisites: TH221 and TH321.

TH-323 Modern Drama Scene Study (Variable; Variable; 3.00 Credits; F) In this class we delve into scene work from plays and playwrights who were writing between the years of 1860-1950 in a canon of work commonly known as Modern Drama. We learn about the play, the playwright and the historical context of the piece. We work in depth on script and character analysis, moment to moment work, physical transformation, breath work, and truthful playing of the scene. This course is intended for Theatre Performance POE students. Prerequisites: TH221 and TH321.

TH-324 Performing Shakespeare (Variable; Variable; 3.00 Credits; F) In this class, we study techniques for performing the work of William Shakespeare; analyze how the text works for the actor; investigate how to develop characters; examine the use of verse and prose; and perform speeches, soliloquies, and scenes. Prerequisites: TH221 and TH321.

TH-325 Acting II (Spring; Yearly; 3.00 Credits; F,CS) Upon suc-

cessful completion of this course, the student should be able to: Meisner-based Practical Aesthetics through script analysis and application to scene work. Develop a deeper confidence in the strength and flexibility of the breath and voice. Collaborate on scene rehearsals with partner in a professional manner Nurture a deeper understanding of her meta-cognition. Integrate strategies for mitigating stress through self-talk, imagery, and meditation. Engender a life-long pursuit of self-improvement and psychophysical mastery. Prerequisite: TH221.

TH-342 Stage Management (Fall; Yearly; 3.00 Credits; F) This course will examine the foundational elements of stage management. Students will create prompt books for existing one-act plays and work side-by-side with playwrights and directors on the final, fully staged production of an original play for our mainstage show. It is possible that stage managers will have the opportunity to work on more than one play. We will examine the requirements and professional protocols of stage management and strategies for overcoming rehearsal obstacles. In doing so, the student will not only recognize aspects of the overall craft of play-making but also develop a deeper understanding of her own personal theatrical aesthetics. The hope is that this awareness will empower the individual artist to continue making new work of her own and not simply relying, as Blanche suggests, "on the kindness of strangers." Demonstrate application of foundational aspects of stage management Demonstrate willingness to accept, give, and apply criticism Identify evidence within a play for plot, character, genre, style, and mechanical technique Integrate all aspects of the artists' life through meta-cognition and self-reflection Collaborate with playwrights, directors, and actors in the production of staged production Prerequisite: TH105.

TH-351 Integrated Experience (Fall; Yearly; 1.00 Credit; F) The goal of the integrated experience is to create a space where the student may reflect on her entire curricular and co-curricular experience at Juniata. In discerning how the myriad experiences have impacted and influenced her over the past several years, she will begin to form a narrative of how those experiences have added up to the artist-student she is today and hopes to be tomorrow. She will use this narrative to form a strategic plan for post-graduation activity and, more immediately, a capstone experience that is directly linked to this Integrated Experience. Upon successful completion of this course, the student should be able to: Research possible future opportunities such as grad school, internships, and career paths Map the curricular and co-curricular experiences you have had thus far into a cohesive narrative of a professional self Write a formal grant proposal Create an e-portfolio for professional marketing purposes Develop a comprehensive capstone experience predicated on the totality of your experience thus far Prerequisites: Permission of the instructor.

TH-391 Technical Theatre Lab (Fall & Spring; Yearly; 3.00 Credits; F) This course is geared towards students of all skill levels. Students gain hands on experience in many different technical aspects of physically producing a show from building sets, to equipment set ups, to lighting. This course deals with a number of different needs for a varied set of performances. Topics and schedule vary based on performance needs. In addition to the lab based learning students can expect a small number of reading assignments and class handouts (provided by instructor). Assign-

ments and expectations also vary to fit the experience of each student. This is a hands on lab course and can be taken alone or in conjunction with Theatre Arts Practicum. Prerequisites: TH191 and TH192 and TH291 and TH292.

TH-392 Technical Theatre Lab (Fall & Spring; Yearly; 3.00 Credits; F) This course is geared towards students of all skill levels. Students will gain hands on experience in many different technical aspects of physically producing a show from building sets, to equipment set ups, to lighting. This course deals with a number of different needs for a varied set of performances. Topics and schedule vary based on performance needs. In addition to the lab based learning students can expect a small number of reading assignments and class handouts (provided by instructor). Assignments and expectations also vary to fit the experience of each student. This is a hands on lab course and can be taken alone or in conjunction with Theatre Arts Practicum. Prerequisites: TH191 and TH192 and TH291 and TH292 and TH391.

TH-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

TH-405 Directing (Variable; Variable; 3.00 Credits; F,H,CS) The basic principles of stage directing are offered with areas of inquiry and practical application in: script selection and analysis, audition/casting techniques/considerations, rehearsal preparation, the prompt script, working with designers, decision making, working with actors, being a director/guide(vision, focus, note-taking, and giving), and bringing a script/actors/designers to performance. Each student will select and work on a one-act script which, will be presented to the public in a spring semester festival. Prerequisites: Junior or Senior standing, TH206 and TH243, and permission of the instructor.

TH-421 Acting III: Styles (Fall; Yearly; 3.00 Credits; F,CS) In this course we will investigate the historical and cultural origins of a variety of acting styles, including Greek, Elizabethan, and 20th century non-realistic forms. We will encounter playwrights and theatre makers as wide-ranging as Shakespeare, Beckett, Brecht, and Pina Bausch. At the end of the semester we will perform a public performance of final scenes from a multitude of styles. Prerequisite: TH221.

TH-490 Theatre Internship (Variable; Variable; 2.00-9.00 Credits; H) See Internships in the catalog. Corequisite: TH495. Prerequisite: Permission of the instructor and Jr. or Sr. standing.

TH-491 Technical Theatre Lab (Fall & Spring; Yearly; 3.00 Credits; F) Students will gain hands on experience in many different technical aspects of physically producing a show from building sets, to equipment set ups, and to lighting. This course deals with a number of different needs for a varied set of performances. Topics and schedule vary based on performance needs. In addition to the lab based learning students can expect a small number of reading assignments and class handouts (provided by instructor). Assignments and expectations also vary to fit the experience of each student. This is a hands on lab course and can be taken alone or in conjunction with Theatre Arts Practicum. Prerequisites: TH191 and TH192 and TH291 and TH292 and TH391 and TH392.

TH-492 Technical Theatre Lab (Fall & Spring; Yearly; 3.00 Credits;

F) Students gain hands on experience in many different technical aspects of physically producing a show from building sets, to equipment set ups, to lighting. This course deals with a number of different needs for a varied set of performances. Topics and schedule vary based on performance needs. In addition to the lab based learning students can expect a small number of reading assignments and class handouts (provided by instructor). Assignments and expectations also vary to fit the experience of each student. This is a hands on lab course and can be taken alone or in conjunction with Theatre Arts Practicum. Prerequisites: TH191 and TH192 and TH291 and TH292 and TH391 and TH392 and TH491.

TH-494 Senior Capstone (Fall; Yearly; 1.00-3.00 Credits; F) The Theatre Capstone provides an opportunity for senior theatre students to demonstrate excellence in acting, movement, vocal technique, and either writing or interpretation of existing text of their choosing. Seniors gain hands-on directing experience through the completion of their piece, and will be working with a professional designer. Student projects are based on proposals and may include live performances or film projects. Capstones will be presented to a public audience and mentored by faculty. Seniors may register for this course at between one and three credits, depending on credit needs. Prerequisites: Senior status and Theatre Performance POE.

TH-495 Internship Research Seminar (Variable; Variable; 2.00-6.00 Credits; H) See Internships in the catalog. Corequisite: TH490. Prerequisite: Permission of instructor .

TH-TUT Theatre Tutorial (Variable; Variable; 1.00-4.00 Credits) See Catalog.

Cultural Analysis(CA)

IC-202 Shaping the American Mind (Fall; Yearly; 4.00 Credits; IC) Beginning in the seventeenth century scientific revolution, continuing with a look at the enlightenment thinkers that brought notions of liberty, economics and pluralism to the United States, this course uses the history of ideas to ask why we Americans are and what ideas helped make us this way. Prerequisites: EN110 or EN109.

IC-204 Evolution and American Culture (Spring; Yearly; 4.00 Credits; IC) The Darwinian Revolution, based on Darwinian evolutionary theory, is one of the greatest and most profound human achievements. But today, more than 150 years after the publication of Darwin's Origin of Species, we still have not come to terms with its mind-boggling implications and not fully explored its awesome explanatory power in transforming our thinking of many big issues (e.g. sex and marriage, family, gender, race, morality, human nature, religion, meaning of life, etc.). This course will accomplish something far more interesting than to debate or argue for the truth of evolution theory or how to accommodate our traditional religious beliefs to the framework of evolution and science. To accomplish our objective, we will first trace the development of Darwinian evolutionary theory and reconstruct the Darwinian paradigm. We will then study and explain the nature of the conservative religious and other forms of cultural reactions to Darwinian theory in American culture. And finally, we will investigate the many culturally significant and profound implications of the Darwinian Revolution in our society. Prerequisites: EN-110 or EN109.

IC-205 Modern Knowledge & the Self (Spring; Yearly; 4.00 Credits; IC,CW) Who are we? In what kind of world do we live? What can we know about the world and ourselves and how? This course examines how the modern has changed our answers to these and other questions. Particular attention will be paid to modern and post-modern understandings of scientific and narrative knowledge as well as cultural transformations in the comprehension of the self. Materials include films, novels, essays, and the visual arts. Prerequisites: EN110 or EN109.

IC-206 Remote Field Course Seminar (Variable; Yearly; 2.00 Credits; CW,IC,SW-US) Join us in learning about the U.S. Southwest (New Mexico, Arizona, Utah, and Colorado) and plan on visiting the sites discussed in class and examining the impact on the indigenous people. The course uses an interdisciplinary approach, pulling from the expertise of physics, biology, psychology, and education. The RFC seminar course (IC-206) is scheduled during the spring semester and is paired with IC-207 during the summer term, during which students and instructors travel to the various locations studied during the seminar. Students must take both IC-206 and IC-207 to fulfill the IC or the U.S. Experience general education requirement. The total fee for the experience is split between the two courses, with half on the spring semester billing and the other half on the summer term billing.

IC-207 Remote Field Course (Yearly; 1.00-2.00 Credits; IC,CW,SW-US) This course builds on the introduction to the Southwest the students began in IC-206, by taking them to the field to explore the biology, geology, anthropology, and history of the Southwest desert region from a variety of perspectives. Students explore how humans have historically interacted in this arid environment and how modern culture has placed environmental burdens on the region's resources. This course culminates in a field trip to Arizona, Colorado, New Mexico, and Utah. Half of the total fee is charged with IC-206 in the spring and the other half with IC-207 in the summer. Students must take both IC-206 and IC-207 to fulfill the IC or the U.S. Experience general education requirement. Prerequisite: IC-206.

IC-208 The History of God (Spring; Yearly; 4.00 Credits; IC) This course will give students an introduction to the concept of God in western culture and how our understanding of God has changed from the ancient Hebrews to the modern era. Topics will include how concepts of God have been influenced by politics and culture; the interrelationship between popular and intellectual religion; and how religious belief influences, and is influenced by power. Prerequisite: EN110 or EN109.

IC-210 Comics and Culture (Spring; Variable; 4.00 Credits; IC) This course will explore the role of comics in shaping and reflecting American culture. It will explore the basic structure of comics and graphic novels, the historical birth and evolution of the American comic book, and the counter culture response to these comics. Students will write and draw a short story in comic book format as well as write short assignments and a research paper. Prerequisite: EN110 or EN109. A special fee for supplies and a field trip will apply.

IC-214 Global Climate Change (Variable; Yearly; 4.00 Credits; IC,CONN) This course examines the science and politics of global climate change, including data and analyses in the assessment reports of the UN Intergovernmental Panel on Climate Change. The course also examines how governments and other political

actors craft and shape policies related to climate change. Special attention will be placed on the extent to which public policy is influenced by scientific evidence and political considerations. NOTE: Students are expected to be in their third or fourth year when taking a Connections course.

IC-216 Wine in a Vessel (Fall; Yearly; 4.00 Credits; IC) This course is designed to introduce and foster the introspective practices, theories, and discourse of wine and ceramic vessels as known to man through the ages. These activities have shaped human culture on Earth for thousands of years; students will explore this tradition through wine-making, pottery, and cultural analyses of imbibing. This is a hands-on course that will involve interactive participation in Juniata's vineyard and Ceramic Studio, where wine and containment vessels will be created. Students will write a research paper of their chosen subject-matter (as pertinent to course topics) and are required to keep a journal of their chosen discipline throughout the semester. Both will incorporate revisions, peer and individual. Prerequisites: EN110 or EN109 and permission of instructor. Students must be 21 years of age to take this course.

IC-220 Interpreting the Bible & Constitution (Spring; Variable; 3.00 Credits; IC) Both the Bible and the Constitution have been interpreted very differently at different times and by different people. How can we know which interpretations are right? Is there even such a thing as a "right" interpretation? This course examines the art of interpretation and critically evaluates some common and conflicting interpretations of the Bible and the Constitution. Prerequisites: EN110 or EN109.

IC-223 Islam: Real and Imagined (Spring; Yearly; 4.00 Credits; IC) This course is designed to introduce students to Islam and to the political and cultural heritage of the Islamic world, both in practice and in theory, and from the perspective of both insiders and outsiders. It includes the basics of Islam and the history of the Islamic world's interaction with the West in the recent past. Throughout the course, we will connect the topics and themes of the early era with the concerns of our own era. Focus will not just be on the Middle East, but will also include Islam in the United States and around the world.

IC-225 Theatre of the Observed (Variable; Yearly; 3.00 Credits; IC,CONN) Is empathy a thought or an action? Is it something we have, give, enact, or embody? How is empathy communicated? In this course, we examine the nuances of empathy through reading, speaking, observing, and embodied action. The course brings together methods of social inquiry and creative expression in order to produce an original verbatim theatrical performances and reflection on the human experience known as empathy. NOTE: Students are expected to be in their third or fourth year when taking a Connections course.

IC-229 Spanish & Service in Guatemala I (Spring; Even Years; 1.00 Credit; IC,SW-GE) This spring module serves as extended orientation and preparation for the two-week intensive Spanish and service learning module, IC-230, that will take place immediately following commencement. Students must have intermediate Spanish proficiency equivalent to four semesters of college Spanish or enroll concurrently for a fourth-semester Spanish course. Prerequisites: Completion of SP-230 or a Spanish course beyond SP-230 taught in the target language. Corequisite: IC-230.

IC-230 Spanish & Service in Guatemala II (Summer; Even Years;

2.00 Credits; IC,SW-GE) This two-week summer module in Guatemala follows IC-229, the spring module that provides extended orientation and preparation for this intensive Spanish and service learning experience. Students must have successfully completed IC-229 and have intermediate Spanish proficiency equivalent to four semesters of college Spanish to participate in the course. Prerequisites: Completion of SP-230 or a Spanish course beyond SP-230 taught in the target language. Corequisite: IC-229.

IC-275 Project Management (Fall & Spring; Yearly; 4.00 Credits; IC,CW,CS) This course examines the challenges of providing project management in the information age of global and cultural contexts. Project management as manifested in today's workplace provides both opportunity, and a great responsibility. The role and function of project managers looks very different today than years ago. Change is the norm. Project managers must understand today's challenges and be able to function effectively given a borderless, multicultural, virtual, and diverse group of team members. Prerequisites: FYC-101 or EN-110 or EN-109. This course is not for IT or CS POE students.

IC-290 Czech Castle Collections I (Spring; Variable; 1.00 Credit; IC,SW-GE) This spring semester course provides a basic introduction to the art, music, history, and culture of the Czech Republic and Lobkowitz Collections. IC-290 provides orientation and preparation for IC-291, the two-week experiential learning trip to the Czech Republic that occurs in the summer term. NOTES: Students will earn one credit in spring semester with on-campus meetings and two credits in summer term for the trip that will occur during the summer session. The total fee for the experience is split between the two courses, with half on the spring semester billing and the other half on the summer term billing.

IC-291 Czech Castle Collections II (Summer; Variable; 2.00 Credits; IC,SW-GE) This course is a two-week experiential learning trip to the Czech Republic that occurs in the summer term. Prereq: IC-290. NOTE: Students will earn one credit in spring semester with on-campus meetings and two credits in summer term for the trip that will occur during the summer session. The total fee for the experience is split between the two courses, with half on the spring semester billing and the other half on the summer term billing.

Cultural Analysis Courses:

CA-270 Infectious Disease & Society (Either Semester; Yearly; 3.00 Credits; CA,N,CTGES,WK-SP) This course focuses primarily on the impact of ten human infectious diseases that have changed the world. Each disease is analyzed from five distinct perspectives: Clinical, Historical, Economic, Artistic, and Public Health. We also discuss genomic aspects of the infective organisms and of their human hosts.

DATA SCIENCE

DS-110 Intro to Data Science (Fall; Yearly; 3.00 Credits; N) This course introduces the student to the emerging field of data science through the presentation of basic math and statistics principles, an introduction to the computer tools and software commonly used to perform the data analytics, and a general overview of the machine learning techniques commonly applied to datasets for knowledge discovery. The students will identify a dataset for a final project that will require them to perform preparation, clean-

ing, simple visualization and analysis of the data with such tools as Excel and R. Understanding the varied nature of data, their acquisition and preliminary analysis provides the requisite skills to succeed in further study and application of the data science field. Prerequisite: comfort with pre-calculus topics and use of computers.

DS-210 Data Acquisition (Fall & Spring; All Years; 3.00 Credits; N) Students will understand how to access various data types and sources, from flat file formats to databases to big storage data architecture. Students will perform transformations, cleaning, and merging of datasets in preparation for data mining and analysis. PRE-REQ: CS 110 and DS 110.

DS-352 Machine Learning (Fall; Variable; 3.00 Credits; N) This course considers the use of machine learning (ML) and data mining (DM) algorithms for the data scientist to discover information embedded in datasets from the simple tables through complex and big data sets. Topics include ML and DM techniques such as classification, clustering, predictive and statistical modeling using tools such as R, Matlab, Weka and others. Simple visualization and data exploration will be covered in support of the DM. Software techniques implemented the emerging storage and hardware structures are introduced for handling big data. Prerequisite: CS 110, DS 110, and an approved statistics course: MA 220, BI 305, PY 214 or EB 211.

DS-375 Big Data (Variable; Yearly; 3.00 Credits; N) This course considers the management and processing of large data sets, structured, semi-structured, and unstructured. The course focuses on modern, big data platforms such as Hadoop and NoSQL frameworks. Students will gain experience using a variety of programming tools and paradigms for manipulating big data sets on local servers and cloud platforms. Prerequisites: DS 110 Intro to Data Science and CS 370 Database Management Systems

DS-490 Data Science Internship (Variable; Yearly; 2.00-9.00 Credits) See Internship in the catalog. Requires instructor permission. Corequisite: DS-495

DS-495 Internship Seminar (Variable; Yearly; 2.00-6.00 Credits) See Internship in the catalog. Requires instructor permission. Corequisite: DS-490

DS-500 Data Science Fundamentals (Fall & Spring; Yearly; 4.00 Credits) A graduate level introduction to data science through a focus on the language R. Support tools and libraries such as Rstudio and the tidyverse will be emphasized. Students will complete the data science boot camp (a weekend in person intensive or online equivalent) at the start of this online course.

DS-510 Computer Science Fundamentals (Variable; Variable; 4.00 Credits) A graduate-level introduction to Computer Science Fundamentals through a focus on the Python language. Students will complete the data science boot camp (a weekend in-person intensive or online equivalent) at the start of this online course.

DS-516 Mathematics Fundamentals (Variable; Yearly; 3.00 Credits) Selected topics of discrete mathematics and linear algebra related to data science analysis techniques and algorithms.

DS-520 Statistics Fundamentals (Variable; Yearly; 3.00 Credits) Overview of basic statistical techniques including descriptive sta-

tistics, hypothesis testing, and regression.

DS-525 Data Acquisition & Visualization (Variable; Yearly; 3.00 Credits) A graduate-level introduction to retrieving, cleaning, and visualizing data from widely varied sources and formats. The student will use common data science languages and tools for extraction, transformation, loading and visualizing data sets. Project presentations will have an emphasis on communication skills. Tableau visualization tools and Python libraries are used.

DS-530 Multivariate Techniques (Variable; Yearly; 3.00 Credits) Multivariate statistical techniques including multivariate regression, logistic regression, and dimension reduction techniques. Students will get hands-on experience applying the topics covered to real datasets using R, a powerful and popular open-source statistical computing language. Prereqs: DS-516 and DS-520.

DS-552 Data Mining (Variable; Yearly; 3.00 Credits) This course considers the use of machine learning (ML) and data mining (DM) algorithms for the data scientist to discover information embedded in wide-ranging datasets, from the simple tables to complex data sets and big data situations. Topics include ML and DM techniques such as classification, clustering, predictive and statistical modeling using tools such as R, Python, Matlab, Weka and others. Prerequisite: DS-500, DS-510, or by permission

DS-570 Database Systems (Variable; Yearly; 3.00 Credits) This course focuses on database design and relational structures, data warehousing and access through SQL. Students will use SQL to create and pull data from database systems. NoSQL and data warehousing are also covered to give students the necessary background in database systems. Pre-Req: DS-510

DS-575 Big Data Techniques (Variable; Yearly; 3.00 Credits) This course considers the management and processing of large data sets, structured, semi-structured, and unstructured. The course focuses on modern, big data platforms such as Hadoop and NoSQL frameworks. Students will gain experience using a variety of programming tools and paradigms for manipulating big data sets on local servers and cloud platforms. Prerequisite: DS-500 or DS-510

DS-580 Data Science Capstone (Variable; Yearly; 3.00 Credits) Data science practicum requiring completion of a large-scale analysis project of a given data set. Written and oral communication skills emphasized. Prerequisites: DS-500, DS-510, DS-516, and DS-520, or instructor permission.

EDUCATION

ED-110 Foundations of Education (Fall & Spring; Yearly; 3.00 Credits; S,WK-SI) Discusses the historical and contemporary bases of major political, economic, legal, sociological, and psychological issues affecting public school systems. Students review current issues in education and write a personal philosophy statement. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109. ED-111 is required to be taken concurrently with ED-110 for students with Education Programs of Emphasis but is optional for other students.

ED-111 Foundations of Education Field Experience (Fall & Spring; Yearly; 1.00 Credit; S) Provides a classroom experience for freshmen and students who are interested in education to explore teaching as a career and observe the application of multiple

philosophies, theories, and teaching strategies. ED-110 is required to be taken concurrently with ED-111 for students with Education Programs of Emphasis but is optional for other students.

ED-120 Child Development (Fall & Spring; Yearly; 3.00 Credits; S) Provides an in-depth introduction to child development, cognition, behavior, and learning from conception through middle childhood. Using an ecological approach, students examine characteristics of physical, social, emotional, cognitive and language development at each age; identify typical and atypical development; compare and contrast major theories of development and learning; and explore diverse issues in child development and early education, including gender, culture, language, ability, family, social policy, educational setting, and the influence of heredity and environment. Assignments include readings, research, presentations, and direct observation of young children. Prerequisites: None. Corequisite: Education majors must take ED121 Child Development Lab with ED120.

ED-121 Child Development Lab (Fall & Spring; Yearly; 1.00 Credit; S) Extends and enhances learning in ED120, Child Development, through authentic classroom opportunities to observe and interact with young children and early education professionals, apply knowledge and understanding of child development and theory, analyze and assess development using formal and informal assessment tools, examine portfolios and Individual Education Plans, monitor student performance, and adapt instruction and interactions to meet individual needs, scaffold learning, and guide behavior. Corequisite: ED120 or permission of the instructor.

ED-130 Adolescent Development (Fall & Spring; Yearly; 3.00 Credits; S) Examines human physical, cognitive, and social-emotional development from preadolescence through emerging adulthood. Topics include: identity, sexuality, and gender issues; emotional and behavioral challenges of adolescence, the impact of culture, language, and disability on adolescents, and the role of family, schools, and peers on development. Enrollment priority in this course is given to Education POEs.

ED-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Special topics provides students, particularly those not seeking certification, with experience organizing and communicating knowledge in their fields of study. This may be accomplished in public schools or other areas of social/community work, e.g., community health programs or family planning agencies. Note: titles may vary each semester; students may take each course for credit.

ED-201 Educational Technology (Either Semester; Yearly; 3.00 Credits; S) Introduces educational technology and computer systems and their current applications in the classroom. Topics to be covered include office programs, Web 2.0 programs, multimedia programs, course management systems and web-page construction; classroom presentation software; use of assistive technology and software evaluation. Prerequisites: ED110 and ED111 or ED101 and ED120 and ED121. ED130 may be taken as an alternate prerequisite for ED120/ED121 only.

ED-219 Environmental Education: Past & Future (Variable; Variable; 1.00 Credit; S) Environmental Education is becoming a primary focus and mandated in K-12 schools in Pennsylvania. We'll explore the historical roots, review the standards, review research and prominent researchers in EE, determine the essential elements and find and develop environmental lessons to be incor-

porated in today's classrooms. Prerequisites: ESS-100 or ED-130.

ED-240 Introduction to Students With Exceptionalities (Fall & Spring; Yearly; 3.00 Credits; S) Introduces the culture of exceptionalities within the public special education system. Historical, philosophical, educational, and legal perspectives will be presented. Students will learn the categories of exceptionalities, general characteristics of individuals with exceptionalities eligibility criteria, and the referral process for special education services. Professional and community resources, inclusion and other current issues will be discussed. Prerequisites: ED110 and ED111 and ED120 and ED121 or ED130.

ED-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows departments to offer courses not normally taught.

ED-300S Sign Language I (Variable; Yearly; 1.00 Credit; S) Provides the learner with the understanding of the basic signs used by the deaf and hearing-impaired persons. Goals of the class include problems of communicating with the hearing impaired or deaf persons, as well as knowledge of basic sign language and word endings. Prerequisites: ED120 or ED130.

ED-301 Sign Language II (Variable; Yearly; 1.00 Credit; S) Provides the student with a more advanced vocabulary with the linguistic structure of the language and the principles in building ED302. Prerequisite: ED300.

ED-302 Sign Language III (Variable; Yearly; 1.00 Credit; S) Sharpens everyday communication skills. Students will gain the use of rapid finger spelling in combination with the language of signs for proper nouns, names, addresses, and words that have no signs. The class will also provide a further study of the use of possessives, plural tenses, word markers, and appropriate facial expressions and body language in their use of the language signs. Prerequisite: ED301.

ED-303 Issues in Special Education (Spring; Yearly; 1.00 Credit; S) Using case studies, students will analyze, evaluate, and discuss current issues and trends in the field of special education. Topics of discussion include current litigation and legislation, educational policy, popular trends, and contemporary practices as they pertain to individuals with disabilities and the professionals with whom they work. Within course assignments, students will be required to display critical thinking skills in the analysis and synthesis of issues and concepts. Prerequisites: Take ED-110 and ED-111 and ED-240 and ED-343.

ED-312 Language and the Brain (Spring; Yearly; 3.00 Credits; S) Provides an overview of research-based models of language acquisition, both typical and atypical in children. Topics include theories of language acquisition, neurological bases of speech and language, cognitive, perceptual and motor bases of early language and speech, social and communicative bases of early language and speech, language learning and teaching, relationship of language to literacy acquisition, language differences in diverse learners. Prerequisites: ED120, ED121.

ED-313 Language and Brain Lab (Spring; Yearly; 1.00 Credit; S) Extends and enhances learning in ED312 Language and the Developing Brain. Through participation in classroom settings, students will be able to observe and interact with young children in Kindergarten through Grade 2 and public education professionals, ap-

ply knowledge and understanding of language development and theory, analyze and assess language development using formal and informal assessment tools, monitor student performance, and adapt instruction and interactions to meet individual needs, scaffold learning, and guide behavior. Prerequisites: ED120 and ED121. Corequisite: ED312.

ED-314 English Language Learners (Either Semester; Yearly; 1.00 Credit; S) Focuses on the historical, legal, and cultural issues pertaining to meeting the educational needs of English language learners. Students are be introduced to research based best practices in instruction and assessment strategies for working with English language learners in the general education classroom setting. Prerequisite: ED120 or ED130.

ED-315 ELL Field Experience (Fall & Spring; Yearly; 1.00 Credit; S) Provide students with 30 hours of field experience and participation in a variety of multi-cultural and multi-lingual environments in order to broaden their own experiences, prepare to teach English learners, and work with diverse families. Students accumulate required hours throughout their program, but they formally register for course credit during student teaching or their final semester at Juniata College. Prerequisites: ED314. Graded S (satisfactory) or U(unsatisfactory).

ED-330 Language and Literature I K-1st (Fall & Spring; Yearly; 3.00 Credits; CW,S) Emphasizes methodologies of teaching the language arts (listening, speaking, reading, writing, viewing, and visually representing), including the development of these abilities and the provision for ELL students and students with special needs in language learning. The primary purpose of this course is to bring each student to an understanding of communication as the complex, rich, and primary form of human interaction. Prerequisites: ED311 and ED312 or permission of the instructor.

ED-341 Adaptations for Students With Exceptionalities (Spring; Yearly; 4.00 Credits; S,CW) The purpose of this course is to learn how to develop and manage effective inclusive learning environments for students with disabilities at the secondary level. Content will focus on the knowledge and skills necessary to create an instructional environment that communicates challenging expectations to students while utilizing and modifying research based instructional strategies/resources/technologies. Students will learn the critical components of effective collaboration with parents and professionals. Successful completion of a field experience in an educational setting is also a requirement. Prerequisites: ED110, ED111 and ED240.

ED-342 Assessment Learners (Spring; Yearly; 3.00 Credits; S) This course provide in depth knowledge of and skills in assessment as it pertains to students with disabilities, the special education system, and Pre-K through grade 4 education. Historical perspectives as they relate to contemporary assessment practices are highlighted. Focus is placed on selection and administration of assessment tools, scoring, and interpretation of data for early intervention and special education eligibility. Students will be required to write an Individual Family Service Plan (IFSP) and an Individual Education Plan (IEP). Prerequisites: ED110 and ED111 and ED120 and ED240 and ED121 or ED130.

ED-343 Differentiated Instruction (Fall; Yearly; 3.00 Credits; S) The purpose of this course is to develop skills for the development and management of effective inclusive learning environments at

the Pre-K through Grade 4 level. Content will focus on the strategies necessary to create an instructional and social environment that communicates challenging expectations to students while utilizing and modifying research based instructional strategies/resources/technologies to address individual learning needs. Focus is placed on strategies for establishing positive relationships with students, parents, and professionals. Prerequisites: Take ED-120, ED-121, and ED-240. Corequisite: ED-401.

ED-350 Science Methods (Spring; Yearly; 3.00 Credits; S) This course is for Education students seeking certification in the Pre-K-Grade 4 program and is intended to address the learning needs and best practices for teaching math, science, and technology to Pre-K-4th grade students in the 21st-century classroom. The primary focus of this course will be in the sciences but will include the integration of math, technology, and engineering. We explore science and the process of teaching science to elementary students using students' natural curiosity. The main vehicle of exploration will be an inquiry approach as we discover STEM learning the way we want our students to experience it. Prerequisites: ED-110/111, and ED-120/121 or ED-130. ED-130 may be taken as an alternate prerequisite for ED120/121 only.

ED-370 Practicum in EC Education (Fall & Spring; Yearly; 1.00-3.00 Credits; S) A field experience designed for students seeking early childhood certification. This course is especially desirable for students who have done or will do practicums at the elementary level. Requires sophomore standing and instructor permission.

ED-390 Field Experience in Elementary Education (Fall & Spring; Yearly; 1.00-3.00 Credits; S) A field experience in which students apply theory previously learned in the classroom in a practicum situation. This practicum is not the normal student teaching that is required for certification. Prerequisites: ED110, ED120 and ED121. Note: Available by permission only.

ED-392 Field Experience in Secondary Education (Fall & Spring; Yearly; 1.00-3.00 Credits; S) A field experience in which students apply theory they have learned in a middle or high school setting. This practicum is not the normal student teaching that is required for certification. Available by permission only. May be repeated up to a maximum of 9 credits.

ED-395 Field Experience in Early Childhood Education (Fall & Spring; Yearly; 1.00-3.00 Credits; S) A field experience designed for students seeking Pre K-4 certification. This course is especially desirable for students who have done or will do field experiences at the elementary level. Prerequisites: ED120 and ED121. Course may be repeated up to a total of 3 credits. Available by permission only.

ED-396 Practicum in Special Education (Fall & Spring; Yearly; 1.00-3.00 Credits; S) A field experience primarily designed for students seeking special education certification or interest in education studies. This course provides students with opportunities to gain more experience working with students with special needs in a variety of educational settings. Prerequisites: ED341 Available by permission only.

ED-398 Methods for Foreign Language Education (Fall; Yearly; 4.00 Credits; S,CS) This course is for students interested in teaching foreign languages or English as a foreign language or second language (ESL). This course provides a thorough introduction to

contemporary theories and methods of language pedagogy. Students seeking K-12 certification in foreign languages may take this course instead of ED420 after completing study abroad. It may also be taken by those students who have an interest in teaching English abroad. International students who are here for a semester or a year should also consider taking this course. Prerequisites: ED110 and ED111 and ED130 and ED240 and ED341.

ED-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer courses not normally taught. Note: Titles vary each semester; students may take each special topics course for credit.

ED-401 Junior Field Experience (Fall; Yearly; 1.00 Credit; S) ED-401 is a comprehensive field experience. Students complete at least 4 hours/week of field experience, Prerequisites: ED-120, ED-121, and ED-240. Corequisite: ED-343.

ED-402 Content Area Literacy (Variable; Yearly; 1.00 Credit; S) Provides an in-depth introduction to multiple literacies and their effects on today's 21st Century classrooms. Topics include current research on information literacy, comprehension strategies, teaching ideas, and best practices in content area literacy. Students plan for instruction using the PA Standards Aligned System (SAS). Students pursuing secondary education certification are required to take this course. Prerequisites: ED 240 and junior or senior standing or instructor permission.

ED-403 Math Methods: PreK-6 (Fall & Spring; Yearly; 3.00 Credits; S) Math is all around us and an early start in conceptual mathematics will promote understanding and problem solving for young learners. This course is designed to introduce appropriate teaching strategies that highlight both NAEYC and NCTM standards for the mathematical development of the child (Prek-6). Prerequisites: ED120 and ED121.

ED-410 Families and Teachers Education (Spring; Yearly; 3.00 Credits; S,CS) Promotes understanding of family systems theory and the central role families play in the development of young children. While exploring their own beliefs and values, students examine family diversity and the impact of socioeconomic status, culture, language, lifestyle, and ethnicity on child development. The course focuses on developing effective interpersonal communication skills and strategies to establish culturally sensitive, nurturing relationships among teachers, children, and families. Students learn to build effective partnerships with families and community agencies through home visitation, assessment, case study, portfolio development, leading family workshops, and community involvement. Note: Practicum required.

ED-411 Reading Difficulties (Fall; Yearly; 2.00 Credits; S) This course provides an in-depth review of the literature concerning language-based learning disabilities. The course will address assessment and intervention strategies for struggling readers and writers in early and middle childhood. Formative, summative, benchmark, and diagnostic measures will be addressed as they relate to classroom intervention. Research-based intervention strategies will be analyzed within the perspective of meeting the needs of learners with diverse learning profiles and etiologies for their language-based academic difficulties. Topics included are early identification, research-based assessment and intervention, authentic assessment strategies for diverse learners and ELL's, technology to support instruction. Prerequisites: ED120 and ED121 or

ED130 and ED212. Corequisites: ED412.

ED-412 Reading Difficulties Lab (Fall; Yearly; 1.00 Credit; S) This formal experience requires pre-service teachers to participate in an after school reading clinic for children in grades K through five who are identified as at-risk or struggling readers. Formal and informal assessment tools will be applied and used in decision making for research-based interventions. Communication with in-service teacher mentors and parents will be emphasized. Pre and post measures of achievement will be applied. A formal case report will be completed. Prerequisites: ED120 and ED121 or ED130 and ED212. Corequisites: ED411.

ED-413 Rural Outreach & Reading (Fall & Spring; Yearly; 1.00 Credit) The Rural Outreach and Reading course offers an opportunity for education students to provide data driven reading interventions for primary school children who are struggling in reading and related language skills. Juniata students provide research-based interventions in small group and one-to-one settings two afternoons each week. Juniata Students complete readings related to the intervention, submit reflections, and provide reports of assessment and response to intervention.

ED-419 Pre-Student Teaching Field Experience (Either Semester; Yearly; 1.00 Credit; S) Secondary pre-student-teaching practicum is a required 80-hour minimum practicum in the linked placement where you will be going for student teaching. Students should plan to spend four consecutive hours in their placement each week. Reliable transportation is REQUIRED. Co-Requisite: ED-420.

ED-420 General Secondary Methods (Spring; Yearly; 3.00 Credits; S,SW-ER) **General Secondary Methods & Ethics in Education:** This teacher education course is an overview of general methods for teaching secondary students. It also includes Disciplinary Literacy to help students meet the PA Core Standards. It will also address ethics in education and force students to rethink and challenge the current educational systems. Pre-Req: FYC-101 or EN-110 or EN-109;Co-Req: ED-419.

ED-423 Secondary Education Field Trip (Spring; Yearly; 1.00 Credit; S) **Secondary Education Field Trip** (1 credit): Join in an interdisciplinary course that will design and execute a field trip for local secondary students. This is a practical application course that will highlight the importance of field trips and provide an opportunity for designing and executing a successful field trip.

ED-430 Language and Literacy (Fall; Yearly; 3.00 Credits; S,CW) Three themes are woven throughout the course: helping students develop as strategic readers and writers; research-based best practices in teaching; and managing the classroom and curriculum for literacy instruction. The course will begin with a review of the reading and writing process and the principles of effective teaching of reading, based on the IRA/NCTE Standards for the English Language Arts. Emphasis is placed on meeting the individual learning needs of all the children and on application of the PA Academic Standards for Reading, Writing, Speaking, and Listening standards. Pre-Requirement: ED-310 (optional).

ED-432 Social Studies Methods (Fall; Yearly; 3.00 Credits; S) Focuses on standards, current trends, materials, and teaching methods used in the early childhood and elementary education social studies curriculum. Students review social studies materials and trade books, select and organize content for teaching units, prac-

tice teaching strategies, and learn to individualize instruction. Focus is placed on an integrated and active approach to learning.

ED-433 Pre-Student Teaching Seminar (Fall; Yearly; 1.00 Credit; S) Students complete two half-day practicum visits each week in their upcoming spring semester student teaching placements and meet for a one-hour seminar each week to discuss current issues. Assignments include but are not limited to a weekly reflection journal, orientation to your school packet, observation reports, attendance, and participation. Prerequisites: ED-310 (optional). Corequisites: ED-430.

ED-440 High Incidence Disabilities (Fall; Yearly; 3.00 Credits; S) This course focuses on academic instruction for students with learning disabilities, attention deficit hyperactivity disorder, specific language impairment and mild intellectual disabilities. Topics include systematic teaching, co-teaching, language arts and mathematics instruction, content area instruction and strategy instruction. Prerequisites: ED240.

ED-441 Low Incidence Disabilities (Variable; Yearly; 4.00 Credits; S) Examines research-based practices for instruction and behavior management for students with low incidence disabilities, specifically severe cognitive impairments, low vision and blindness, autism, spectrum disorder, physical or health disabilities, and traumatic brain injury. Students complete a practicum in a low incidence classroom setting allowing them to apply concepts and techniques discussed in class. Students complete a series of assignments in the practicum setting Case studies, guest speakers, and field trips are included in this seminar format course. Prerequisites: Senior standing or permission of the instructor.

ED-442 Social, Emotional, Behavior (Fall; Yearly; 3.00 Credits; S) This course focuses on specific instructional and behavioral research based strategies for students with social, emotional, and behavioral disabilities. Emphasis is placed on school-wide behavior and classroom management systems designed to prevent inappropriate behaviors and promote appropriate and desirable behaviors. Students will learn empirical strategies and procedures for making the general curriculum accessible to students and the role of general and special education teachers in effectively addressing student needs. A major component of this course is the importance of promoting self-determination to facilitate independent learners. Prerequisites: ED240 and ED343.

ED-450 Student Teaching (Fall & Spring; Yearly; 14.00 Credits; S) Student teaching is the capstone experience for students preparing for certification to teach in their content area(s). Students synthesize and apply knowledge of developmental theory, content, and teaching methodology as they design, implement, and evaluate learning experiences in an intensive internship in the classroom. Corequisite: ED451 and completion of all clearances and requirements. Note: A special fee is assessed. Secondary level student teaching is in the fall semester; PreK-4th, and foreign language education student teaching is in the spring semester. Students must have access to reliable transportation.

ED-451 Student Teaching Seminar (Fall & Spring; Yearly; 1.00 Credit; S) In conjunction with student teaching, students attend weekly seminars that are led by the college supervisors. These meetings focus on professional topics and allow students to reflect upon and share their student teaching experience. In addition, students develop interviewing techniques, become familiar

with employment seeking strategies, and develop a portfolio that includes but is not limited to a resume, a philosophy of education statement, lesson plans, and documentation of professional experiences. Corequisite: ED450.

ED-452 Dual Certification Student Teaching (Summer; Yearly; 6.00 Credits; S) The purpose of this course is to provide an additional student teaching experience for individuals who are seeking certification in more than one certification area. In order to enroll the student must have successfully completed all requirements including student teaching in another certification area or who hold Pennsylvania certification in another area. Prerequisite: ED450. Note: Students must enroll in summer school and pay for 6 credits.

ED-494 Internship/Need Paperwork (Variable; Variable; 2.00-9.00 Credits; S) See catalog.

ED-495 Internship Seminar (Variable; Variable; 2.00-6.00 Credits; S) See catalog.

ED-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer subjects not normally taught. Prerequisites vary by title.

ED-TUT Education Teaching Assistant (Variable; Variable; 1.00-3.00 Credits) Teaching Assistant

ENGLISH

EN-100 English I (Fall; Yearly; 3.00 Credits) In this class, students will explore different types of academic writing and learn to view writing as a multiple-step process. Students will work to improve their critical reading and analytical writing skills and will develop familiarity with academic conferencing and revision strategies. Assignments will cover a range of rhetorical modes which may include narrative, informative, analytical, and journal writing. Students will explore the constraints of multiple audiences, individual voice, and writing purpose. This class is designed to prepare students for their entry to college writing but is not equivalent to a first year writing seminar including EN 110: College Writing Seminar.

EN-120 Forms of Literature (Fall; Yearly; 3.00 Credits; H) An introduction to the study of literary forms, including poetry, drama, short story, novel, novella, and essay. Students will read texts from a wide variety of genres and historical periods, to examine how literary forms developed and gain/lost popularity over time. Students will learn the vocabulary and technique of literary analysis.

EN-122 Interpreting Pop Literature (Variable; Yearly; 4.00 Credits; H) Utilizing Harry Potter, The Hunger Games, World War Z, and other popular works of fiction for class, this introductory course will engage students in the fundamental terms and approaches needed to analyze, appreciate and discuss works of fiction at the college level. Students will study introductory elements of literary theory, emphasizing using various social and theoretical perspectives, as a means of learning how to identify cultural and literary meaning within texts.

EN-145 Peer Tutor Training (Fall & Spring; Yearly; 1.00 Credit; H) Peer tutor training is designed to provide an academic experience

that will prepare students to serve as tutors. Students will focus on communication skills, learning styles, need analysis, and tutoring strategies. Prerequisite: EN110.

EN-146 WA Pedagogy and Practice (Fall; Yearly; 1.00 Credit) This course will provide an academic foundation for students who are serving as Writing Associates for first-year classes. Students will focus on how to provide formative feedback to students and maintain clear communication with professors. Coursework will include exploration of writing theory and learning modalities. This course will be required in order to serve as a Writing Associate.

EN-155 The Short Story (Fall & Spring; Yearly; 3.00 Credits; H) An examination of the modern short story form, its development in the mid-19th century to its variety today in such writers as Borges, Barthelme, and Oates.

EN-162 Women and Literature (Variable; Yearly; 4.00 Credits; H,WK-HT) Hostility directed at women's reading and writing often serves as an indicator of a society's anxiety about the social impact of women's artistic and intellectual development. To read is to expand your knowledge of the world and your place in it. To write is to assert that your ideas, opinions, and voice are worthy of attention. This course presents selections from literature by women beginning with 18th century works before moving into contemporary writing. We will pay special attention to the historical and cultural contexts of our readings. Prerequisite: FYC-101 or EN-110 or EN-109.

EN-163 Science Fiction (Spring; Yearly; 3.00 Credits; H) Science fiction-the attempt to make sense of this world through the creation of others-is the quintessential literary genre of the 20th and 21st centuries. This course studies the scope of modern science fiction, from aliens to post-nuclear societies, from time travel to advanced technology. Looks at the most up-to-date authors, as well as some of the classics.

EN-170 World Literatures (Spring; Yearly; 3.00 Credits; H,I) Studies works of African, Asian, Latin American, South American, Caribbean, and Native American literature. Discussions focus on ways literature reveals cultural perspectives and philosophies.

EN-181 Writing Practicum (Fall & Spring; Yearly; 2.00 Credits; H) Students may receive credits for writing, editing, photography, or layout design for the Juniata. Credit hours to the level of participation (based on number of contributions and attendance) and position (reporter, designer, photographer, editor). The course instructor and/or the department supervisor will determine credit limits. Only editors chosen by the instructor may receive 3 credits.

EN-182 Writing Practicum (Fall & Spring; Yearly; 1.00-2.00 Credits; H) Students may receive credits for writing, editing, photography, or layout design for the Juniata. Credit hours to the level of participation (based on number of contributions and attendance) and position (reporter, designer, photographer, editor). The course instructor and/or the department supervisor will determine credit limits. Only editors chosen by the instructor may receive 3 credits.

EN-188 Bad Literature (Fall; Variable; 3.00 Credits; H) Theodore Sturgeon, science fiction writer of the mid-twentieth century, famously said: "90% of everything is crap." He was right, too: there's a lot of crap out there. And we'll be reading some of it in this class.

But-what do we mean when we say literature is “crap “ ? Isn't it just a matter of taste? And if it isn't, how can we tell crap from genius? And who decides? And if 90 percent of everything is in fact crap, does the crap serve any useful function in society? All of these questions and many more, as we enter the wonderful world of bad literature.

EN-191A Unlock Your Voice (Fall; Even Years; 1.00 Credit; H) A Coffeehouse to Celebrate Literature by Women Writers. Students who participate in this practicum will head teams of volunteers to produce all aspects of the program.

EN-191B Lift Ev'ry Voice (Fall; Odd Years; 1.00 Credit) A Coffeehouse to Celebrate Black History Month. Students in this practicum will head teams of volunteers to produce all aspects of the program.

EN-192A Unlock Your Voice (Fall; Even Years; 1.00 Credit; H) A Coffeehouse to Celebrate Literature by Women Writers. Students who participate in this practicum will head teams of volunteers to produce all aspects of the program Prerequisites: EN191A.

EN-192B Lift Ev'ry Voice (Fall; Odd Years; 1.00 Credit) A Coffeehouse to Celebrate Black History Month. Students in this practicum will head teams of volunteers to produce all aspects of the program. Prerequisite: EN191B.

EN-193 Immigrant Voices (Variable; Variable; 1.00 Credit) In 1994 Professor Judy Katz originated the Juniata tradition of an annual coffeehouse. The event has alternated between Lift Ev'ry Voice, a celebration of African American literature, and Unlock Your Voice, a celebration of literature by women. This year you will help create a parallel event that celebrates immigrant writers. Over the course of weekly lunch meetings, you will plan and prepare this year's performance (and help establish this as a regular event). Together, you will choose an event name and this year's theme, design the performance space, recruit volunteers to read selections of immigrant literature, publicize the event, plan music and refreshments, lead rehearsals, decorate the ballroom, and, finally, perform your own chosen piece. Through all of this, you will gain valuable experience in event planning, public speaking, and teamwork. Let's put on a great show!

EN-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topics. Prerequisites vary by title.

EN-199A Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer topics not normally taught. Prerequisites and fees vary by title.

EN-199B Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer topics not normally taught. Prerequisites and fees vary by title.

EN-200 History of the Language (Spring; Odd Years; 3.00 Credits; H,I) Like other languages, English is not monolithic, and it is always on the move. This course examines how English functions now, both in its Standard form and in many of its varieties around the world; how its sounds and structures have changed from its Proto-Indo-European beginnings; and what major factors have influenced those changes. Prerequisites: FYC101, EN110, or EN109.

EN-204 English Colloquium (Fall; Yearly; 1.00 Credit; H) The English Colloquium prepares students for academic expectations in the English department and introduces them to professional opportunities within the discipline. This colloquium is intended for students with English, Secondary Education/English or Professional Writing POEs, individualized POEs with foundation in literature or writing, or students with secondary emphases in English. Pre-requisites: sophomore standing, one EN course beyond EN110, or instructor's permission.

EN-207 Heaven or Hell on Earth (Spring; Even Years; 4.00 Credits; H) In this course we will examine the ways in which specific novels, short stories and films explore various perspectives on nightmarish or ideal societies through alternative political and social ideologies. The class will introduce various literary theories (including Marxism, approaches to feminism and New Historicism) as well as the genre and history of utopian and dystopian literature. *V for Vendetta*, *Sir Thomas More's Utopia*, *Plato's Atlantis* writings, *Children of Men* and other works will be covered during the semester. Prerequisites: EN110 or EN109.

EN-212 Sports Literature (Spring; Odd Years; 3.00 Credits; H) Students will consider ways in which sports literature written over the last eighty years reveals the developing and shifting American ideologies concerning subjects such as race, gender, sexuality, and justice, over that same time period. Students will also develop an understanding of the genres and purposes in various forms of sports literature, including newspaper articles, magazine feature articles, short stories, and novels. Prerequisite: EN110 or EN109.

EN-213 Zombie Nation (Either Semester; Variable; 4.00 Credits; CA,H,SW-ER) Students will explore media that reflect our cultural fixation with zombies. Through analysis and discussion, students will explore the intersections between fictional zombies and actual cultural practices that reflect the mindlessness of a zombie culture. Students will explore the ethical implications of the creation and destruction of zombies. Prerequisite: FYC-101 or EN-110 or EN-109.

EN-215 Boys Will Be Boys (Spring; Odd Years; 3.00 Credits; H) This course explores the experiences of men and boys as represented through works of fiction and analyzed via cultural, economic and social contexts. The course considers “maleness “ as a social construct and how perceptions within American society influence men's actions and the ways in which they perceive themselves, other men, women, and social situations.

EN-217 Disability in Fiction (Variable; Yearly; 4.00 Credits; H,SW-ER) This course considers how various texts portray individuals with disabilities. Via short stories, novels, theoretical articles, films, and memoirs we will explore ways that stereotypical portrayals can stigmatize and discriminate against people with disabilities. The class will also examine narratives and voices that question the definition of ‘normal’ as well as reinterpret traditional representations of disability. We will consider key concepts such as ableism, justice, access, and the medical and social models of disability. The course will also introduce some of the ways that disability intersects with other aspects of identity such as gender, sexuality, race, and class. Prerequisite: FYC-101 or EN-110 or EN-109.

EN-236 Dirty Books (Variable; Yearly; 3.00 Credits; H,CW,SW-ER) In this course, students will explore the ethical questions sur-

rounding the practices of challenging, censoring, and banning books from American public schools and libraries based on objections to various texts' inclusion of sex, homosexuality, vulgarity, violence, and religion/atheism. Prerequisite: FYC-101 or EN-110 or EN-109.

EN-237 Constructing Identities (Either Semester; Variable; 4.00 Credits; CA) Applying various cultural and theoretical perspectives, students will view and read works from Quentin Tarantino, Christopher Nolan, Kurt Vonnegut, Salman Rushdie, David Foster Wallace and others to examine ways that consumerism, technology, social institutions and other facets of modern culture and society shape identities and influence the human condition. Prerequisites: EN110 or EN109.

EN-238 Unnatural Acts (Fall; Yearly; 3.00 Credits; H) From the Puritans to tree-huggers, America has been divided between those who see Nature as moral and liberating, and those who see society as the taming of savage, godless wilderness. This course will examine that tension in writers from Hawthorne and Melville to Faulkner.

EN-239 Bloody Murder (Spring; Yearly; 4.00 Credits; H) The United States has always been a violent nation, and American writers have used that violence to explore questions of justice, truth, and human nature. This course will examine the portrayal of violence in writers from Poe to Cormac McCarthy.

EN-244 British Literature to 1600 (Spring; Variable; 3.00 Credits; H) Studies major works of the Old and Middle English periods and the Renaissance, including the Canterbury Tales, morality plays, various accounts of King Arthur, Gawain, and some early works of Shakespeare, with emphasis on how the social and historical contexts in which these works were created shaped literary meaning. Prerequisite: EN110 or EN109.

EN-250 African American Literature (Fall; Odd Years; 3.00 Credits; CA,H) A survey of African American literature from the mid-18th century to the present, with emphasis on both the vernacular/oral and written traditions of African American literature and attention to the historical and cultural contexts in which the literature was created. Readings include folktales, slave narratives, autobiographies, poetry, stories, novels, essays, sermons and speeches, hymns and spirituals, as well as blues and gospel music and works by such writers as Frederick Douglass, W.E.B. DuBois, Zora Neale Hurston, Langston Hughes, Richard Wright, James Baldwin, Gwendolyn Brooks, Toni Morrison, Alice Walker, Amiri Baraka, and others. Prerequisites: EN110.

EN-251 Narratives of Slavery (Variable; Yearly; 4.00 Credits; H,CW,SW-US) The personal narratives of people enslaved in the United States are the foundational works of the African American literary tradition, and they have influenced generations of American authors. Originally written as a means of promoting the abolition of slavery, contemporary writers have taken this historical form and transformed it to reflect upon the past and engage with problems of the present. In this course, we will read a variety of original narratives of slavery and put them in dialogue with contemporary fictionalized narratives depicting the experience of slavery. In doing so, we will explore topics such as the boundaries between fact and fiction, the political uses of literature, the after-life of slavery, cultural authenticity, and many others. Prerequisite: FYC-101 or EN-110 or EN-109.

EN-253 Literature of the Jazz Age (Spring; Even Years; 3.00 Credits; H) Called the "Jazz Age" by F. Scott Fitzgerald, the 1920s were marked by great cultural change. In response to the trauma of the First World War, the "lost generation" broke traditional social barriers while embracing radically new forms of art. Beginning in 1920 (the year both women's suffrage and prohibition were passed as constitutional amendments) and concluding with the 1929 stock market crash that signaled the start of the Great Depression, we will examine the role of the Harlem Renaissance in inspiring and sustaining domestic and expatriate American modernism. With special emphasis on the interplay of art, music, and literature, this class will examine the literature of the Jazz Age across genre "and racial" boundaries, concluding with two contemporary works that evaluate the lasting significance of this era on American culture. Prerequisite: EN110 or EN109.

EN-255 Passing Narratives (Variable; Yearly; 4.00 Credits; CA,H) Passing narratives investigate how the boundaries of identity can be reimagined. Most often depicting racial passing (when a person "passes for" someone of another race), these narratives also can be about performing another gender or sexual identity. In this course, we will trace the evolution of this trope through American literature and film. Prerequisites: FYC-101 or EN-110 or EN-109.

EN-258 Funny Pages (Variable; Variable; 3.00 Credits; H) Everyone loves comedy—even college professors. But comedy isn't just pratfalls and punchlines. It's a distinctive literary form with its own conventions, traditions, and variety of approaches. There's wit, parody, farce, satire, black comedy, and all the things in between. In this course we'll look at some of the greatest comedy ever written (and filmed, too), all brought to you by the greatest humorists the English language has ever produced—the British.

EN-262 Unhappily Ever After (Spring; Odd Years; 3.00 Credits; H) Deaths. Betrayals. Loves lost. Falls from grace. These calamities, and those that suffer them, have captivated dramatists, novelists, philosophers, and theoreticians since the first tragedy was staged in ancient Athens over 2,500 years ago. This course will explore how literary cultures have understood and expressed notions of tragedy in different historical periods. By examining the ways in which we inflict and endure suffering, we will consider how literary tragedy informs our understanding of the human condition.

EN-271 Public Health Writing (Spring; Variable; 3.00 Credits; H,CW) Focuses on health and medical writing for public audiences. The course will familiarize students with health literacy, plain language, and visual communication skills. Students will analyze and compose common genres of public health writing, including reports about health in the media, advocacy documents, science journalism articles, and public health posters. Prerequisites: EN110 or EN109.

EN-272 Introduction to Professional Writing (Variable; Yearly; 4.00 Credits; H,CW,SW-ER) What are we talking about when we talk about professionalism? What characterizes professional communication? In today's world, what does it mean to use professional writing ethically? To answer these questions, this course focuses on the study, practice, and revision of writing in professional settings. Examining and producing memos, proposals, and reports, students take concrete steps towards exploring potential future careers. Prerequisite or Corequisite: FYC-101 or EN-110 or EN-109.

EN-273 Visual Literacy (Variable; Yearly; 4.00 Credits; H,WK-HT) In today's multimedia world, images communicate meaning and advance arguments in numerous ways, and new technologies of the visual demand new forms of literacy to understand, interpret, and create visual communication. Through comics and graphic novels, maps, visual arguments, and theories of seeing, this course immerses students into the theory and practices of visual literacy. Prereq: FYC-101 or EN-110 or EN-109.

EN-281 Writing Practicum (Fall & Spring; Yearly; 1.00-2.00 Credits; H) Students may receive credits for writing, editing, photography, or layout design for the Juniatian. Credit hours to the level of participation (based on number of contributions and attendance) and position (reporter, designer, photographer, editor). The course instructor and/or the department supervisor will determine credit limits. Only editors chosen by the instructor may receive 3 credits.

EN-282 Writing Practicum (Fall & Spring; Yearly; 2.00 Credits; H) Students may receive credits for writing, editing, photography, or layout design for the Juniatian. Credit hours to the level of participation (based on number of contributions and attendance) and position (reporter, designer, photographer, editor). The course instructor and/or the department supervisor will determine credit limits. Only editors chosen by the instructor may receive 3 credits.

EN-283 The Graphic Novel (Fall; Odd Years; 3.00 Credits; H) Once dismissed by critics as insufficiently "literary," the significance of the graphic narrative in contemporary literature can no longer be denied (even by stodgy academics). Though all types of graphic narratives often referred to by the misleading label "graphic novel," this exciting combination of words and pictures comes in many different genres. In this class, we will examine graphic narratives across genres to explore the range of possibilities this form offers through careful literary and visual analysis. In addition to attentive close reading, we will put each work of fiction or nonfiction into its appropriate historical and cultural contexts using both literary and historical scholarship. Authors may include Alison Bechdel, Jaime Hernandez, Alan Moore, Josh Neufeld, Mat Johnson, and others. Topics will include contemporary revisions of the superhero, the strengths and limitations of visual and textual representation, stylistic differences between texts, the use of graphic narrative to relate history and/or contemporary events, how the graphic memoir creates new avenues for self-representation, the loss of the "auteur" in collaborative works, diversity in the graphic narrative marketplace, and many others. Prerequisites: EN110 or EN109.

EN-291A Unlock Your Voice (Fall; Even Years; 1.00 Credit) A Coffeehouse to Celebrate Literature by Women Writers. Students who participate in this practicum will head teams of volunteers to produce all aspects of the program. Prerequisites: EN191A and EN192A.

EN-291B Lift Ev'ry Voice (Fall; Odd Years; 1.00 Credit) A Coffeehouse to Celebrate Black History Month. Students in this practicum will head teams of volunteers to produce all aspects of the program. Prerequisites: EN191B and EN192B.

EN-292A Unlock Your Voice (Fall; Even Years; 1.00 Credit) A Coffeehouse to Celebrate Literature by Women Writers. Students who participate in this practicum will head teams of volunteers to produce all aspects of the program.

EN-292B Lift Ev'ry Voice (Fall; Odd Years; 1.00 Credit) A Coffee

house to Celebrate Black History Month. Students in this practicum will head teams of volunteers to produce all aspects of the program. Prerequisites: EN191B and EN-192B and EN291B

EN-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

EN-300 Modern Theories of Grammar (Spring; All Years; 3.00 Credits; H,CW,WK-FR) As grammatical creatures, we use our talents in pattern recognition and handling discrete structures. Along with the individual and interpersonal aspects of language, the course investigates sentence structure as an exercise in constructing a scientific theory based on the formal reasoning inherent in some grammatical theories. A research project relates material to students' interests. Prerequisite: EN110, EN109, or FYC 101.

EN-301 Young Adult Literature (Fall; Even Years; 4.00 Credits; H) Students will read & analyze a variety of literature from the Young Adult Lit category. Students will engage in class discussions and make presentations based on individual research.

EN-302 The Literature of Social Protest (Variable; Yearly; 4.00 Credits; SW-US) In this course, we will explore the use of literature as a means of protesting social injustice throughout U.S. history. How have American authors used novels, poems, stories, and essays to illustrate social problems, create empathy, and advocate for social change? What are the boundaries between art and politics? How might literary aesthetics inspire social action? How has literature shaped social progress and vice versa? Questions of literary form, merit, and content will guide our search, as will questions of representation, politics, and economics. Though topics will range widely (but often intersect), we will ask how each literary work engages with the foundational statement of American dissent, "The Declaration of Independence."

EN-303 Poetry Writing (Fall; Yearly; 3.00 Credits; H) An intensive workshop in poetic technique, plus extensive writing of poetry for class discussions and criticism. Emily Dickinson said: "If I feel physically as if the top of my head were taken off, I know this is poetry." Whether you are a novice or an experienced poet, this course will teach you to take off the top of people's heads. Prerequisite: EN110 or EN109.

EN-305 Fiction Writing (Spring; All Years; 3.00 Credits; F,H,WK-CE) In this course, we will work to develop skills in the art of writing fiction. Students will study fiction as a craft, read and discuss fiction by major writers, critique each other's work, and write and revise extensively. Prerequisite: FYC 101 or sophomore standing.

EN-306 Creative Nonfiction Writing (Variable; Yearly; 4.00 Credits; H,CW,WK-CE) The course introduces the art of the creative nonfiction essay-types of essays, variety of forms, and purposes of the essay. Students will write essays, revise extensively, and critique each other's work throughout the course. Through this process, students become familiar with the formal elements of prose style. Prerequisite: FYC-101 or EN-110 or EN-109. Also must have sophomore class standing or above.

EN-307 Mythology in Film (Variable; Yearly; 4.00 Credits; H,WK-HT) This course will explore how film communicates the myths

of a various societies to its members. By combining theoretical approaches to myth with film analysis, we will explore the ways in which cinema both influences and reflects the way we think, what we value, fear, and aspire to achieve. Focusing on some of the most prevalent themes in this genre, students will be introduced to Classical and contemporary adaptations of myths and their historical and cultural contexts, examining how those narratives provide meaning today via cinema. Prerequisites: EN110 or EN108 and EN109.

EN-308 English Research Methods (Variable; Yearly; 2.00 Credits) This course is an introduction to English research methods taken in the junior year. Students will learn and negotiate the research process, applying the skills learned to their analysis of literary works or writing research. Writing, ethics, and constructing effective research questions and arguments will be covered to prepare students for completing their senior research thesis, paper, or creative project. Pre-req: EN-204 English Colloquium and Junior Standing

EN-311 Professional News and Feature Writing (Variable; Variable; 4.00 Credits; H,CW) This advanced writing course introduces students to the genres and techniques of journalism. Students will write a number of news and feature stories. The writing process involves interviewing, note-taking and other forms of data gathering on campus and at local news events, creating multiple story drafts, and participating in peer-editing workshops. Work culminates in a portfolio of stories written throughout the semester. Students need not plan to become professional media writers to benefit from the course. Prerequisite: FYC-101, EN-110, or EN-109.

EN-312 Literature of Revenge (Variable; Variable; 4.00 Credits; H,SW-ER) Students will examine the various functions revenge plays in human culture while tracing its role as a literary device from the bloodbaths of Greek tragedies to the psychological retaliation of contemporary works. Studying historical and cultural influences that have shaped notions of revenge over centuries, students will contemplate the complicated distinctions humans make between perceptions of retribution and justice. Prereq: FYC-101 or EN-110 or EN-109.

EN-313 Firing the Canon (Spring; Odd Years; 4.00 Credits; H) When talking about the canon in literature, we are usually gesturing towards the classics-works of art that have stood the test of time as culturally significant. How did those books become classic in the first place? We will study the histories of canon formation before debating what works to include in a self-designed literary anthology.

EN-315 Technical Writing (Variable; Yearly; 4.00 Credits; H,CW) An examination of writing for the real world: as such it concentrates equally on content and practice. The course builds around various document designs and ways to present those designs in expressions appropriate to audience and purpose. While sophomores are allowed to register they may be removed from the course if the demand by upperclassmen is high. Prerequisites: EN110 or EN109 and Sophomore, Junior or Senior standing.

EN-341 Shakespearean Drama (Spring; Yearly; 4.00 Credits; H) Examines historical moments, cultural perspectives, and theatrical constructs that shaped the writing, acting, and reception of Shakespeare's comedies, tragedies, and history plays. Prerequisite: EN110 or EN109.

EN-370 The Contemporary Novel (Spring; Yearly; 3.00 Credits; H,CW) The course covers the novel in English over the past twenty years, focusing on novels by writers such as Sherman Alexie, Junot Diaz, Alison Bechdel, and Mat Johnson. These authors will be put in dialogue with an earlier text as a means of exploring the role of literary influence in contemporary fiction. Each of these pairings will ask if the contemporary work is a remix, a revision, a corrective, or a reimagining of a classic precedent. This course explores the use of traditional and innovative narrative strategies, as well as the social, cultural, and aesthetic values conveyed by those strategies. Prerequisite: EN110 or EN109.

EN-372 Contemporary Poetry (Fall; Even Years; 3.00 Credits; CA,H) Contemporary poetry speaks to us right there and now, whether in a personal cry of emotion or in a piercing cultural commentary. This course studies representative poets from our own age, with emphasis on the social context of the times. Different poets are discussed each time the course is taught, but every year you'll actually get to meet one of them up close and personal, as part of our Pennsylvania Poet series. Prerequisite: EN110 or EN109.

EN-374 Ethical Game Design (Variable; Variable; 4.00 Credits; SW-ER,H,CW,CTDH) This course focuses on both the use of ethical principles to design games and the critical study of ethical games, which position players to make ethical decisions throughout the game. After learning about ethical principles through play and analysis, students design a text-based game where players make ethical choices shaping the narrative and experience of the game. Prerequisite: FYC-101

EN-376 Writing Across Media (Variable; Yearly; 4.00 Credits; H,CW,WK-CE,CTDH) Contemporary life asks us to be agile interpreters of images, texts, and sounds. In response, this course immerses students into the theory and practice of how and why we choose the media in which we communicate. Through an assignment sequence that includes text, webtext, image, sound, and video, students gain strength and versatility as writers by honing their awareness of genre, audience, and rhetorical situation. Pre-Req: FYC-101 or EN-110 or EN-109

EN-378 Video Production Writing (Fall; Odd Years; 4.00 Credits; H,CW,CTDH,WK-CE) Writing for Video Production is a course that combines contemporary rhetoric, creative inquiry, design thinking, media authorship, self-reflection, and social engagement. Students complete directed writing such as journal entries, scripts, storyboards, and shotlists in concert with video production, facilitating an integrated process of thinking, creating, and problem-solving. Take FYC-101 or EN-110 or EN-109

EN-379 Professional Editing (Fall; Yearly; 4.00 Credits; H,SW-LE) This course provides a broad understanding of editing and its role in document development, publication, and use. Students will learn to edit effectively on a range of editing tasks and documents and edit documents for a community partner project. These skills will prepare students for a variety of professional editing positions. Prerequisite: FYC-101 or EN-110 or EN-109.

EN-381 Writing Practicum (Fall & Spring; Yearly; 2.00 Credits; H) Students may receive credits for writing, editing, photography, or layout design for the Juniata. Credit hours to the level of participation (based on number of contributions and attendance) and position (reporter, designer, photographer, editor). The course in-

structor and/or the department supervisor will determine credit limits. Only editors chosen by the instructor may receive 3 credits.

EN-382 Writing Practicum (Fall & Spring; Yearly; 1.00-3.00 Credits; H) Students may receive credits for writing, editing, photography, or layout design for the Juniatian. Credit hours to the level of participation (based on number of contributions and attendance) and position (reporter, designer, photographer, editor). The course instructor and/or the department supervisor will determine credit limits. Prerequisites: EN181, EN182, EN281, EN282 and EN381. Only editors chosen by the instructor may receive 3 credits.

EN-385 Queer Literature (Variable; Variable; 4.00 Credits; CA,H) By applying queer theory frameworks to a variety of texts, we will examine literary representations of LGBTQ identity. Readings will include works by James Baldwin, John Rechy, Audre Lorde, Leslie Feinberg, Tony Kushner, and others. Topics will include: biological essentialism vs. the social construction of gender and sexual identity; authenticity and performance; social and legal forms of identity categorization and boundary maintenance; the role of literature in social reform; and more. Prerequisites: EN110 or EN109.

EN-388 Heroes and Villains (Fall; Variable; 3.00 Credits; H) Heroes-yay! Villains-hiss! All our lives we've learned to think in terms of good guys and bad guys. But why do we think in those categories? And what exactly do we mean by good guys and bad guys? And should we even be in the business of separating good guys from bad guys? This course will take a detailed look at heroes and villains in literature, movies, and television, and ask you to think about the whole duality, and what it means for the stories we tell. Prerequisites: EN110 or EN109.

EN-391A Unlock Your Voice (Fall; Even Years; 1.00 Credit) A Coffeehouse to Celebrate Literature by Women Writers. Students who participate in this practicum will head teams of volunteers to produce all aspects of the program. Prerequisites: Permission of the instructor.

EN-391B Lift Ev'ry Voice (Fall; Odd Years; 1.00 Credit) A Coffeehouse to Celebrate Black History Month. Students in this practicum will head teams of volunteers to produce all aspects of the program. Prerequisites: Permission of the Instructor.

EN-392 Crossing the Border (Variable; Yearly; 4.00 Credits; H,CW,SW-US) This class will examine the many meanings of "border crossing" in 20th- and 21st-century literature about immigration to the United States. Using critical race theory, this class will put works of fiction and autobiography in historical context to better investigate the influence of immigration law on U.S. national literature. Beginning with short texts from the turn of the twentieth century, we will focus primarily on contemporary works dealing with the post-1965 (or "new wave") immigrant experience. Topics will include: "American Dream" mythology, social mobility, generational conflict, acculturation and assimilation, hyphenated identity, nativism, barriers to full citizenship, and more. Pre-req: FYC-101 or EN-110 or EN-109

EN-392A Unlock Your Voice (Fall; Even Years; 1.00 Credit) A Coffeehouse to Celebrate Literature by Women Writers. Students who participate in this practicum will head teams of volunteers to produce all aspects of the program. Prerequisites: Permission of the instructor.

EN-392B Lift Ev'ry Voice (Fall; Odd Years; 1.00 Credit) A Coffeehouse to Celebrate Black History Month. Students in this practicum will head teams of volunteers to produce all aspects of the program. Prerequisites: Permission of the instructor.

EN-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Offers special studies to meet the interests and demands of students. Past examples include "Terry Pratchett" and "Renaissance Drama". Note: Students may take each ST: course for credit.

EN-410 Literary Theory (Spring; Even Years; 3.00 Credits; H) This course will examine various theoretical approaches to literature which have come to prominence over the last 25 years. Movements such as structuralism, deconstruction, hermeneutics, reader response and speech act theory, feminism, Marxism, Freudianism, and the new historicism and pragmatism will be studied from the perspectives of both their philosophical foundations and their application to the practical criticism of Texts. Prerequisites: EN110 or EN109 and 2 of the following: EN155 or EN170 or EN242 or EN243 or EN244 or EN245 or EN246.

EN-481 Writing Practicum (Fall & Spring; Yearly; 1.00-3.00 Credits; H) Students may receive credits for writing, editing, photography, or layout design for the Juniatian. Credit hours to the level of participation (based on number of contributions and attendance) and position (reporter, designer, photographer, editor). Prerequisites: EN181 and EN182 and EN281 and EN282 and EN381 and EN382. Only editors chosen by the instructor may receive 3 credits.

EN-482 Writing Practicum (Fall & Spring; Yearly; 2.00 Credits; H) Students may receive credits for writing, editing, photography, or layout design for the Juniatian. Credit hours to the level of participation (based on number of contributions and attendance) and position (reporter, designer, photographer, editor). Prerequisites: EN181 and EN182 and EN281 and EN282 and EN381 and EN382 and EN481. Only editors chosen by the instructor may receive 3 credits.

EN-490 English Internship (Variable; Variable; 2.00-9.00 Credits; H) English students may apply their acquired skills and knowledge in on-the-job internships of a semester during their junior or senior year for a total of 9 credit hours. Television stations, radio stations, newspapers, magazines, public relations and advertising agencies are all possible placements for the Juniata interns, who not only work as full-time members of the business's team but also evaluate and document their growth in a journal and prepare a portfolio of presentations or publications. Prerequisites: Permission of the instructor and Junior or Senior standing. Corequisite: EN495.

EN-491A Unlock Your Voice (Fall; Even Years; 1.00 Credit) A Coffeehouse to Celebrate Literature by Women Writers. Students who participate in this practicum will head teams of volunteers to produce all aspects of the program. Prerequisites: Permission of the instructor.

EN-491B Lift Ev'ry Voice (Fall; Odd Years; 1.00 Credit) A Coffeehouse to Celebrate Black History Month. Students in this practicum will head teams of volunteers to produce all aspects of the program. Prerequisites: Permission of the Instructor.

EN-492A Unlock Your Voice (Fall; Even Years; 1.00 Credit) A Coffeehouse to Celebrate Literature by Women Writers. Students who participate in this practicum will head teams of volunteers to pro-

duce all aspects of the program. Prerequisites: Permission of the instructor.

EN-492B Lift Ev'ry Voice (Fall; Odd Years; 1.00 Credit) A Coffee-house to Celebrate Black History Month. Students in this practicum will head teams of volunteers to produce all aspects of the program. Prerequisites: Permission of the Instructor.

EN-493 English Research Seminar (Fall & Spring; Yearly; 2.00 Credits; H) This course is a seminar-style introduction to advanced research methodology in literature and linguistics for senior English POEs. Students will work simultaneously with the course instructor and a thesis advisor from within the English department to develop a thesis plan and to begin its execution. Prerequisites: EN120, EN122 and EN204; Senior standing; instructor permission only.

EN-495 English Internship Research (Variable; Variable; 2.00-6.00 Credits; H) In addition to the on-the-job experience provided by the internship, the student is required to pursue research related to the placement. An in-depth research paper or presentation is completed during the semester and turned in for a possible 3 credit hours. Prerequisites: Permission of instructor and Junior or Senior standing. Corequisite: EN490.

EN-496 Senior Research Capstone (Variable; Yearly; 2.00-4.00 Credits; H) This course serves as a capstone experience in English that culminates in a substantial written thesis. The individual research project is conducted under the guidance of an English department faculty member. When completed, the thesis is presented in a public forum such as Liberal Arts Symposium, an oral defense, or a conference. Prerequisites: EN120, EN122, EN204 and EN493; Senior standing.

EN-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer subjects not normally taught. Requisites vary by title.

ENVIRONMENTAL SCIENCE AND STUDIES

ESS-100 Environmental Systems I (Variable; Yearly; 4.00 Credits; N,WK-SP,CTGIS) This course introduces students to the concept of systems, reviews ecological systems, and then goes on to human systems as these impact the environment. The course will explore the two forces that are at the core of most environmental impacts (climate change, ozone depletion, air and water pollution, and a loss of biodiversity) will be explored as will the fundamental attributes of agriculture, food, soil, and water. Throughout, the influence of culture, society, ethics, and science on the environmental problems will be discussed. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

ESS-110 Environmental Systems II (Variable; All Years; 3.00 Credits; N,SW-LE) This course introduces students to the concepts of environmental systems and sustainability, review of ecological systems, and human impact on the environment. Students will work on a restoration/conservation project with a community partner to improve soil/water resource quality in the community. Students will be introduced to scientific writing and write a scientific paper. Pre-req or co-req: FYC-101 or EN-110 or EN-109. (NOTE: ESS-100 is not a prereq for ESS-110.)

ESS-118 Global Justice Film (Variable; Yearly; 1.00 Credit) Through the medium of film, this one-credit course showcases environmental and sustainability issues within a global context. The themes and documentaries presented in the course will focus on intersecting elements of the environment, culture, access, class, gender, sustainability, and innovation. Based on the documentaries and discussion in the course, opportunities to engage in local sustainable measures will be possible.

ESS-119 Environmental Film (Variable; Yearly; 1.00 Credit; F) This course explores classic and current environmental and nature films and documentaries as both art and information. Students will watch and discuss 10 films.

ESS-121 Environmental Film Lab (Variable; Yearly; 2.00 Credits; F) Create a short nature or environmental film. The course will cover filming, sound interviewing experts, and post-production. Students will use Adobe Premier and Audition.

ESS-189 Writing in ESS (Spring; Yearly; 1.00 Credit; CW) ESS189 is designed to introduce freshmen to writing in the sciences, acquire the basic skills and knowledge required to write in the field. Scientific papers often use a standard format that allows researchers to present information clearly and concisely. This style is essential because scientists expect to be able to replicate the study. Students will be taught to critique the different components expected in a scientific paper, and learn to prepare papers in the accepted standard fashion.

ESS-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows departments to offer topics not normally scheduled. Prerequisites, corequisites, and fees vary by title.

ESS-206 Global Environmental Issues (Variable; Yearly; 4.00 Credits; N,WK-SI) Global Environmental Issues is a global public health course. Environmental problems create some of the most pressing public health issues of our time. This course seeks to train the participants to identify the public health challenges created by environmental problems in various parts of the world and exploring practical solutions for those problems.

ESS-211 Water Lab Practicum (Fall & Spring; Yearly; 1.00 Credit; N) This is a tutorial to learn basic methods of water quality analysis. Students work in conjunction with commercial water lab, conduction analyses for a local township. Prerequisite: Enrollment is by permission only.

ESS-219 Agroecology (Fall & Spring; Yearly; 1.00 Credit; N) This course will explore alternate production systems in agriculture as ecological systems.

ESS-224 Wildlife Mgmt (Spring; Variable; 3.00 Credits; N) Wildlife management incorporates the science and management of wild animals, both rare and common species. Threatened species may require particular knowledge of population structure and processes for effective management, while common species may need control or might be exploited as novel production products. Prerequisites: ESS-100 or BI-101 or BI-105.

ESS-225 Wildlife Management Techniques (Variable; Yearly; 2.00 Credits; N) Course will provide students with knowledge of common field research techniques employed by wildlife biologists.

ESS-230 Environmetrics (Fall & Spring; Yearly; 3.00 Credits; N,QS,CTGES,CTGIS) This course is a survey of the various visual, statistical, and modeling approaches commonly used in the analysis of environmental data. The course covers: (1) visual literacy from exploratory data inquisition to poster creation; (2) elementary group comparison such as t-test and ANOVA and their non-parametric analogs;(3) basic systems modeling; and (4) regression modeling techniques based on the generalized linear model framework. Prerequisites: Sophomore standing and permission of the instructor.

ESS-235 Environmental Reading (Variable; Variable; 1.00 Credit; N,CW) This class will explore 2-3 classic and/or modern works in environmental studies and natural history. The writers list includes: Aldo Leopold, Annie Dillard, Dan Daggett, Saul Alinski, Wangari Maathai, Gifford Pinchot, Bill McKibben, Mary Kingsley, Ian McHarg, Wendel Berry, Andrew Lytle, Ester Boserup, Roderick Nash, Vandana Shiva, Rose Reuter, Barry Lopez, Bernd Heinrich and others.

ESS-261 Marine Biology I (Fall; Variable; 3.00 Credits; N) This course takes a biological, physiological, and ecological approach to studying life in the oceans. We start with a basic review of the ocean. We will then provide an overview of the oceans as the course has a global focus. We then take a biological tour up the food chain.

ESS-262 Fluid Mechanics (Variable; Yearly; 3.00 Credits; N) An introductory course in the basic principles of fluid properties and fluid flow. The course will cover fluid system/control volume relationship analysis for continuum, energy, and momentum study

ESS-265 Food Fermentation (Spring; Yearly; 1.00 Credit; N) Salt, pH, bacteria, fungi, heat, and evaporation have been used by cultures around the world to preserve and enhance food. We will explore these processes by reading about the processes and then producing some of the simpler products from these traditions including jerky (drying and salting), cheese (bacterial and enzymatic fermentation), artisanal bread (fungal and bacterial fermentation), kimchi (bacterial fermentation), kombucha (Fungal and Bacterial fermentation), essential oils (evaporation and precipitation), and fermented but non-alcoholic ciders (fungal fermentation and pH reduction).

ESS-269 Art As Sustainable Development (Spring; Yearly; 3.00 Credits; F,I) Taught in India. Art as a Sustainable Development: Pottery, Beadwork, Leatherwork, and Sculpture (3 Units). Where: Various locations (Auroville, Mahabalipuram, and Kodiakanal). Local coastal industries in India are comprised of a wide variety of artisanship. When: February. Subjects: The arts of coastal India include pottery, beadwork, stonework, leatherwork, and jewelry. This course will provide the opportunity to work with the artists who train local people and produce these works for sale. This will cover introductory classes in these arts. The student will also visit the production factories and cottage industries where these products are produced for market. The student will also compare the economic structure of villages where the artesian communities operate with nearby villages dependent primarily on either agriculture or industry. This comparison will give the students clear perspective on the role of art in sustainable development. Students wishing to further their study in any of these fields may negotiate more time in the studios. Instructors: Angad Vohra (Pottery & Sculpture), Meena (Painting), Gillian (Beadwork & Leatherwork),

Francois Grenier (Stonework). Prerequisite: ESS100.

ESS-298 Animal Care, Training, and Education (Variable; Variable; 4.00 Credits; N) The Animal Care, Training, and Education course covers all aspects of operating an educational wildlife center. Topics include permitting, housing, husbandry, training, and conservation outreach with native wildlife. The course will provide the scientific foundations of animal husbandry, behavioral science, and educational methodology. A strong hands-on component, utilizing Shaver's Creek Environmental Center's Animal Care Facilities, provides students with an immersive experience to develop these skills under the guidance of the centers' staff. Select field sessions will enhance conservation connections to Shaver's Creek's live animal exhibits.

ESS-299 Special Topics (Variable; Variable; 1.00-3.00 Credits; N) Allows the departments to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites, corequisites, and fees vary by title.

ESS-300 Envir.Problem Solving (Fall; Yearly; 4.00 Credits; S,N) Students will practice and gain experience in solving actual environmental problems by putting academic theory to work in real world situations. Students will learn to work effectively in interdisciplinary teams comprised of both environmental scientist and environmental studies students. This course serves as preparation for senior research and internships. Prerequisite: ESS100.

ESS-301 Environmental Methods (Either Semester; Yearly; 3.00 Credits; N) This course deals with a variety of environmental issues and problems. This includes the causes and the scientific and social backgrounds needed to understand them. It also introduces the student to the roles of scientists and engineers in dealing with them. The course involves both quantitative and qualitative assessments. Prerequisites: ESS100 and 1 year of chemistry or permission of the instructor.

ESS-305 Environmental Economics (Spring; Yearly; 3.00 Credits; S) This course will cover the basics of microeconomic analysis as it applies to the environmental decision making and environmental policy with respect to pollution abatement, resource harvesting, and sustainability analysis. The course will also explore the strengths and weaknesses of economic models of human behavior. Finally, the course explores the growing concern of sustainable and resilient economies. Prerequisites: Sophomore standing or permission of the instructor.

ESS-309 Econometrics (Spring; Yearly; 2.00 Credits; N,Q) A first course in econometrics with forays into regression, optimization, and modeling. Prerequisites: Introductory economics course.

ESS-310 Water Resources I (Fall; Yearly; 3.00 Credits; QM,N) This course provides the student with a working overview of the hydrologic cycle, providing the student with the basic concepts of all aspects of hydrology. Particular emphasis is placed on the integrative nature of ecosystems within the watershed, including the interdependencies and driving forces of energy, the atmosphere, the hydrosphere, and the land, and the biosphere. Prerequisites: ESS100.

ESS-315 Environmental Chemistry (Variable; Yearly; 4.00 Credits) Environmental Chemistry is an application of chemical principles to the study of the environment. It includes natural processes and

pollution problems related to air, water, and soil.

ESS-320 Environmental Monitoring (Spring; Yearly; 4.00 Credits; N) This course develops skills in monitoring the environment, with a strong focus on water quality monitoring (both chemical and biological) in a variety of habitats. Environmental site assessment will also be conducted. A weekend-long field trip is required. Prerequisite: ESS100 and ESS200 or permission.

ESS-321 Water & Wastewater Treatment (Variable; Yearly; 4.00 Credits) Theory and design of water and waste treatment systems for industrial, municipal, and hazardous pollutants and natural biotransformation of pollutants in the environment. Laboratory experience in startup, operation, and analysis of systems that biodegrade pollutants and produce useful forms of energy.

ESS-324 Natural Resource Management (Either Semester; Variable; 3.00 Credits; N) This course provides a comprehensive coverage of local, regional, national, and global resource and environmental issues from population growth to wetlands to sustainable agriculture and natural resource policies and legislation. It considers renewable and non-renewable resources such as water, land, soil, air, wildlife, and their associated habitats. Prerequisites: ESS100 and BI105 and BI121. A special course fee is assessed.

ESS-325 Conservation Biology (Fall; Yearly; 3.00 Credits; S,N) Conservation Biology encompasses biology, politics, ethics, economics and anthropology. The major course objective is the exploration of conservation complexities—important for successful conservation efforts. Other objectives are to gain an understanding of extinction, community conservation, population genetics and demography. This course has a required weekend field trip with a fee added for the trip. Prerequisites: ESS100 or BI105.

ESS-328 Limnology (Fall; Yearly; 4.00 Credits; N) An ecology/environmental science course covering inland aquatic environments (lakes and streams). A balanced study of both physical-chemical and biological aspects, it is an appropriate upper level addition to a variety of POE's in natural sciences. Take BI105 and BI121 and ESS100 or permission of the instructor.

ESS-330 Geographical Information Systems (Fall & Spring; Yearly; 4.00 Credits; CTGIS) This course is an introduction to a Geographical Information System (GIS), and the course objective is that students gain a basic, partial understanding of GIS concepts, technical issues, and applications using Arc View GIS. It encourages thinking in spatial context. A diverse array of hands-on computer applications and projects are used to understand how geographical data can be analyzed spatially. Students explore analysis techniques in a problem basis learning approach using small team projects. Note: A special course fee is assessed. Prerequisite: ESS100.

ESS-335 Quantitative Ecology (Spring; Yearly; 4.00 Credits; QS) The goal of the course is to advance student understanding of a broad range of numerical and graphical techniques used to analyze complex data sets encountered in the environmental sciences. Students will learn the context to properly apply these techniques to address research questions. The purview is ecological, but is applicable to all other quantitative endeavors. The course emphasizes conceptual understanding, relevant applications, and proper interpretation rather than gory, though interesting, statistical theory. Students will apply the R language and environment for

statistical computing to tailor analyses to specific circumstances. Pre-reqs: ESS-110 and ESS 230.

ESS-337 Environmental Law (Spring; Yearly; 3.00 Credits; S,CT-GIS) This course will examine the major environmental laws in the United States and major Supreme Court cases covering these statutes. The status covered will be National Environmental Policy Act (NEPA), The Clean Water Act (CWA), Clean Air Act (CAA), Endangered Species Act (ESA), Federal Insecticide Fungicide and Rodenticide Act (FIFRA), Toxic Substances Control Act (TOSCA), Forest Land Policy and Management Act (FLPMA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Superfund Amendment and Reauthorization Act (SARA). Prerequisites: PS-101 and ESS-100, and sophomore standing or above.

ESS-340 Forestry (Fall; Variable; 3.00 Credits; N,CTGIS) This course provides a comprehensive survey of the discipline of forestry and forest ecology with special emphasis on tree identification, timber mensuration, and forest management issues in central Pennsylvania. Prerequisites: ESS100.

ESS-345 Ichthyology (Spring; Odd Years; 4.00 Credits; N,QS,CT-GIS) This course provides an in-depth and active hands-on study of fishes within an evolutionary framework. Lecture explores fish ecology, evolution, diversity, systematics, zoogeography, and conservation. Laboratory focuses on fish classification, fish biology and morphology, and skills needed to identify fishes of the central Appalachians. Prerequisites: BI-101 or BI-105 and BI-102 or BI-121 plus junior standing, or permission of instructor.

ESS-346 Freshwater Invertebrates (Spring; Even Years; 4.00 Credits; N,QS) This course provides an applied experience studying aquatic invertebrates that occupy freshwater ecosystems of North American. Lecture focuses on invertebrate ecology, sampling, monitoring, and analysis strategies for bioassessment, conservation, and description of taxa. Laboratory focuses on taxonomy, classification, and identification of families of invertebrates of the local central Appalachians. Prerequisites: BI 105/121, junior-level standing, or permission of instructor.

ESS-350 Field Research Methods (Fall; Yearly; 3.00 Credits; N,CT-GIS) Field Methodologies is intended for students interested in gaining experience in conducting field based ecological or environmental research. Students will be lead through the process of investigation, including the generation of research questions, research planning and design, analysis of data, and presentation methods, while giving them the opportunity to conduct independent projects. This is not a techniques/equipment training course; it will fulfill the independent study requirement of the ESS POE. This course will be particularly useful to students considering a field based senior research project. A course in statistics or ecology is highly recommended. Prerequisites: ESS100.

ESS-355 Ornithology (Summer; Yearly; 3.00 Credits; N) This course provides a comprehensive survey of the comparative biology, ecology, and behavior of birds with a special focus on issues pertaining to conservation management. Laboratory activities focus on field identification of birds and research and monitoring techniques. Prerequisites: BI113 or 1 college level organismal or ecology courses. Note: A special fee is applied. Course will run from June 1st to June 30th. Prerequisite: BI-113.

ESS-361 Field Methods in Marine Systems (Spring; Yearly; 4.00 Credits; N,Q) Taught in India. This is the methods portion of the course including field techniques, quantitative methods, and a scientific writing seminar. The student requirements will be a short paper, four section quizzes and a final exam Prerequisites: GL111 and ESS100. Permission of instructor required.

ESS-362 Island Ecosystems (Spring; Yearly; 3.00 Credits; N) Taught in India. This course will introduce the students to island ecosystems from both applied and theoretical viewpoint. The course will run in the Andaman Islands in India. The topics covered will include island fauna, island flora, reef ecosystems, and a ridge to reef view of these complex biotas. Prerequisites: GL111 and ESS100.

ESS-363 Upland Process and Estuaries (Spring; Yearly; 3.00 Credits; N) Taught in India. This course will introduce students to estuaries and upland processes. About 50% of the course will be on site with the discussion and activities intended to give a very close view of the processes, ecology, and issues in coastal watersheds and estuaries. Prerequisites: GL111 and ESS100 and permission of instructor.

ESS-364 Culture, Class and Gender (Spring; Yearly; 3.00 Credits; CA,S,I,CW) Taught in India. This course will cover issues of gender and other disadvantaged groups in coastal management. Fishing villages are often composed of people who are ethnically, religiously, or class-wise distinct from upland populations. Women also have culturally distinct roles in the harvesting, production, and processing of natural resources. Prerequisites: ESS100 and permission of the instructor and the Center for International Education. A trip fee is applied.

ESS-365 Sustainable Development (Summer; Variable; 3.00 Credits; I,N) This course is a combination of sustainable agriculture, sustainable forestry, coastal fisheries, very low impact living, and ecotourism. We will travel from Chennai to Pondicherry, then to the foothills of the Western Ghats, onward to the coastal port of Kochi in Kerala, and finally to the ecotourism resorts in Kovalam. Prerequisites: SO, JR, or SR standing.

ESS-375 Sustainability (Fall; Yearly; 3.00 Credits; N,CW,CA) Taught at Raystown Field Station. Students study sustainability, considering the triad of environment, economics and society, with a systems-view, connecting cultural practices to the concept of limits. Energy and Policy and topics focusing on the challenges of cultural change will be studied in depth with lecture, discussion, writing, simulations, field trips and integration with the Sense of Place seminar. Note: Special fees may apply to this course. Prerequisite: ESS100. Corequisites: PACS180 and ESS232 and ESS380.

ESS-377 GIS Advanced Topic (Fall; Variable; 4.00 Credits; N,QS) This course explores spatial decision support systems, hot spot modeling for home range, disease and crime, intermediate image analysis, habitat classification from multispectral and hyperspectral imagery. Prerequisites: ESS310 or ESS330 or permission of the instructor.

ESS-380 Sense of Place Seminar (Fall; Yearly; 3.00 Credits; CA,CW) Taught at Raystown Field Station. This is the "cornerstone" of the Sense of Place semester, managed by one faculty, but comprised of a series of modules taught by various faculty and guest speakers. Module topics cover a range of environmen-

tal, ecological, and societal issues connecting to the region. Students will be expected to journal their experiences at RFS as well as complete other writing assignments. Note: There is a course fee assessed. Prerequisites: ESS100 or permission of the instructor.

ESS-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Topics vary from year to year. They will focus one or more special environmental skills, methods, approaches or technologies. A laboratory fee will be assessed.

ESS-399L Special Topics Lab (1.00 Credit)

ESS-400 Senior Capstone I (Fall; Yearly; 1.00-3.00 Credits; S,CTGIS) The Senior Capstone course is intended to provide a real-world, project-based experience working on an advanced-level project. The student teams utilize skills they have acquired in their academic career to evaluate and provide potential solutions to realistic environmental tasks. The project will be chosen each semester based on needs and opportunities in local agencies to provide an advanced project that can be done in one semester. Prerequisite: Senior standing or permission of the instructor.

ESS-401 Senior Capstone II (Spring; Yearly; 1.00-3.00 Credits; N,S,CTGIS) This course is the spring semester Senior Capstone option. It is intended to provide a real-world, project-based experience working on an advanced-level project. The student teams utilize skills they have acquired in their academic career to evaluate and provide potential solutions to realistic environmental tasks. The project will be chosen each year based on needs and opportunities in local agencies to provide an advanced project that can be done in one year. Prerequisite: ESS-100 and Senior standing or instructor permission.

ESS-410 Water Resources II (Spring; Odd Years; 3.00 Credits; QS,N,CTGIS) This is an advanced hydrology course aimed at furthering the students understanding of the complex interactions of the hydrologic cycle. Particular emphasis will be placed on mathematically modeling the process including precipitation, runoff, infiltration, soil moisture and stream flow. Prerequisites: ESS310 and MA130

ESS-415 Fate & Transport of Pollutants (Variable; Yearly; 4.00 Credits) The course is designed to provide an understanding of the physical, chemical, and biological processes that govern the distribution of contaminants through the environment, as well as the processes that are involved in the transformation or degradation of a contaminant. Knowledge of these processes is essential for designing pollution prevention, control, monitoring, and remediation strategies, and for risk assessment. We will cover the distribution of pollutants in air, water, soil, and biological tissues, with particular emphasis on toxic organic pollutants.

ESS-445 Fishery Science & Management (Fall; Odd Years; 4.00 Credits; H,N,QS) This course is a survey of the elements of fisheries science and management including the biology, ecology, management, and conservation of fisheries and aquatic resources. Emphasis is on whole ecosystem approaches to ecology and management of inland freshwater fisheries of North America and associated habitats. Prerequisites: BI-101 or BI-105 and BI-102 or BI-121 or permission of instructor.

ESS-450 Environmental Research (Fall & Spring; Yearly; 1.00-6.00

Credits; S) An independent research experience that includes the preparation of a research proposal. Students present research results during weekly meetings with instructor. A research paper is the end point of the research experience. Presentation of results at national meetings is encouraged. May be repeated for up to 15 credits. Prerequisite: ESS100 and ESS300 and permission of the instructor.

ESS-460 Coastal Zone Management (Spring; Yearly; 3.00 Credits; S) Taught in India. This course will cover the current legal status, international treaties, state and central government coastal zone management regulations, and the history and current status of conflict and the attempts to overcome that conflict in India. This includes shrimp farming, over fishing, pollution, shipping, oil spills changes in beach morphology and coastal topography from weirs dams, etc. Prerequisites: GL111 and ESS100.

ESS-490 Environmental Science and Studies Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; N) Note: May be repeated up to a total of 9 hours of credit. Prerequisite: Permission and Jr. or Sr. Standing. Corequisite: ESS495.

ESS-495 ESS Research Seminar (Either Semester; Yearly; 2.00-6.00 Credits; N) Requires students to reflect on experience and/or pursue relevant research. Corequisite: ESS490. Prerequisite: Permission and Jr. Sr. standing.

ESS-499 Special Topics (Variable; Variable; 3.00 Credits) Allows the departments to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

ESS-TUT ESS Teaching Assistant (Variable; Variable; 1.00-3.00 Credits; N)

GEOLOGY

GL-100 Intro to Physical Geology (Fall & Spring; Yearly; 3.00 Credits; N) An introduction to the principles and methods of geology. Emphasis is placed on the geologic forces at work in our physical environment. Topics covered include internal processes such as volcanism, earthquakes, mountain building and the flow of groundwater as well as external processes such as landslides, flooding, erosion and landscape formation. Emphasis is given to the interaction of human activities with these physical processes as well as the processes themselves.

GL-100A Environmental Geology (Fall & Spring; Yearly; 3.00 Credits; N) Student perceptions of what constitutes geology have shifted. Contemporary students need to be made aware that geology IS the study of the physical environment of the earth and that a central part of what geologists do entails an exploration of how humans and the built environment both affect and are affected by the earth's physical/environmental system. While our previous title and description for this course, Introduction to Physical Geology, carried these implicit understandings, we find it important now to draw students' attention explicitly to the environmental character of our study of Earth.

GL-101 Physical Geology Lab (Fall & Spring; Yearly; 1.00 Credit; N) This course provides opportunities to study geology in the laboratory and field. Concepts and methods covered in the lecture

are reinforced. Specifically covered are mineral and rock identification, map interpretation and study of examples of earth processes from maps and in the field. Some field trips are required and a special fee is assessed. Corequisite or Prerequisite: GL100A.

GL-111 Oceanography (Fall; Yearly; 3.00 Credits; N) A survey of the physical, chemical, biological and geological environments of the ocean. Included are sea floor topography, composition and circulation of sea water and the life existing in the oceanic environments. Field experience is offered and a special fee is assessed.

GL-114 Catastrophe (Variable; Yearly; 3.00 Credits; N,WK-SP) This Scientific Process course explores the geological processes and hazards that lead to large and destructive natural disasters. Students will explore and work with interdisciplinary scientific data to understand the importance and societal relevance of earth processes in everyday decision making. Pre-req: FYC-101 or EN-110 or EN-109.

GL-116 Sustainable Ag in Pa (Spring; Variable; 1.00 Credit; N) This is a largely experiential course exploring the food production system through visits to local natural foods producers, CSA farmers, producers of locally grown organic food for the urban market and to conventional farms for contrast. An overview is provided into issues of soil amendments, methods of pest control, feedlot and pastured meat and dairy production, and cheese-making. Students will discuss with farmers their zeal, their economic and social objectives, and their challenges. A sizable lab fee is assessed to cover multiple field trips, and includes registration for the Farming for the Future Conference of the Pennsylvania Association for Sustainable Agriculture. The course includes multiple REQUIRED weekend field trips.

GL-123 Expedition: Earth (Variable; Yearly; 3.00 Credits) This course explores the full range of geologic studies through weekly meetings in the spring semester to prepare for a two to three-week field expedition in May-June. The field trip is supported by the Geology Alumni Field Trip fund. Each year, the class will travel to a different region in the US or internationally.

GL-126 Environmental Geochemistry (Variable; Variable; 3.00 Credits; N) This course will introduce fundamental geologic process through a geochemical lens. Basic geochemical reactions involving water-rock interactions at both high and low temperatures will be considered. The class will focus on the environmental problems in atmosphere and continents. Prereq: CH114.

GL-130 Introduction to Soils (Fall; Variable; 4.00 Credits; N) Introduction to Soils is an experience-driven overview of the most important distinctions among soils and to the factors that contribute to agricultural productivity of soils. Through in-class activities students will learn to be observers of soil characteristics, and will come to understand soil as the interface between the worlds of rocks, plant and animal life, the water cycle and the atmosphere. Attention will be drawn to natural and disturbed soils, and soils' role in global health. No prerequisites.

GL-172 Geology of National Parks (Fall & Spring; Yearly; 3.00 Credits; N,WK-SP) A Scientific Process course that explores geologic processes that formed the landscape of the United States through the lens of our national parks. Students will learn how to read, use, interpret, and collect earth science data to approach scientific problems and public policy decisions. Field trip to National

Park required unless course is taken online; special fee assessed for field trip. PRE-REQ: FYC 101.

GL-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) An examination of an area not regularly studied in the departmental offerings. Examples have been Geomorphology, Petroleum Geology, and Case Studies in Environmental Geology. Note: abbreviate ST: (title) students may take each ST: Course for credit.

GL-204 History of Earth (Variable; Yearly; 4.00 Credits; N,WK-SP) This course examines the history of the planet Earth since its origin to the present day and the methods that geologists use to uncover that history. The course includes specific consideration of the social context of geosciences, and ways that art and science have contributed to human understanding of Earth. Pre-req: FYC-101 or EN-110 or EN-109

GL-210 Minerals (Variable; Yearly; 4.00 Credits; N,WK-SP) This course explores the building blocks of the Earth: minerals. Students will master mineral identification in hand-specimen and by optical microscope methods to conduct scientific inquiry. Emphasis is placed on mineral classification, crystal structure, chemical composition, physical properties, and stability. We also investigate the role of minerals in society and public policy. A lab fee is assessed. Pre-req: FYC-101 or EN-110 or EN-109.

GL-213 Minerals, Economics, Politics and Law (Either Semester; Odd Years; 3.00 Credits; I) Introduces mineral deposits and examines the distribution and exploitation. Explores historical patterns in mineral resource utilization and considers the extractive industries in the context of economic patterns and government policies. Emphasizes the potential for conflict resulting from the uneven distribution and exploitation of mineral wealth. Note: some field trips are required. (A Peace and Conflict Studies course.) Note: this course does not fulfill the distribution requirement in science.

GL-215 Energy, Minerals & Society (Fall; Variable; 3.00 Credits; N) Twenty-first century societies run on the twin nutrients of abundant energy and the mineral resources needed to fashion technological devices. While both energy and mineral commodities are subject to wildly oscillating demand as economies alternately flourish and falter, the global demand for all such commodities has shown inexorable growth since the onset of the industrial era. Globalization has increased this rate of growth. But, extraction and use of resources invariably alters landscapes and releases pollutants into the environment. How adequate are supplies? How can they be used with minimal adverse impact? To what extent can impacts be managed by use of alternative energies, by recycling, by conservation? These topics are the focus of this course.

GL-240 Geological Field Methods I (Fall; Yearly; 4.00 Credits; N,CW,CTGIS) This course is an introduction to the geology of the Appalachians through teaching geologic methods in the field. The course will focus on developing field practice and using the information collected in the field to construct a scientific document. The course is composed of 8 local field trips and 1 extended field trip as well as many classroom exercises.

GL-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) An examination of an area not regularly studied in the departmental offerings. Examples have been Geomorphology, Petroleum Geology, and Case Studies in Environmental Geology. Note: abbreviate ST: (title). Students may take each ST: course for credit.

GL-300 Petrography (Fall; Yearly; 4.00 Credits; N) The petrographic examination of rocks in hand specimen and under the microscope. Identification of the principal types of igneous and metamorphic rocks and discussion of their chemical and mineralogical characteristics and tectonic setting is emphasized. Note: one laboratory per week, one or two major field trips are required, and a special fee is assessed. Prerequisite: GL210.

GL-304 Paleobiology of Invertebrates (Fall; Odd Years; 4.00 Credits; N) Basic principles of paleontology and functional morphology of extant and extinct invertebrates are covered. These include identifying fossils and understanding their morphology and preservation in order to interpret ancient environments. Note: One laboratory per week and field trips are required and a special fee is assessed. Prerequisites: GL202 or BI105.

GL-305 Hydrogeology (Variable; Variable; 3.00 Credits; N) The study of the natural occurrence of water. Topics include: the hydrologic cycle, precipitation, stream flow, soil moisture, ground water occurrence, aquifer flow and testing chemical characteristics, contamination, development and management of ground-water resources.

GL-307 Geophysics (Fall; Even Years; 3.00 Credits; N) This course is an introduction to how geophysical data can be used to address academic and applied problems in geology. Emphasis is placed on the concepts behind acquiring geophysical data and use of the information for interpretation. Seismology, magnetism, heat and gravity are the main concepts covered. Prerequisites: GL202. MA130 may be taken as prerequisite or corequisite. There are two field trips run over the weekend where students get to use the equipment in the field and reduce the data. A special fee is assessed.

GL-310 Structural Geology (Variable; Yearly; 3.00 Credits; N) The study of the deformation of the earth's crust. Field relationships, form, symmetry, and geometry of earth structures are stressed. Concepts of kinematic and dynamic analysis are presented so students are better prepared to interpret the origin of earth structures. Note: one laboratory per week, one or two extended field trips are required and a special fee is assessed. Prerequisite: GL202.

GL-325 Intro to Soil Science (Spring; Variable; 4.00 Credits; N) Introduction to Soil Science is a comprehensive overview of soils, their characteristics, their origins, their importance to agriculture, construction and waste disposal, and of the factors that contribute to maintenance of soil quality or to its degradation in use. Theoretical concepts will be supported by laboratory and field study of soils, soil forming processes, and soil-water-rock-biotic interactions; training will be provided in techniques of field sampling and characterization of soils. A special lab fee is assessed. Prerequisites: GL100 & GL101 & CH105.

GL-350 Geol. Research Methodologies (Spring; Yearly; 2.00 Credits) Aims to elucidate the science research process and the science infrastructure to the student. The course introduces students to research practice, analysis and writing. The course also requires students to prepare a research proposal. Students will also discuss more theoretical aspects of research: epistemology, the scientific method, multiple working hypotheses, erecting and testing hypotheses, and the scientific infrastructure. This course is designed for junior level geology students. Prerequisites: Permission of the instructor.

GL-389 Geology Professional Seminar (Spring; Yearly; 1.00 Credit) Provides guidance and preparation to Junior class level Geology students in relation to their post-Juniata plans. Topics include resume writing, strategies involved in a job or graduate school search, preparation for credentialing exams, preparation for interviews, and networking. Prerequisite: Junior or Senior standing.

GL-399 Special Topics (Either Semester; Variable; 1.00-4.00 Credits) An examination of an area not regularly studied in the departmental offerings. Examples have been Geomorphology, Petroleum Geology, and Case Studies in Environmental Geology. Note: abbreviate ST:(title). Students may take each ST: course for credit.

GL-400 Petrology of Igneous and Metamorphic Rocks (Spring; Even Years; 4.00 Credits; N) Analyzes the processes of magma generation and crystallization under equilibrium and disequilibrium conditions in the context of igneous phase equilibria and geologic setting. Considers the re-crystallization of pre-existing mineral assemblages in the metamorphic environments and examines metamorphic conditions by interpretation of facies assemblages and petrogenetic grids. Note: one laboratory per week; a major field trip is required and a special fee is assessed. Prerequisite: GL 300.

GL-401 Sedimentology (Fall; Even Years; 4.00 Credits; N) Focuses on the origin of sediments and sedimentary rocks. Included are sedimentary processes, depositional environments, post-depositional influences and sedimentary rock classification. Principles and methods of study including petrographic analysis are emphasized. Note: one laboratory per week, field trips are required, including a weekend trip, and a special fee is assessed. Prerequisite: GL202.

GL-405 Principles of Stratigraphy (Spring; Odd Years; 4.00 Credits; CW,N) Includes the description of sedimentary rocks in the stratigraphic column, methods of correlation, interpretation of the origin of rock units and the historical and philosophical development of the geologic time scale. Note: one laboratory per week, field trips are required and a special fee is assessed. Prerequisite: GL202.

GL-414 Geologic Research Method (Fall & Spring; Variable; 3.00 Credits) The course focuses on exploring geologic research method development, data collection and management, data interpretation and professional presentation of scientific information.

GL-440 Geological Field Methods II (Spring; Variable; 4.00 Credits; N) The course covers advanced geologic mapping of the Appalachians. It will focus on constructing geologic maps and cross-sections to develop an understanding of the rock record, geologic time, and the processes by which geologists reconstruct ancient tectonic and sedimentary events. The course is field based. Prerequisites: GL 240. Note: A special course fee will be applied.

GL-450 Geological Research (Fall & Spring; Yearly; 1.00-6.00 Credits; N) The field or laboratory investigation of a specific geologic problem. Methodology and principles of interpretation are necessary for the successful completion of the course and a final report must be submitted. Student's specific research topic will be the title of the course on the student's transcript. May be completed multiple times for credit. Prerequisite: permission of Geology faculty member.

GL-490 Geology Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; N) See the chapter, "Special Programs" under Internships. Prerequisite: Permission and Jr. or Sr. standing. Corequisite: GL495.

GL-495 Internship Research/Seminar (Fall & Spring; Yearly; 1.00-6.00 Credits; N) Requires students to reflect on the internship experience and/or pursue research related to the placement. Corequisite: GL 490. Prerequisite: permission.

HISTORY

HS-104 European History to 1550 (Variable; Variable; 4.00 Credits; H,I) This course traces the history of Europe from the late Roman Republic to the Protestant Reformation. Attention is given to political, social, and religious developments during the period.

HS-109 China, Japan, and Korea to 1800 (Variable; Yearly; 4.00 Credits; H,I) Introduces students to the major themes in the histories of China, Japan, and Korea from antiquity to about 1800. Special emphasis will be paid to the religious and philosophical foundations of Confucian civilization.

HS-115 United States to 1877 (Fall; Yearly; 4.00 Credits; H) Concentrates on the broad sweep of U.S. history from colonial beginnings through Reconstruction using a variety of perspectives and sources. The ideas and realities of freedom shape nearly every part of our lives. How did this develop in the United States from its earliest European settlements to the aftermath of the Civil War? HS-115 focuses on this central theme of freedom - how people have defined and pursued it, as well as expanded and restricted it, in different places. You will also learn how to analyze primary sources (those created during the time period under study) and apply a historical perspective to issues that shape your life today.

HS-116 The U.S. Since 1877 (Spring; Yearly; 4.00 Credits; H) This course uses original documents, novels, and other sources to explore the interrelationships between domestic and foreign affairs and to examine the consequences of actions taken at the national and local level.

HS-152 World Civilizations From 1500 (Variable; Yearly; 4.00 Credits; H,I) This course will trace the development of world civilizations from the 16th century to the present.

HS-199 Special Topics (Fall; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

HS-200 The Great War (Variable; Variable; 4.00 Credits; I,H,CW) This class is a social, cultural, and political history of the First World War. While the course will examine the different combatants and theaters of the war, we will focus on the perspective of Britain and the British Empire, as we seek to understand what it was like for soldiers and civilians to live through the war.

HS-201 Samurai Legends & Lives (Either Semester; Variable; 3.00 Credits; CA,H,I) In this course, students analyze the ways in which the mythic images of the samurai warriors of Japan have been constructed in both Japan and the West. Students will read medieval Japanese war tales, administrative and legal documents, memoirs and reminiscences, puppet plays, and view films to un-

derstand how these ideas and images were created, and changed, through time. Prerequisites: EN110 or EN109.

HS-204 Australia/New Zealand (Either Semester; Variable; 4.00 Credits; I,H) This course is a comparative introduction to the history of New Zealand and Australia. We will begin the course by studying the indigenous people of the region: Australian Aborigines in Australia and Maoris in New Zealand, before moving to think about the arrival of white settlers. During the semester, we will pay particular attention to the process of colonization and dispossession, race and gender relations, the search for national identity, popular culture, and politics in the two countries.

HS-213 History of Ireland (Variable; Variable; 4.00 Credits; H,WK-HT) This course is an introduction to the history of Ireland, beginning with an overview of the early history. We will explore the Tudor revolutions, English colonialism, the question of identity in the island, Irish Republicanism, home rule movements, the partition of Ireland, and the "troubles" in the North of the island of Ireland. Pre-Req: FYC-101 or EN-110 or EN-109

HS-215 Rome: Republic to Empire (Variable; Variable; 4.00 Credits; H,WK-HT) People through history have imagined Rome in different ways, and it conjures up lots of different images for us: civilization; barbarism; conquest; freedom; slavery; technology; virtue and vice. In this course, we will explore the period between the founding of Roman civilization and the year 325 A.D., examining what the Romans thought and said about themselves and what they mean to us today.

HS-217 The Lowcountry and the Gullah Culture (Variable; Yearly; 3.00 Credits; H,CA,SW-US) The course examines the origins and development of the Gullah Geechee cultures of the Lowcountry. How did these members of the African diaspora develop a creole culture within the profound and brutal limitations of slavery, and how did they sustain it and change under Jim Crow and into the climate and development challenges of the present?

HS-221 Gender and Sexuality (Variable; Variable; 4.00 Credits; H) In this introduction to the critical study of gender and sexuality, we will examine the ways in which gender and sexuality have been fundamentally reorganized since the 18th century. Focusing mainly, but not exclusively, on Britain and the United States, we will use history, literature, and theory to deepen our understanding of these transformations.

HS-262 North American Environmental History (Spring; Variable; 3.00 Credits; H) Our troubling relationship with the natural world might well be the most important issue human societies will face in your lifetime. HS-262 examines one root of this relationship: how and why we have shaped, and been shaped by, different North American environments over time. Through discussion, lectures, readings, and films, we will examine the social, cultural, economic, and political spheres of these human activities since the fifteenth century.

HS-266 History of South Africa (Variable; Variable; 4.00 Credits; I,H) This course covers the history of South Africa from the 17th century to the present. We will focus our attention on specific themes, including imperialism, race and ethnicity, crime and punishment, resistance to apartheid, and the limits of forgiveness. The class will be taught inside SCI Smithfield. This Inside-Out Course is an opportunity for a group of students from Juniata College and

an equal number of students from SCI Smithfield to learn together and to exchange ideas and perceptions about the history of South Africa. Bringing incarcerated and non-incarcerated students together for engaged and informed dialogue allows for transformative learning experiences that facilitates an exchange of ideas in a dialogic format. Instructor permission required for all students.

HS-268 Sword & Scimitar: Islam & West 500-1300 (Variable; Yearly; 3.00 Credits; SW-GE) When discussing culture in a historical context, we must be careful to avoid the stereotypes that may leap to mind. In the twenty-first-century United States, the mention of Islam or the Near East provokes stereotypes that are inaccurate and misleading. In this course, we will learn about the early history of Islam and its intersection with western Christianity and the society of the European Middle Ages. In doing so we will discover the similarities and differences between the cultures and learn (modern prejudices notwithstanding) how they depended on one another both culturally and economically.

HS-272 Natives & Colonists in Early N. America (Variable; Variable; 4.00 Credits; H,CW,SW-US) Love, hate, fear, confusion, respect, admiration, wonder: these are just some of the powerful feelings that infused the relationships between Native Americans and European colonists, and that shaped the history of North America from about 1500 to the eve of the American Revolution. Through extensive discussion, reading, writing, and a role-playing game, HS-272 will help you understand relationships that still affect American society today.

HS-277 History of Food (Variable; Yearly; 4.00 Credits; H) This course will take a transnational view of the history of food from the Middle Ages to the twenty-first century. We will examine food as a part of human experience including its roles as sustenance, commodity, cultural artifact, signifier of identity, and art. While the early emphasis of the course will be on the Atlantic World and the global exchange of foods and cooking techniques, particular attention will be on the United States' regional cuisines and food movements. The course will use scholarly texts, films, field-trips and will require some cooking and tasting of food on some evenings. Prerequisites: Sophomore Standing. Note: There is a fee assessed on this course.

HS-293 Sophomore Colloquium (Variable; Yearly; 4.00 Credits; H,CW) This colloquium exposes students to employment opportunities available to them through the study of history. It focuses upon the development of the skills necessary for success in the history classroom. The Sophomore Colloquium is designed for students with strong interest in history, including education students and students with secondary emphases in history. Prerequisites: sophomore standing and two courses in History or permission of the instructor.

HS-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Offers supplements to the regular departmental program, exploring topics and areas not regularly scheduled. Note: Students may take each ST: course for credit.

HS-305 The American Revolution (Spring; Variable; 4.00 Credits; H,CW,WK-HT) The American Revolution reshaped the world by spreading the idea of independence, and it continues to influence our lives in every way, from debating the rights of citizenship to including Hamilton on your playlist. HS-305 examines the origins and consequences of the American Revolution. The central ques-

tions include: What caused the American Revolution? How did the United States win the War of Independence? What resulted from the American Revolution? Class activities include extensive discussion, reading, and a role-playing game.

HS-306 People's Republic of China (Spring; Yearly; 4.00 Credits; I,H,CW) This course is an upper-level seminar on the history of the Chinese Communist Party and the People's Republic of China. This is a College Writing course (CW), so a principle aim of the course is to instruct students in the techniques of writing papers in history. Work in the course will culminate in a term paper on a topic in 20th-century Chinese History. To that end, considerable effort will be spent in introducing students to tools and strategies for understanding the English-language historiography of Modern China. Some prior knowledge of Chinese history and civilization is recommended.

HS-309 Civil War and Reconstruction (Variable; Variable; 4.00 Credits; H,CW,CTDH) Examines the political, social, military, economic and ideological origins and consequences of the Civil War and Reconstruction. The course looks deeply into several important questions. What caused the Civil War? Why was the Union victorious? Why did the war proceed as it did? What was the nature and legacy of reconstruction? What does this period in our history mean to us now? Prerequisites: HS115 or HS116 and SO, JR, or SR standing.

HS-312 The New South: 1877-1990 (Variable; Variable; 4.00 Credits; H) This seminar will cover the years 1877-1900 and explore the themes on the cultural, political, economic and social history of the U.S. South. Among the important questions covered in the class are: What is the South? How did the South change through significant events such as the Populist movement, the rise of Jim Crow, the Great Depression, the second World War, economic development, and the Civil Rights movement. We will ask how the South's arts, especially music, reflect its history and culture. Prerequisites: HS116 or permission of the instructor.

HS-313 Disease, Medicine & Empire (Spring; Yearly; 4.00 Credits; CA,I,H,CTGES) Disease, Medicine and Empire will explore the intersections of disease, medicine, and race in European empires in the nineteenth and twentieth century.

HS-314 Medieval Medicine (Variable; Yearly; 4.00 Credits; H,CW,CTGES) Despite our popular understanding of the European middle ages as a dirty, disease-ridden, hopelessly backward period, the sources show us quite a different picture. Although a lack of understanding of the means of genetic change and the cause of viral and bacterial disease caused medieval people to understand the human body very differently than we do, that system was not without its logic and efficacy. This course will explore the human body and its diseases in the middle ages through a series of connected readings that introduce the body as a conceptual system and medieval science's attempts to understand it. We will then look at the growing field of genomic research as a way of understanding and comparing our modern systems of understanding the body.

HS-316 WWII in Asia and Pacific (Variable; Variable; 3.00 Credits; I,H) Students will study Japan's war in Asia & the Pacific (1937-45), China's War to Resist Japanese Aggression (1937-45) and the US in the Pacific War (1941-45), all part of the larger world-historical conflict. The war will be examined from the perspectives of

the main combatants, but also from the perspective of colonial subjects, and from the points of view of elites and commoners. Much attention will be paid to roles of race and culture in (mis-) understandings of "the enemy."

HS-320 Interpreting Terrorism (Variable; Yearly; 3.00 Credits; SW-ER) You have grown up in a world shaped by terrorism. How did this happen? What is terrorism, how has it developed, and how have people responded to it? In this course, we will analyze (interpret) terrorism from different directions: its many definitions, its general history beginning with the French Revolution, and the many ways in which people have responded to it. You will also dive into specific topics and present (interpret) your research for a non-academic audience. It is important for us historians to communicate effectively. If we can broaden and deepen the public's understanding of, and appreciation for, the past, we enrich our society. You will learn how to convey your knowledge in a way that the public will find accessible, and even enjoyable or exciting. Course requirements include a field trip.

HS-322 Women's Lives-Medieval Europe (Variable; Variable; 4.00 Credits; H,CW) What could medieval women do? What was it like to be a nun? Who were witches? There are many interesting questions to ask about women in the middle ages, their choices, and their experiences. In this course, we will address them through firsthand accounts from biographies, personal diaries, and literature.

HS-324 Gendering the Raj (Variable; Variable; 4.00 Credits; CA,I,H) This course looks at the real and symbolic roles that British and Indian women and men played in colonial India, providing an opportunity to explore wider theoretical issues relating to race, sex, gender, colonialism, and culture.

HS-325 The U.S. Since 1945 (Either Semester; Variable; 4.00 Credits; H) Covers the social, political and economic history since the Second World War. Themes include: the Cold War, suburbanization, the rise of consumer society, and more. Prerequisite: HS116.

HS-326 Modern China (Variable; Yearly; 4.00 Credits; H,I) China over the past hundred years has played a major role in global affairs and is positioned to remain a dominant presence well into the 21st century. This course examines the rise of modern China focusing on its transition from a traditional Confucian state to a potent economic and political power.

HS-327 Modern Japan (Variable; Variable; 3.00 Credits; H,I) This course traces the history of Japan's rise as a modern nation state beginning with the Meiji Restoration of 1868 up to the present with an emphasis on the cultural, economic and political factors which aided the rapid industrialization in the nineteenth century, Japanese imperialism in the first half of the twentieth century, and Japan's economic "miracle" in postwar Japan.

HS-367 Women in Africa (Variable; Variable; 4.00 Credits; CA,H,I,CTDH) This course will provide students with an understanding of women in sub-Saharan African cultures, their history, traditions, diversity, resilience and adaptability. To do this we will be looking at social structure, kinship networks, economic systems, gender relations, ethnicity and ethnic conflicts, traditional religion, the HIV/AIDS epidemic and other health issues.

HS-399 Special Topics (Either Semester; Variable; 1.00-4.00 Cred-

its) Provides supplements to the regular departmental program, exploring topics and areas not regularly scheduled. Note: Students may take each ST: course for credit.

HS-400 Crimes Against Humanity (Spring; Variable; 4.00 Credits; I,H) This course explores the emergence, evolution, varieties, underlying causes, and means of confronting and coming to terms with genocide and other crimes against humanity. During the course of the semester, we will examine a range of historical contexts and we will also confront tough questions about ethics, resistance, and responsibility. Prerequisites: Junior or Senior standing. Sophomores require permission.

HS-490 History Internship (Variable; Yearly; 2.00-9.00 Credits; H) Prerequisite: Instructor permission and Junior or Senior standing. Co-requisite: HS-495.

HS-492 Sr History Research/Seminar I (Fall; Yearly; 3.00 Credits; H) Serves as a capstone experience that synthesizes materials from history and other disciplines into a substantial written thesis. The senior seminar can be done as an independent study or in conjunction with an internship. When completed the thesis is presented at a public oral defense. Prerequisite: Completion of all core courses and/or permission of instructor.

HS-493 The Historian's Craft (Fall; Variable; 1.00 Credit; H,CW) This course is a seminar-style introduction to historiography and a forum in which senior history students complete part or all of their senior thesis. Students taking the course are expected to work simultaneously with the course instructor, as well as a thesis advisor from within the history department. Students may select a member of the faculty outside the department as a secondary advisor if that complements their thesis topic. Students who elect to write a year-long thesis take HS496 in the Spring semester after taking HS493. Students from other departments who take the course will be expected to complete a paper of comparable length to a senior thesis under the supervision of the course instructor. Prerequisites: One 300 level history course and Senior status.

HS-495 History Internship Seminar (Variable; Yearly; 2.00-6.00 Credits; H) Requires students to reflect on the internship experience and/or pursue relevant research. Instructor permission required. Corequisite: HS-490.

HS-496 Senior History Research/Seminar II (Spring; Yearly; 3.00 Credits; H) If a student needs to work further on the senior thesis, this will allow three further hours of study. Prerequisites: HS493 and Senior standing.

HS-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows departments to offer topics not normally taught. Prerequisites and corequisites vary by topic.

HS-TUT History Teaching Assistant (Variable; Variable; 1.00-3.00 Credits)

INFORMATION TECHNOLOGY/COMPUTER SCIENCE

Informational Technology (IT) Courses:

IT-105 Principles of Programming (Variable; Yearly; 3.00 Cred-

its; N,WK-FR) This course introduces the fundamental principles of programming. Initially, a visual programming language will be used to provide an introduction to algorithmic problem-solving. Then a web-based programming language will be used to illustrate programming language constructs. In addition, the ethical concerns of algorithmic bias will be explored, from the frame of Social Inquiry. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

IT-110 Principles of Information Technology (Fall & Spring; Yearly; 3.00 Credits; S) This course provides a context for further study in information technology. Topics include an overview of the fundamentals of information systems, current and emerging technologies, business applications, communications and decision making, and the impact of these systems on business, government, and society. This course will also emphasize the development of both writing and speaking skills through application of the concepts that define the course. Students who have passed IT-111 or IM-110 may not take this course.

IT-111 Principles of IT Science (Fall & Spring; Yearly; 3.00 Credits; N,CTGIS) An introduction to concepts of information and the "Information Age". Students will develop an understanding of basic computing and information systems principles and the social implications of information and information technology. The course also provides an overview on the creation, organization, analysis, storage, retrieval, and communication of information. The instruction incorporates both collaborative and active learning experiences. The meeting time reflects half of the time of the class, where the rest is online and completed through assignments. Students who have passed IT-110 or IM-110 may not take this course.

IT-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

IT-210 Information Technology Systems (Fall; Yearly; 4.00 Credits; N) This course introduces students to three core areas in Information Technology: networks, database and web. The course progresses through two phases during its study of modern IT environments. Initial study includes all the necessary components of today's IT system environment and its use in business. Secondly, students use a server based database development environment to create an IT system. Prerequisites: CS110. MA116 strongly recommended.

IT-260 Human-Computer Interaction (Variable; Yearly; 3.00 Credits; S,WK-SI) Human-Computer Interaction is a multidisciplinary field with the goal of bringing usability into the design process and to develop interactive products that are easy, effective, and enjoyable to use from a user's perspective. Human interaction with interfaces can be studied, designed, and evaluated. While HCI focuses on technology design, the user-centered design techniques can be used in the creation of any product in all fields of study. Pre- or Co-Req: FYC-101 or EN-110 or EN-109

IT-290 The Metaverse (Fall; Yearly; 3.00 Credits; H,CW,CS) This introductory course focuses on how information technologies shape the way we think and organize ourselves. Studying the technology of the book, the world wide web and the metaverse, students isolate the critical issues of change central to the decision making of leaders in Information Technology. Prerequisites: CM132 or IT110 or IT111.

IT-298 Information Technology Practicum I (Fall & Spring; Yearly; 1.00-4.00 Credits; S) Credit option for students who are applying their classroom theory from the department by working on information technology or digital media projects on campus or off-campus. Credit hours and level (298, 398 or 498) are dependent upon the extent of the project and will be determined by the professor. Available by permission only.

IT-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

IT-306 Software Engineering (Spring; Yearly; 3.00 Credits; N) See CS300. Prerequisite: CS240.

IT-307 Project Management (Variable; Yearly; 3.00 Credits; S,CW,CS,SW-LE) This course reviews and applies project management processes and techniques such as project life cycle, project selection methods, work breakdown instructions, network diagrams, cost estimates, and more. Prerequisites: IT210 and Jr or Sr standing or permission of the instructor. Corequisite: IT308.

IT-308 Innovations for Industry I (Fall & Spring; Yearly; 1.00 Credit; S) This lab will require a team of students to function as a project development team for an IT-related business. The students will be exposed to many aspects of systems analysis, design, development and implementation, as well as project management tools and techniques. Students will be required to learn in a just-in-time mode using on-demand educational resources. Prerequisites: IT210 and Jr or Sr standing or by permission of the instructor. Corequisite: IT307. Note: This course will have appointed class times for projects other than the times listed on the schedule.

IT-310 Social Media (Variable; Variable; 3.00 Credits; F) This course will introduce students to the context and forms of social media. We will explore the theories and practices of narrative expression in online context, explore social media as culture and study the impact of "the sharing economy." What is social media, who uses it, who gains from it, and how is it transforming new media as well as traditional media. One of the outcomes of social media is that everything is connected, creating massive amounts of user generated content and data. Students will learn to analyze, design and visualize this data. We will also focus on the social norms of user communities and how we can leverage it to better understand emerging technologies. Students will have the opportunity to explore both theory and practice of social media through writing assignments, presentations, curating and creating creative content, and participating on both online and offline discussions. Prerequisites: IT110 or IT111 or IM110.

IT-325 Network Design & Management. (Spring; Yearly; 4.00 Credits; N) Focuses on the concept of the foundations of a network in both design and support. The OSI reference model will be examined along with techniques for supporting current technologies that align with each other. Emphasis will be placed on protocols, topologies and traffic analysis. Prerequisites: CS240 or IT210.

IT-330 Geographical Information Systems (Fall & Spring; Yearly; 4.00 Credits; N) (See EES330). A software fee is assessed.

IT-341 Web Design (Fall; Yearly; 2.00 Credits) A study of modern web design along with an examination of markup and scripting

languages (e.g., HTML, JavaScript), page, image and multimedia formats, and the techniques in developing and managing a web site. Page design, graphical user interfaces, interactive techniques and the importance of e-commerce are also emphasized. Prerequisites: CS110 or permission.

IT-342 Web Programming (Fall; Yearly; 2.00 Credits) A study of the modern web programming environment, including introduction to Web 2.0 and Web 3.0, HTML, XHTML, and JavaScript. The class will address client-side scripting as well as server-side technology, and accessing a database. These technologies will be combined to create an active, dynamic web page. Prerequisite: CS-240. Corequisite: IT-341.

IT-350 Security Engineering (Spring; Variable; 3.00 Credits; N) This course will focus on the area of computer security. Included will be information on attacks, prevention, as well as protection from non-malicious threats. It will look at network as well as web based security. A focus will be on creating secure computer environments from the ground up, not as an afterthought. Prerequisites: IT210 and junior standing or permission of the instructor.

IT-351 Security Engineering Lab (Spring; Yearly; 1.00 Credit) This course is a laboratory course with hands-on activities to supplement the instruction given in the IT350, Security Engineering course. The lab activities will center on digital forensics, hacker exploits and protection techniques, penetration testing and vulnerability analysis. Co-requisite IT350.

IT-375 Managing Advanced Technology (Either Semester; Variable; 3.00 Credits; S,N) This course will help students develop an ability to manage advanced technology for competitive advantage. Organizational issues associated with identifying, developing, and implementing advanced technology will be discussed. Specific topics to be addressed include developing a new technology, technology transfer, commercialization of new technology, technology strategy, organizational design to complement new technology, and the impact of technology on human resources. Prerequisites: IT110 and Junior standing or permission of the instructor.

IT-380 Innovations for Industry II (Fall & Spring; Yearly; 4.00 Credits; S,CTGIS) See IT308. This course will have appointed class times for projects other than those listed on the schedule. A continuation of IT308. Prerequisites: IT307 & IT308 and senior standing.

IT-398 Information Technology Practicum II (Fall & Spring; Yearly; 1.00-4.00 Credits; S) Credit option for students who are applying their classroom theory from the department by working on information technology or digital media projects on campus or off-campus. Credit hours and level (298, 398 or 498) are dependent upon the extent of the project and will be determined by the professor. Available by permission only.

IT-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

IT-480 Innovations for Industry III (Fall & Spring; Yearly; 4.00 Credits; S,CTGIS) See IT380. This course will have appointed class times for projects other than those listed on the schedule. A continuation of IT380. Prerequisites: IT380 and senior standing.

IT-490 Information Technology Internship (Fall & Spring; Yearly; 2.00-9.00 Credits) See Internship in the catalog. Corequisite: IT495. Prerequisite: Jr. or Sr. standing.

IT-495 IT Internship Seminar (Fall & Spring; Yearly; 2.00-6.00 Credits) See Internship in the catalog. Corequisite: IT490.

IT-496 Information Technology Seminar (Fall & Spring; Yearly; 1.00 Credit; S) Discusses current advances in information technology not otherwise covered in our program such as, but not limited to, networking, artificial intelligence, societal issues. In addition, this course allows senior students to plan an individual research project to be completed in IT497. Prerequisites: Junior or Senior standing and IT210 or CS240.

IT-497 Information Technology Research (Fall & Spring; Yearly; 3.00-5.00 Credits; S,CW) Allows students to carry out the independent technology research project as designed in IT496. Prerequisites: IT496.

IT-498 Information Technology Practicum III (Fall & Spring; Yearly; 1.00-4.00 Credits; S) Credit option for students who are applying their classroom theory from the department by working on information technology or digital media projects on campus or off-campus. Credit hours and level (298, 398 or 498) are dependent upon the extent of the project and will be determined by the professor. Available by permission only.

IT-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer topics not normally taught. Prerequisites vary by title.

IT-TUT IT Teaching Assistant (Variable; Variable; 1.00-4.00 Credits) Teachers Assistant

Computer Science (CS) Courses:

CS-110 Computer Science I (Variable; Yearly; 3.00 Credits; N,CTGES,CTGIS) An introductory study of computer science software development concepts. Python is used to introduce a disciplined approach to problem solving methods, algorithm development, software design, coding, debugging, testing, and documentation in the object oriented paradigm. This is the first course in the study of computer science. Recommended programming experience or IT110 or IT100, IT111 or IM110 or MA103 but not necessary.

CS-110G Computer Sci I (Genomics) (Spring; Variable; 3.00 Credits; N) The CS 110 course project and topic emphasis is focused on genomics applications and big data management. This course will be specifically available for the Genomics Leadership Initiative Certificate.

CS-116 Discrete Structures (Variable; Yearly; 4.00 Credits; Q,N) Discrete Structures (Fall; Yearly; 4.00 Credits; N, Q) Introduces mathematical structures and concepts such as functions, relations, logic, induction, counting, and graph theory. Their application to Computer Science is emphasized. Pre-requisite: high school algebra.

CS-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites will vary by topic.

CS-220 Computer Organization (Fall; Yearly; 4.00 Credits; N) An introduction to digital computer systems including a treatment of logic and digital circuits, data representation, device characteristics and register transfer notation covered in a manner that stresses application of basic problem solving techniques to both hardware and software design. Students gain experience programming in an assembly language to reinforce these systems and design concepts. Prerequisites: CS110.

CS-240 Computer Science II (Spring; Yearly; 4.00 Credits; N) A continued study of computer science foundations as begun in Computer Science I. An object-oriented language such as JAVA is used to develop and implement large programs involving various data structures and data abstraction as exemplified by packages and modules. Search, sorting, advanced data structures, programming methodology and analysis are emphasized. Prerequisites: CS110 and MA116 or MA210.

CS-255A Android Programming (Spring; Yearly; 1.00 Credit; N) This course will take your existing Java skills learned in Computer Science I and turn them into Android programming experience. Students will learn the skills in order to develop a fully functional application. Programming in the Android Studio environment, activity and fragment lifecycles, basic user interface design, and application distribution are emphasized. Prerequisites: CS240 and Instructor Permission.

CS-255B COBOL Programming (Spring; Yearly; 2.00 Credits; N) The students will prepare a portfolio of computer programs written in the language. The programs are reviewed, critiqued, and then the student has an opportunity to revise them as needed for final inclusion in the portfolio. Prerequisites: CS110 and Sophomore standing and permission.

CS-255C C++ Programming (Spring; Yearly; 2.00 Credits; N) The students will prepare a portfolio of computer programs written in the language. The programs are reviewed, critiqued, and then the student has an opportunity to revise them as needed for final inclusion in the portfolio. Prerequisites: CS110 and Sophomore standing and permission.

CS-255F FORTRAN Programming (Spring; Yearly; 2.00 Credits; N) The students will prepare a portfolio of computer programs written in the FORTRAN language. The programs are reviewed, critiqued, and the student has an opportunity to revise them as needed for final inclusion in the portfolio. Prerequisites: CS110 and Sophomore standing and permission of instructor.

CS-255P Perl Programming (Spring; Yearly; 2.00 Credits; N,CTGES) The students will prepare a portfolio of computer programs written in the Perl language. The programs are reviewed, critiqued, and then the student has an opportunity to revise them as needed for final inclusion in the portfolio. Prerequisites: CS110 and Sophomore standing and permission.

CS-255R Ruby Programming (Spring; Yearly; 2.00 Credits; N) The students will prepare a portfolio of computer programs written in the Ruby language. The programs are reviewed, critiqued, and then the student has an opportunity to revise them as needed for final inclusion in the portfolio. Prerequisites: CS110 and Sophomore standing and permission.

CS-255U Unix Programming (Fall & Spring; Yearly; 1.00 Credit;

N,CTGES) The students will prepare a portfolio of basic Unix programs and scripts. The course covers basic Unix commands, editing techniques, regular expression usage, and script building. The programs are reviewed, critiqued, and the student has an opportunity to revise them as needed for final inclusion in the portfolio. Prerequisites: CS110.

CS-255Y Python Programming (Spring; Yearly; 2.00 Credits; N,CTGES) The students will prepare a portfolio of computer programs written in the Python language. The programs are reviewed, critiqued, and then the student has an opportunity to revise them as needed for final inclusion in the portfolio. Prerequisites: CS110 and Sophomore standing and permission.

CS-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

CS-300 Software Engineering (Spring; Yearly; 3.00 Credits; N) An introduction to the issues of software design. Topics include software engineering, software project management and development of projects in a modern design environment. The focus of the course is on the process used to develop quality software. The students work in teams to develop, implement and fully document a computer project to apply these concepts. Prerequisite: CS240.

CS-305 Software Models (Fall; Even Years; 3.00 Credits; N) A study of current software implementation models. Models of procedural based control for both batch and interactive settings, event driven control, real time control and exception handling are considered within representative interactive development environments such as .NET Design of graphical user interfaces for web-based and windows-based applications are integrated into the team projects. Prerequisites: IT240 or CS240.

CS-315 Algorithms and Analysis (Either Semester; Odd Years; 4.00 Credits; CW,N) The study and analysis of algorithms, their complexity and supporting data structures. Topics include searching, sorting, mathematical algorithms, tree and graph algorithms, the classes of P and NP, NP-complete and intractable problems, and parallel algorithms. Prerequisites: CS240 and MA116.

CS-320 Operating Systems (Spring; Even Years; 4.00 Credits; N) An introduction to the theory, evaluation, and implementation of computer operating systems. Topics include memory, process and resource management, elementary Queuing and network models, and scheduling. Prerequisites: CS220 & CS240.

CS-330 Computer Graphics (Spring; Even Years; 3.00 Credits; N) An introduction to both the hardware and software utilized in computer graphics. The emphasis is on a top-down, programming approach, using a standard application programmer's interface. Students will create three-dimensional and interactive applications, in addition to studying several of the classic, low-level, rendering algorithms. Prerequisites: CS240. Corequisite: CS255C.

CS-340 Numerical Analysis (Spring; Even Years; 3.00 Credits; QM,N) See MA340.

CS-362 Languages and Translation (Either Semester; Odd Years; 4.00 Credits; N) A systematic approach to the study and analysis of computer programming languages. The procedural, functional,

object-oriented and logical language paradigms are examined through the use of representative languages. Syntax and semantics issues are emphasized through the study of translation techniques in formal labs and group projects. Prerequisites: CS220 and CS240. Must have Junior or Senior standing.

CS-370 Database Management Systems (Fall; Yearly; 3.00 Credits; N,CTGIS) Focuses on concepts and structures necessary to design and implement a database management system. Various modern data models, data security and integrity, and concurrency are discussed. An SQL database system is designed and implemented as a group project. Prerequisites: CS110.

CS-390 Computer Science in Germany Seminar (Spring; Yearly; 1.00 Credit; I,SW-GE) This course will introduce the student to studying computer science in Germany. During the spring semester at Juniata, students will prepare for their travel to Germany by (1) studying the functional German required for travel, (2) reading about the culture and history of the country (and the state of North Rhine-Westfalia in particular), and (3) configuring the technology required for that year's selected topic in CS or IT. (The course content will vary each year.) This course is followed by CS-391, which is given at the Muenster University of Applied Sciences, for between two and three weeks each May or June. The instructor at MUAS will be a Juniata College faculty member. Pre-requisites: CS-240 and instructor permission. Completion of both CS-390 and CS-391 will fulfill the International or the Global Engagement requirement. A fee of \$1,200 is applied that is split between the spring and summer terms and covers instructional costs, tuition, and Juniata College credit. Students will need to purchase their own plane and train fares. The host institution will facilitate housing for the students.

CS-391 Computer Science in Germany (Summer; Variable; 2.00 Credits; I,SW-GE) This course is given at the Muenster University of Applied Sciences, for between two and three weeks each May or June. The instructor at MUAS will be a Juniata College faculty member. Pre-requisites: CS-240 and instructor permission. Completion of both CS-390 and CS-391 will fulfill the International or the Global Engagement requirement. A fee of \$1,200 is applied that is split between the spring and summer terms and covers instructional costs, tuition, and Juniata College credit. Students will need to purchase their own plane and train fares. The host institution will facilitate housing for the students.

CS-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) An introduction to one of the branches of computer science not currently included in the regular course offerings, such as Theory of Computation, Artificial Intelligence, Parallel processing, computer architecture, etc. Prerequisites: Variable depending upon the course. Note: Students may take each ST course for credit.

CS-480 Computer Science Seminar I (Fall & Spring; Yearly; 1.00 Credit; N) Discusses current advances in computer science and information technology not otherwise covered in our program such as, but not limited to, networking, artificial intelligence, societal issues. In addition this course allows senior students to plan an individual research project to be completed in CS485. This course, taken by a junior may be repeated as a senior as CS481. Prerequisites: Junior or senior standing and CS220 or CS240 or IT210.

CS-481 Computer Science Seminar II (Fall & Spring; Yearly; 1.00 Credit; N) See CS480. Prerequisite: CS480.

CS-485 Computer Science Research (Fall & Spring; Yearly; 3.00-5.00 Credits; N,CW) Allows students to carry out the independent computer science research project as designed in CS480 or CS481. Prerequisite: CS480 or CS481.

CS-490 Computer Science Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; N) A placement with an organization having a data processing department. An in-depth exposure to the practice of computer science in a computer processing environment is provided. Note: may be repeated up to a total of 9 hours credit. Corequisite: CS495. Prerequisites: POE in Computer Science & permission and Jr. or Sr. standing.

CS-495 Computer Science Internship Seminar (Fall & Spring; Yearly; 2.00-6.00 Credits; N) Requires students to reflect on the internship experience and/or pursue research related to the placement. Note: may be repeated up to a total of 9 hours credit. Corequisite: CS490. Prerequisite: POE in Computer Science, permission and Senior standing.

CS-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

Integrated Media (IM) Courses:

IM-100 Integrated Media Art Seminar (Spring; Yearly; 1.00 Credit; H) This one credit course is an introduction to the Integrated Media Arts program and its offerings in terms of areas of study, practicum, internships, on campus projects and programs abroad. Meeting the faculty and learning of their interests and research goals is essential to finding your place in the department. Opportunities for Study Abroad, Internships and networking with Alumni are all part of this practical course with opportunities for written reflection and presentations. Together we explore your best options in professional and graduate school opportunities to inform your choice of POE and plan your course of study.

IM-110 Principles of Digital Media (Fall & Spring; Yearly; 3.00 Credits; CTDH) An introduction to the concepts of digital media. Students will develop an understanding of the basics of digital media, the technology surrounding the creation and use of digital media, and its association with art, communication, and information technology. Through a laboratory context of experimentation and discussion, the course explores the use of various creative software programs used to create artistic and expressive media content. The course provides an overview of media formats, media creation, the fundamental properties of the tools required for media manipulation, and insight into the artistic, social, psychological, and legal aspects of digital media. Restrictions: IMA or Art POE or secondary emphasis, or by instructor permission.

IM-199 IM Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer topics not normally scheduled.

IM-241 Info. Discovery and Architecture (Fall; Yearly; 3.00 Credits; S,QS,CTGIS) This course considers various aspects of organizing digital information for public consumption. Data representation, overviews of file formats, storage organization, modern database structures and web site organizations provide a technical dimension of information. The visualization, graphical and basic statistical analysis of data is then considered for information presenta-

tion. Data mining techniques covered offer information discovery methods. Prerequisite: IT110 or IT111 or CS110 or permission.

IM-242 Info Visualization (Fall; Variable; 3.00 Credits; N,CTDH,CTGES) This course considers the various aspects of presenting digital information for public consumption visually. Data formats from binary, text, various file types, to relational databases and web sites are covered to understand the framework of information retrieval for use in visualization tools. Visualization and graphical analyses of data are considered in the context of the human visual system for appropriate information presentation. Various open-source and commercial digital tools are considered for development of visualization projects. Prerequisite: IT 110, IT 111, IM 110, DS 110, or CS 110 or permission.

IM-250 Digital Audio Production (Spring; Yearly; 3.00 Credits; F,CTDH) Digital Audio Production introduces the student to the fundamentals of capturing, editing and reproducing sound, using digital tools. Hands on studio work combines with basic acoustic theory to help conceptualize the bridge between the analogue and digital worlds. The final project for the course puts the student in teams to record, edit, mix and do simple mastering on a full length CD.

IM-298 Integrated Media Practicum I (Variable; Yearly; 3.00 Credits; SW-LE) Credit option for students who are applying their classroom theory by working on IMA projects on- or off-campus. Level (298, 398 or 498) is dependent upon the extent of the project and will be determined by the professor. By instructor permission only.

IM-310 Social Media (Variable; Variable; 3.00 Credits; F) This course will introduce students to the context and forms of social media. We will explore the theories and practices of narrative expression in online context, explore social media as culture and study the impact of "the sharing economy." What is social media, who uses it, who gains from it, and how is it transforming new media as well as traditional media. One of the outcomes of social media is that everything is connected, creating massive amounts of user generated content and data. Students will learn to analyze, design and visualize this data. We will also focus on the social norms of user communities and how we can leverage it to better understand emerging technologies. Students will have the opportunity to explore both theory and practice of social media through writing assignments, presentations, curating and creating creative content, and participating on both online and offline discussions. Prerequisites: IM110 or IT110 or IT111 or CS110.

IM-360 Digital Video Production (Spring; Even Years; 3.00 Credits; F,CTDH) Video Production I is a practical hands-on experience with cinematography, audio production, and lighting. Students learn the necessary skills to tell a well produced digital story with appropriate technical knowledge to enhance the narrative and audience engagement. This course will teach students how to work as a professional videographer by expanding digital media knowledge and techniques. Students will learn the technical foundations of video production, camera operation, lighting, audio acquisition and editing. Students will be encouraged to investigate the impact of video content based on the viewer in addition to artistic potential through digital storytelling. Prerequisites: IM110 or permission by instructor with prior video experience.

IM-361 Video Production II (Spring; Yearly; 3.00 Credits; F,CTDH) Digital Video Production II allows students to work from ideas to a

final video production that is ready to showcase at a film premiere, enter into film competitions, or share with a client as a professional commercial for their business. From preproduction planning all the way to post production editing, students will work on a series of videos with full creative rights. Students will be required to oversee planning, storyboarding, shooting, editing, and final exporting. Students with prior video production experience are preferred. Prerequisite: IM360 or by instructor permission.

IM-375 Community Design Lab (Fall; Yearly; 4.00 Credits; SW-LE,CTDH) Community Design Lab (formerly Integrated Media Arts Lab I) is a laboratory context of experimentation and discussion for students in the IMA Program. Students are given the opportunity to engage in a reciprocal partnership with a local community partner. Working in a team-driven environment with a local community partner students propose, plan, and complete a real-world design project. The course includes reflection, design deliverables, and client presentations throughout the semester. Prerequisite: IM-110, sophomore standing or higher.

IM-376 Business of Design (Spring; Yearly; 3.00 Credits) Business of Design (formerly Integrated Media Arts Lab II) is a laboratory context of experimentation and discussion for students in the IMA Program. The course explores the methods and practices of creative industry standards and professional business practices of being a creative entrepreneur in a competitive world. Students will work on multiple individually driven creative projects to find their personal brand including the development of their online presence as a self promotion tool. By the end of the semester students will understand the business side of creativity including ethical obligations, intellectual property, contracts, negotiation techniques, time tracking, and pricing in a business setting. Pre-Req: sophomore standing or higher.

IM-398 Integrated Media Practicum II (Either Semester; Yearly; 3.00 Credits; SW-LE) Credit option for students who are applying their classroom theory by working on IMA projects on- or off-campus. Level (298, 398 or 498) is dependent upon the extent of the project and will be determined by the professor. By instructor permission only.

IM-399 Special Topics (Variable; Variable; 1.00-4.00 Credits)

IM-490 IM Internship Need Paperwork (Variable; Yearly; 2.00-6.00 Credits) See catalog.

IM-495 Internship Seminar (Variable; Yearly; 2.00-9.00 Credits) See Catalog.

IM-496 IMA Seminar (Fall; All Years; 3.00 Credits) This course is designed to serve as a capstone course for seniors who emphasize Integrated Media Arts in their POE. Students are expected to examine design theory and research methods relevant to a topic, theme, issue, or problem that has served as an area of special interest. This course is intended to allow students to develop, compose, organize, revise, and edit their own writing. Through written assignments students will have the opportunity to produce a thesis or creative project. Students must have senior standing and have a POE in IMA (designated or individualized). Distinction may be achieved if the candidate meets the IMA Distinction requirements.

IM-497 IMA Research (Spring; Yearly; 3.00 Credits) This course is

designed to serve as a capstone course for seniors who emphasize Integrated Media Arts in their POE. Students are expected to examine design theory and research methods relevant to a topic, theme, issue, or problem that has served as an area of special interest. This course is intended to allow students to develop, compose, organize, revise, and edit their own writing. Through written assignments students will have the opportunity to produce a thesis or creative project. Students must have senior standing and have a POE in IMA (designated or individualized). Distinction may be achieved if the candidate meets the IMA Distinction requirements.

IM-498 Integrated Media Practicum III (Either Semester; Yearly; 3.00 Credits; SW-LE) Credit option for students who are applying their classroom theory by working on IMA projects on- or off-campus. Level (298, 398 or 498) is dependent upon the extent of the project and will be determined by the professor. By instructor permission only.

IM-TUT IMA Teaching Assistant (Variable; Variable; 1.00-4.00 Credits)

INTERNATIONAL STUDIES

IS-104 Ideas & Power in the Modern World (Spring; All Years; 4.00 Credits; H,I,CW,SW-GE) An integrative examination of human experience with an emphasis on language, gender, race, and literature and the ways in which different cultures and classes understand human reality.

IS-105 World Regional Geography (Either Semester; Yearly; 3.00 Credits; I) A survey for the world's major cultural realms. Included are geographic setting, resources, environmental restrictions, historical and cultural traditions, industrial and agricultural development, economic base and trends, population distribution and political subdivisions.

IS-199 Special Topics (Fall; Yearly; 1.00 Credit; I) This seminar-style course, primarily intended for first-year students interested in International Studies, will explore the theory and history of modern nation-states, and will examine ways in which people's identities as members of nation-states are formed in various ways by institutions and social processes, and how ideas such as ethnicity, race and culture are tied in complex ways to national identities.

MATHEMATICS

Many of the mathematics courses use mathematical software to facilitate computation and aid mathematical reasoning.

MA-100 Precalculus (Fall; Yearly; 3.00 Credits; N,QM) This course is designed for students who need a structured review of precalculus mathematics. Topics covered include solving equations and inequalities, graphing, and analysis of functions, including polynomial and rational functions, exponential and logarithmic functions and trigonometric functions. Integrates the use of the software package Maple in classroom demonstrations and homework assignments. This course cannot be included in a mathematics POE. Prerequisites: High school algebra and trigonometry.

MA-103 Quantitative Methods (Fall & Spring; Yearly; 3.00 Credits;

Q) This course prepares students to be quantitatively literate citizens in today's world. By learning to think critically about quantitative issues, students will be able to make responsible decisions in their daily lives. Problems are analyzed and solved using numerical, graphical, statistical, and algebraic reasoning. Technology is used to help visualize data and facilitate calculations, as well as to present quantitative output and verbal arguments.

MA-109 Mathematical Problem Solving (Variable; Yearly; 3.00 Credits; QM,WK-FR) In this course, students use unsophisticated math to find solutions to problems. Many of the math concepts will be familiar but there are some that will be new. The focus will be on using math creatively to answer questions of interest. Unlike standard math exercises that ask students to apply techniques to come up with a numerical answer or an expression, the questions require students to use the mathematics they know to come up with a strategy to accomplish a task or make meaningful decisions. Prereq or Coreq: FYC-101 or EN-110 or EN-109.

MA-116 Discrete Structures (Fall; Yearly; 4.00 Credits; N,Q) Introduces mathematical structures and concepts such as functions, relations, logic, induction, counting, and graph theory. Their application to Computer Science is emphasized. Pre-requisite high school algebra.

MA-130 Calculus I (Fall & Spring; Yearly; 4.00 Credits; N,QM) An introduction to calculus including differentiation and integration of elementary functions of a single variable, limits, tangents, rates of change, maxima and minima, area, volume, and other applications. Integrates the use of computer algebra systems, and graphical, algebraic and numerical thinking.

MA-138 Mathematics and Democracy (Variable; Yearly; 4.00 Credits; N,QM,WK-FR) Introduction to topics in mathematics related to democracy including voting theory, gerrymandering, and apportionment. We will discuss the comparison between these topics mathematically versus politically. Prerequisite or Corequisite: FYC-101 or EN-110 or EN-109.

MA-155 The Heart of Mathematics (Spring; Yearly; 3.00 Credits; N,WK-FR) The goal of this course is to give a broad range of students the hands-on experience of doing mathematics. Topics may include infinity, higher dimensions, chaos, and graph theory. The emphasis will be on the process of doing mathematics: generating examples, looking for patterns, making conjectures, and proving these conjectures. Prerequisites: FYC 101.

MA-160 Linear Algebra (Fall & Spring; Variable; 3.00 Credits; N,QM) An introduction to systems of linear equations, matrices, determinants, vector spaces, linear transformations, eigenvalues, and applications. Prerequisites: MA130.

MA-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) An introduction to one of the branches of mathematics not currently included in the regular course offerings.

MA-205 Elementary Statistics (Variable; Yearly; 4.00 Credits; N,QS,WK-SP) Introduction to traditional statistical concepts including descriptive statistics, binomial and normal probability models, confidence intervals, tests of hypotheses, linear correlation and regression, two-way contingency tables, and one-way analysis of variance. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109.

MA-208 Symbolic Logic (Variable; Yearly; 4.00 Credits; N,H,WK-FR) An introduction to the basics of first-order logic: the concept of artificial language, techniques for symbolizing ordinary languages and arguments, formal inference systems (either truth-free method or natural deduction), and other advanced topics in first-order logic. It has no prerequisites beyond high school algebra.

MA-210 Foundations of Mathematics (Fall; Yearly; 3.00 Credits; CW) An introduction to the logical and set-theoretic basis of modern mathematics. Topics covered include propositional and predicate logic; induction; naive and axiomatic set theory, binary relations, mappings, infinite sets and cardinality; finite sets and combinatorics; and an introduction to the theory of computability. Students will learn to read and to express mathematical ideas in the set-theoretic idiom. Prerequisites: MA160 or MA116 or PL208 or MA208 or permission of the instructor.

MA-220 Introduction to Probability & Statistics (Fall & Spring; Variable; 4.00 Credits; N,QS,CTGES) An introduction to the basic ideas and techniques of probability theory and to selected topics in statistics, such as sampling theory, confidence intervals, and linear regression. Prerequisite: MA130.

MA-230 Calculus II (Fall & Spring; Yearly; 4.00 Credits; N,QM) Expands the treatment of two-space using polar and parametric equations. Emphasizes multivariable calculus, including vectors in three dimensions, curves and surfaces in space, functions of several variables, partial differentiation, multiple integration, and applications. Prerequisite: MA130.

MA-233 Integrals Series & Differential Equations (Fall; Yearly; 2.00 Credits; N) Integration, Taylor and Fourier series, and an introduction to differential equations, with applications and the use of the software package Maple. (Course meets four times per week and concludes at midterm.) Note: A student may receive credit for MA233 or MA235, but not for both. Prerequisite: MA130.

MA-235 Calculus III (Fall; Yearly; 4.00 Credits; N,QM) A continuation of the calculus sequence. Topics include methods of integration by Simpson's Rule, applications, Taylor and Fourier series; introduction to ordinary differential equations; integration in polar, cylindrical, and spherical coordinates; differential and integral vector calculus. Prerequisites: MA230.

MA-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) An introduction to one of the branches of mathematics not currently in the regular course offerings. Prerequisites: Vary depending on course offering.

MA-303 Mathematical Modeling (Fall; Yearly; 3.00 Credits; N,QM,CW) How to use mathematics to model "real-world" problems. Modeling topics range from population dynamics to economics to the nuclear arms race. Mathematical tools range from calculus to curve fitting to computer simulation. How to make a little bit of mathematics go a long way. Note: MA160 is recommended. Prerequisite: MA130 and experience with programming and Minitab.

MA-316 Combinatorics (Fall; Even Years; 3.00 Credits; QM,N) Advanced counting: what they didn't teach you on Sesame Street. An introduction to graphs, trees, and enumeration techniques with applications to computer science and biology. Prerequisites: MA116 or MA210 or MA220 or permission of the instructor.

MA-321 Multivariate Statistics (Spring; Variable; 3.00 Credits; N,QS) A class in multivariate statistical techniques including non-parametric methods, multiple regression, logistic regression, multiple testing, principle analysis. Prerequisites: An introductory statistics course (MA220 or BI305 or PY214 or EB211) and linear algebra (MA 160) or Calculus 1 (MA 130).

MA-322 Probability (Spring; Even Years; 3.00 Credits; N,QM) Topics in probability including discrete and continuous random variables, expectations, mean, variance, moment generating functions, multivariate distributions, correlation, and independence, all leading to an efficient study of the binomial, Poisson, gamma, chi-square, and normal distributions. Prerequisites: MA220 and MA230; MA235 is recommended.

MA-325 Statistical Consulting (Variable; Yearly; 3.00 Credits; N,QS,CW,SW-LE) The participating students will receive training during the semester in consulting on statistical problems and to assist in collaborative efforts with faculty and/or staff on client-partnered projects that are pre-determined. The semester-long project provides the student with both real work experience in the field of statistics and a project-based learning experience in partnership with the client. May be taken multiple times for credit. Pre-Req: FYC-101 or EN-110 or EN-109; any one course from the following list: BI-305, EB-211, ESS-230, ESS-309, MA-205, MA-220, PY-361, or SW-215.

MA-335 Differential Equations (Spring; Yearly; 4.00 Credits; N,QM) Theory and application of ordinary differential equations. Emphasis on modern qualitative techniques, with numerical and analytical approaches used when appropriate. Contains a brief introduction to partial differential equations. Prerequisites: MA130 and MA230 and MA235 or MA233.

MA-340 Numerical Analysis (Spring; Even Years; 3.00 Credits; N,QM) Theory and application of numerical approximation techniques. Topics included are numerical error, root-finding, interpolation and polynomial approximation, numerical differentiation and integration, and differential equations. Prerequisites: MA160, MA130 and CS110 or permission. (Also listed as CS340.)

MA-350 Topics in Geometry (Spring; Odd Years; 3.00 Credits; N) Examines the history and development of geometry with an axiomatic development of Euclidean geometry leading to an investigation of hyperbolic and elliptical non-Euclidean geometries. The roles of these discoveries in the history of mathematics are emphasized. Prerequisites: MA210 or PL208 or MA208.

MA-355 Nature of Mathematics (Spring; Odd Years; 1.00 Credit) An introduction to the history and philosophy of mathematics. Briefly traces the historical development of mathematics from its Oriental and Greek origins to modern times. Surveys the different philosophies of mathematics and provides some insight into the current crisis in the foundations of mathematics. Corequisite: MA350. Prerequisite: MA210 or PL208 or MA208.

MA-360 Abstract Algebra (Spring; Even Years; 3.00 Credits) Investigates the algebraic properties of the real numbers and their generalizations. Emphasis on group theory, with introductions to integral domains, rings, fields and vector spaces. Prerequisites: MA160 and MA210.

MA-365 Number Theory (Fall; Odd Years; 3.00 Credits; N) An in-

vestigation of topics in Elementary Number Theory including divisibility, primes, congruence, congruence equations, quadratic residues and quadratic reciprocity, arithmetic and multiplicative functions, Diophantine equations, and other topics selected according to interest. Prerequisites: MA210 or permission of the instructor.

MA-370 Real Analysis (Spring; Odd Years; 3.00 Credits; N) Focuses on functions of a real variable, sequences, limits, continuity, differentiation and the derivation of standard theorems of the differential calculus. Prerequisites: MA210 and MA230 and MA235.

MA-375 Complex Analysis (Fall; Even Years; 3.00 Credits; N) Algebra and geometry of the complex numbers, analytic functions, complex integration, Taylor and Laurent series, residue theory, physical applications, and other topics as time allows. Prerequisites: MA235.

MA-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) An introduction to one of the branches of mathematics not currently included in the regular course offerings, such as number theory, history of mathematics, chaos and fractals, topology, graph theory, mathematical logic. Prerequisites: Vary depending on course offering. Note: abbreviated ST: Students may take each ST: course for credit.

MA-480 Mathematics Seminar I (Fall; Yearly; 1.00 Credit; N) A discussion-based study of current mathematical literature and modeling problems. Students will both apply their previous mathematical knowledge and explore new topics. In addition, students may use this course as preparation for an individual research project to be completed in MA485. A junior taking this course may repeat it as a senior as MA481. Prerequisites: junior or senior standing, MA160, MA210 and MA235 or permission of the instructor.

MA-481 Mathematics Seminar II (Fall; Yearly; 1.00 Credit; N) See MA480. Prerequisite: MA480.

MA-485 Mathematics Research (Fall & Spring; Yearly; 3.00-5.00 Credits; N) Allows students to pursue a program of directed original research in pure or applied mathematics. Required of candidates for distinction in mathematics POE. Prerequisites: MA480.

MA-490 Mathematics Internship/Needs Paperwork (Fall & Spring; Yearly; 2.00-9.00 Credits; N) Placement with an organization applying mathematical techniques such as statistical analysis, operations research, actuarial mathematics, or systems analysis. Designed to afford the student an opportunity to apply analytical and technical skills developed in the POE. Prerequisites: POE in Mathematics, permission and Jr. or Sr. Standing. Corequisite: MA495.

MA-495 Internship Research/Seminar (Fall & Spring; Yearly; 2.00-6.00 Credits; N) Requires students to reflect on the internship experience and/or pursue research related to the placement. Corequisite: MA490. Prerequisite: permission.

MA-TUT Mathematics Teaching Assistant (Variable; Variable; 1.00-3.00 Credits; N)

MUSIC

MS-101 Music Fundamentals (Variable; Yearly; 3.00 Credits;

F,WK-CE) Designed to teach students the basic tools and elements of music and its notation. Students learn to become literate in the fundamentals of music (reading and writing music notes, intervals, scales, chords, rhythms, structure...) and apply that knowledge to composition (e.g. a group project composing a brief "percussion" ensemble piece) and basic piano skills. Discussions of the importance of music in society and in education. Listening skills are developed over the course of the semester. Pre- or Co-Req: FYC-101 or EN-110 or EN-109.

MS-110 Survey of Western Music (Fall; Yearly; 3.00 Credits; F) Uses the historical development of "Western" music literature as the basis for forming a better understanding of the art of music. Listening skills are developed over the course of the semester.

MS-112 Introduction to Aesthetic Experience (Spring; Odd Years; 3.00 Credits; F) Introduces the aesthetic experience as a phenomenon of the human condition. Emphasizes an understanding of what the aesthetic experience is and learning to maximize the experience through perception of how the elements of an art work interact. Students learn to take from art what it uniquely offers.

MS-116 World Musics and Cultures (Spring; Yearly; 3.00 Credits; F,I,SW-GE) World Musics and Cultures is a survey class intended to educate students about a variety of different cultures and how music functions in human society. Cultures covered will include South Asia (India and Pakistan), East Asia (China, Japan, and Korea), the Caribbean (Jamaica, Trinidad, and Cuba), and Sub-Saharan Africa, along with other possibilities.

MS-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the departments to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

MS-200 Music Literacy (Fall & Spring; Yearly; 1.00 Credit; WK-CE) Music Literacy provides student musicians an opportunity to complete the Ways of Knowing Creative Expression requirement by learning to speak and write knowledgeably about an instrument, the music they are performing, and music's cultural context, as well as music history and theory. Develops active listening skills. To enroll in this course and to earn the Creative Expression requirement, students must have taken prior to and/or concurrently with this course, 3 credits of MU courses, taken in the same instrument. Instructor permission is required.

MS-230 History of American Popular Music (Variable; Variable; 3.00 Credits; F) This course covers popular music in America, from Revolutionary War era through modern practices. Units on mainstream pop, jazz and its ancestors, early town bands, musical theatre, country, the fragmentation of the market in the 1960's, and other topics are included. Students complete various presentations and readings on auxiliary topics affecting the development of mainstream pop music. Prerequisites: MS110.

MS-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the departments to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

MS-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Provides supplements to the regular departmental program, exploring topics and areas not regularly scheduled. Note: abbreviated ST:

(title). Students may take each ST course for credit.

Applied Music:

Three credit hours of any MU course/studio on the same instrument, voice or in the same ensemble fulfills a Distribution requirement. An additional three hours on the same instrument, voice or in the same ensemble used in the initial Distribution requirement fulfill a complete Distribution requirement. (See Academic Planning: Graduation Checklist) Regular practice outside of class is required, and one public performance or jury is required each semester.

Private lessons and applied music classes are available to all students. One-half hour lessons earn one credit and one-hour lessons earn two credits. All private lessons carry a fee.

Private Instruction in Music: Regularly enrolled students who wish to take private music lessons for academic credit will be charged \$780 for a two-credit, one hour per week lesson, or \$390 for a one-credit, thirty-minute per week lesson. Studio music fees are not refunded after drop/add.

MU-111A Woodwind Studio (Fall & Spring; Yearly; 1.00-2.00 Credits; F) Private studio lessons help improve musicians' sound quality, intellectual understanding, technique, expression and creativity. Enrollment for 1 credit provides a weekly 30 minute private lesson; two credits provide a weekly 60 minute private lesson. No previous experience necessary. Private lessons carry additional fees. Studio music fees are not refunded after drop/add. Instructor will contact you. If you haven't heard from them by the 4th day of classes, you may email them.

MU-111B Violin/Viola Studio (Fall & Spring; Yearly; 1.00-2.00 Credits; F) Private studio lessons help improve musicians' sound quality, intellectual understanding, technique, expression and creativity. Enrollment for one credit provides a weekly 30 minute private lesson; two credits provide a weekly 60 minute private lesson. Students typically supply their own instruments. Violins and violas may be available for rental. No previous experience necessary. Private lessons carry additional fees. Studio music fees are not refunded after drop/add. Instructor will contact you. If you haven't heard from them by the 4th day of classes, you may email them.

MU-111C Brass Studio (Fall & Spring; Yearly; 1.00-2.00 Credits; F) Private studio lessons help improve musicians' sound quality, intellectual understanding, technique, expression and creativity. Enrollment for one credit provides a weekly 30 minute private lesson; two credits provide a weekly 60 minute private lesson. Students usually provide their own instruments, although some instruments may be available for sign-out. No previous experience necessary. Private lessons carry additional fees. Studio music fees are not refunded after drop/add. Instructor will contact you. If you haven't heard from them by the 4th day of classes, you may email them.

MU-111D Percussion Studio (Fall & Spring; Yearly; 1.00-2.00 Credits; F) Private studio lessons help improve musicians' sound quality, intellectual understanding, technique, expression and creativity. Enrollment for one credit provides a weekly 30 minute private lesson; two credits provide a weekly 60 minute private lesson. No previous experience necessary. All instruments are supplied by the College, but purchase of music, sticks, or mallets may be required. Private lessons carry additional fees. Studio music

fees are not refunded after drop/add. Instructor will contact you. If you haven't heard from them by the 4th day of classes, you may email them.

MU-111E Piano Studio (Fall & Spring; Yearly; 1.00-2.00 Credits; F) Private studio lessons help improve musicians' sound quality, intellectual understanding, technique, expression and creativity. Enrollment for one credit provides a weekly 30 minute private lesson; two credits provide a weekly 60 minute private lesson. Pianos are available for practice in the music building. No previous experience necessary. Private lessons carry additional fees. Studio music fees are not refunded after drop/add. Instructor will contact you. If you haven't heard from them by the 4th day of classes, you may email them. You must complete all semesters in order. (ex: MU111E, MU112E, MU211E, MU212E, etc.)

MU-111F Voice Studio (Fall & Spring; Yearly; 1.00-3.00 Credits; F) Private studio lessons help improve musicians' sound quality, intellectual understanding, technique, expression and creativity. Enrollment for one credit provides a weekly 30 minute private lesson; two credits provide a weekly 60 minute private lesson. No previous experience necessary. Private lessons carry additional fees. Studio music fees are not refunded after drop/add. Instructor will contact you. If you haven't heard from them by the 4th day of classes, you may email them.

MU-111G Guitar Studio (Fall & Spring; Yearly; 1.00-2.00 Credits; F) Private studio lessons help improve musicians' sound quality, intellectual understanding, technique, expression and creativity. Enrollment for one credit provides a weekly 30 minute private lesson; two credits provide a weekly 60 minute private lesson. Students supply their own instruments. No previous experience necessary. Private lessons carry additional fees. Studio music fees are not refunded after drop/add. Instructor will contact you. If you haven't heard from them by the 4th day of classes, you may email them.

MU-111H Flute Studio (Fall & Spring; Yearly; 1.00-2.00 Credits; F) Private studio lessons help improve musicians' sound quality, intellectual understanding, technique, expression and creativity. Enrollment for one credit provides a weekly 30 minute private lesson; two credits provide a weekly 60 minute private lesson. Students supply their own instruments. No previous experience necessary. Private lessons carry additional fees. Studio music fees are not refunded after drop/add. Instructor will contact you. If you haven't heard from them by the 4th day of classes, you may email them.

MU-111I Cello Studio (Fall & Spring; Yearly; 1.00-2.00 Credits; F) Private studio lessons help improve musicians' sound quality, intellectual understanding, technique, expression and creativity. Enrollment for one credit provides a weekly 30 minute private lesson; two credits provide a weekly 60 minute private lesson. Students typically supply their own instruments although instruments may be available for sign-out on a limited basis. No previous experience necessary. Private lessons carry additional fees. Studio music fees are not refunded after drop/add. Instructor will contact you. If you haven't heard from them by the 4th day of classes, you may email them.

MU-111K Studio Jazz Improvisation Lessons (Fall & Spring; Yearly; 1.00-2.00 Credits; F) Private improvisation instruction, primarily in jazz styles. Individualized curriculum, based on needs and abilities of each student, will include scales, chords, and real-time usage of those elements in improvising. Also, basic instruction in

one or more of these areas may be added by instructor if deemed necessary and only as directly related to student's development as an improviser: biographies and styles of famed improvisers, ear training, transcribing, and jazz styles/history. Studio music fees are not refunded after drop/add. Enrollment for one credit provides a weekly 30 minute private lesson; two credits provide a weekly 60 minute private lesson. Students provide their own instruments. No previous experience necessary. Private lessons carry additional fees. Instructor will contact you. If you haven't heard from them by the 4th day of classes, you may email them.

MU-111L Bass Studio (Fall & Spring; All Years; 1.00-2.00 Credits; F) Private studio lessons help improve musicians' sound quality, intellectual understanding, technique, expression and creativity. Enrollment for 1 credit provides a weekly 30 minute private lesson; two credits provide a weekly 60 minute private lesson. No previous experience necessary. Students must supply their own instrument. Private lessons carry additional fees. Studio music fees are not refunded after drop/add. Instructor will contact you. If you haven't heard from them by the 4th day of classes, you may email them.

MU-111M Composition/Song Writing (Fall & Spring; Yearly; 1.00-2.00 Credits; F,CTDH) This course is one-on-one studio instruction in the craft of composition and/or songwriting. Instruction focuses on traditional classical/concert music, but also includes other genres as needed including, pop, folk, rock, and jazz. Topics include notation, orchestration, idiomatic writing for instruments and voices, musical form, and score study. Short term assignments are given throughout the semester, culminating in a more substantial work.

MU-113 Guitar Class I (Fall & Spring; Yearly; 1.00 Credit; F) The fundamentals of guitar playing are taught in small groups one hour per week. Beginning through intermediate classes emphasize songs, movable chords, blues and standardized forms in the plectrum and finger picking styles. Students must supply their own instruments.

MU-114 Guitar Class II (Fall & Spring; Yearly; 1.00 Credit; F) (see MU113).

MU-115 Practicum: JC Percussion (Fall & Spring; Yearly; 1.00 Credit; F) Students study and perform a wide variety of ensemble music on percussion instruments, in various percussion-only pieces as well as wind band, orchestral, and/or jazz ensemble settings. Music assignments are based on student interest and ability, and are individually assigned to further develop ensemble playing abilities and musicianship. Rehearsals and concert emphasize the communicative aspects of music, culturally correct practices and techniques in percussion, and the development of the tools that are necessary to produce a high quality ensemble experience. Individual practice outside of full rehearsals is expected. NOTE: Percussion ensemble students enroll in MU115 their first semester of membership, then MU116, then MU117, etc.

MU-127 Sight Singing (Either Semester; Yearly; 1.00 Credit) Builds skills necessary for successful sight singing and tonal memory/ear training.

MU-131 Voice Class I (Fall & Spring; Yearly; 2.00 Credits; F) For students with no previous formal training in voice. Two fifty minute class sessions per week plus individual work with instructor

as needed.

MU-132 Voice Class II (Fall & Spring; Yearly; 2.00 Credits; F) (see MU131).

MU-133 JC Concert Band (Fall & Spring; Yearly; 1.00 Credit; F) One of two wind bands at Juniata. This ensemble performs a variety of level III-IV concert band literature as well as occasional woodwinds-only and brasses-only pieces, to develop ensemble playing abilities, explore significant and newer quality wind literature, improve members' musicianship, and experience the communicative aspects of music.

MU-141 Orchestra (Fall & Spring; Yearly; 1.00 Credit; F) Orchestra performs a wide variety of music for both string ensembles and full orchestra chosen to develop musicianship and ensemble. Rehearsals and concerts emphasize the development of musical skills necessary to create a high quality performance experience for both players and audience. Requirements include attendance at a weekly sectional rehearsal and the full ensemble rehearsal in addition to individual preparation. Field trips to hear excellent performances by professional string artists may be offered. Note: Students enroll in MU141 their first semester, MU142 their second, etc.

MU-153 Guitar Class III (Fall & Spring; Yearly; 1.00 Credit; F) (see MU113).

MU-154 Guitar Class IV (Fall & Spring; Yearly; 1.00 Credit; F) (see MU113).

MU-163 Jazz Ensemble (Fall & Spring; Yearly; 1.00 Credit; F) Performs a wide variety of Jazz ensemble music chosen to develop ensemble playing abilities and musicianship. Rehearsal and concert emphasize the communicative aspects of music and the development of the tools that are necessary to produce a high quality ensemble experience. Practice outside of full rehearsals is required. NOTE: Jazz ensemble students enroll in MU163 their first semester of membership, then MU164, then MU165, etc. Winds must also be enrolled in MU 133-140 or MU 191-198.

MU-171 Choral Union (Fall & Spring; Yearly; 1.00 Credit; F) Performs larger choral works to develop vocal ability, sight reading, diction skills, and musicianship. One major on-campus performance per semester.

MU-181 Juniata Concert Choir (Fall & Spring; Yearly; 1.00 Credit; F) Performs a variety of choral music chosen to develop vocal ability, sight-reading, multi-lingual diction skills, and musicianship. Performances and projects include on-campus programs, spring tour(s), recording, and weekend tour. Members selected through audition.

MU-189 Instructional Lesson (Ensemble Members) (Fall & Spring; Yearly; 1.00 Credit) MU-189 enables students in one of our three major instrumental ensembles to also enroll in lessons with the appropriate studio instructor. 30-minute private lesson every other week or two students per lesson weekly. Corequisite: Enrollment in Wind Symphony, Percussion Ensemble, or Orchestra. Lessons are not a requirement for membership in an ensemble, but you must be in an ensemble to register for MU-189. If the ensemble course is dropped, this course must be dropped, too.

MU-191 J.C. Wind Symphony (Fall & Spring; Yearly; 1.00 Credit; F) Our wind symphony is the premier instrumental ensemble for winds at Juniata. The ensemble performs a variety of wind band literature chosen to develop ensemble-playing abilities and musicianship, as well as occasional chamber pieces for sections or heterogeneous groups. Rehearsals and concerts emphasize the communicative aspects of music and the development of the tools that are necessary to produce a high-quality ensemble experience. NOTE: Wind symphony members enroll in MU191 their first semester of membership, then MU192, MU193 etc.

MU-199 MU Special Topics (Variable; Variable; 1.00 Credit) Allows departments to offer topics not normally taught. Prerequisites, corequisites, and fees vary by title.

MU-210 Musical Improvisation (Variable; Variable; 1.00 Credit; F) This course will present the basics of musical improvisation technique. Basic jazz music theory (scales, chords) and brief historical coverage of famed improvisers (Ella, Bird, Trane, Miles, et al.) will also be included. Extensive in-class student demonstrations of improvisation skills will be expected. Practice/goal oriented jam session time outside of class is expected, 5 hours per week is recommended.

MU-241 A Cappella Ensembles (Variable; Yearly; 2.00 Credits; F) Students hone their musicianship through a variety of a cappella ensemble works specifically designed to build one-on-a-part skills. Multiple ensemble combination opportunities are created within the class. Emphasis is placed on individual preparation. Prerequisites: MU171 or MU181 or MU281.

MU-299 MU Special Topics (Variable; Variable; 1.00 Credit) Allows departments to offer topics not normally taught. Prerequisites, corequisites, and fees vary by title.

MU-495 Senior Recital I (Fall & Spring; Yearly; 2.00-4.00 Credits; F) Individual instrumental or vocal lessons for students preparing a Senior Recital. Senior status and permission of instructor and Music Department Chairman required. The Senior Recital shall be presented at the end of the second semester of study and shall consist of 45-60 minutes of memorized literature, demonstrating the highest level of technical and musical accomplishment. Senior Recital carries normal studio per credit fees.

MU-496 Senior Recital II (Fall & Spring; Yearly; 2.00-4.00 Credits; F) The continuation of MU495, Senior Recital I. (see MU495). Prerequisite: MU495.

Non-Departmental Courses

ND-102 Introduction to Library Research (Fall & Spring; Yearly; 1.00 Credit; H) This one hour, one semester course is designed to teach students the fundamentals of library research, from the basic organization of materials through the analytical process of determining useful and appropriate research materials. This course will be taught every semester by the library staff, and there is no pre-requisite.

ND-198 Solving the Covid-19 Crisis (Variable; Variable; 1.00 Credit) Learn how Juniata students and faculty are using the COVID-19 crisis to make a difference in the world, and explore ways that you can make a difference, too. This one-credit course describes how different disciplinary lenses help us understand and address the

challenges presented by the coronavirus pandemic. NOTE: Registration in this course is restricted to only incoming new students.

ND-199 ND Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows departments to offer courses not normally taught. Prerequisites and fees vary by course titles.

ND-201 Community Engagement (Fall & Spring; Yearly; 1.00 Credit; S) Students enrolled in this class will integrate service in the community with individual reflection and classroom discussion. Work completed in the community will help students gain an understanding of the agencies that operate in the greater Huntingdon area and the services they provide. Additionally, students' presence in the community facilitates development of strong partnerships between the college and the public. In the classroom, students will be challenged to consider their volunteer experiences with respect to relevant local and global issues. Students will gain exposure to different cultural and economic institutions, explore what it means to be an active citizen, develop a sense of civic and social responsibility, and learn how they might incorporate service into other facets of their lives. May be repeated to a total of 4 credits with the permission of the instructor. Graded S (satisfactory) or U (unsatisfactory).

ND-203A Urban Immersion (Spring; Yearly; 1.00 Credit) Students enrolled in this class will participate in a service-learning trip to explore urban issues through various service and educational experiences. Involvement in trip activities will help students develop a foundation of knowledge about the importance of civic and community engagement. Online lessons and orientation sessions preceding the trip will facilitate development of learning objectives and provide background information related to the region in which the group will serve. The service experience will be complemented by discussion and reflection before, during, and after the trip. Applications accepted in fall. Associated fees vary by trip. Note: This course requires 25 hours of out of class time per semester.

ND-203B Spring Break Alternative (Spring; Yearly; 1.00 Credit) Students enrolled in this class will participate in a service-learning trip to explore social, cultural, political and/or environmental issues through various service and educational experiences. Involvement in trip activities will help students develop a foundation of knowledge about the importance of civic and community engagement. Online lessons and orientation sessions preceding the trip will facilitate development of learning objectives and provide background information related to the region in which the group will serve. The service experience will be complemented by discussion and reflection before, during, and after the trip. Prerequisite: Course fee plus air fare, if necessary, will be charged. Applications accepted in fall and spring. Note: This course requires 25 hours of out of class time per semester.

ND-203C Cultural Learning Tour (Spring; Yearly; 1.00 Credit) Students enrolled in this course will participate in a service-learning trip to explore social, cultural, political and/or environmental issues through various service and educational experiences. Involvement in trip activities will help students develop a foundation of knowledge about the importance of civic and community engagement. Biweekly meetings in spring semester will facilitate development of learning objectives and provide background information related to the region in which the group will serve. The service experience will be complemented by discussion and reflection before, during, and after the trip. Applications are accepted

in fall. Associated fees vary by trip. Note: This course requires 25 hours of out of class time per semester.

ND-204 Viticulture in CE I (Spring; Yearly; 1.00 Credit; I,N) This is a 1-credit course which is the corequisite for ND-205 Viticulture and Enology in Central Europe II. The full program, Viticulture and Enology in Central Europe I & II, runs in spring and summer terms of the same year. This spring course prepares students for the trip to Central Europe the following summer. Students learn about the history and political situation of countries to be visited as well as theoretical knowledge about growing grape vines, making wine, and the chemical processes behind wine making. Corequisite: ND-205.

ND-205 Viticulture in CE II (Spring; Yearly; 2.00 Credits; I,N) This is a 2-credit course which follows ND-204 Viticulture and Enology in Central Europe I. The full program, Viticulture and Enology in Central Europe I & II, runs in spring and summer terms of the same year. ND-205 is a short-term study abroad which takes students through less known but very attractive winegrowing regions in Central Europe where wine grapes have been grown and wine has been made for almost two thousand years. Visits to winegrowers and winemakers will be supplemented by a series of lectures on chemistry of wine. The cultural part of the course will take students to historic towns and castles in Slovakia and to enjoy the natural beauty of the country, including hiking Slovak Paradise or exploring gorgeous caves. Eating Slovak and Moravian ethnic food will be part of a valuable lesson in learning about a different culture. Corequisite: ND-204.

ND-242 Myanmar Today I (1Irregular/On Demand; 1.00 Credit) Myanmar Today is an introduction to various aspects of modern Myanmar, including its history, culture, and current political and social situation. Students complete ND242, Myanmar Today I, on campus in the fall semester. ND243, Myanmar Today II, is the trip to Myanmar and is registered in the spring semester. Travel to Myanmar is two weeks in January, preceding the start of the spring semester. There is a course fee for Myanmar Today which is set when the course is offered and includes all expenses for travel to Myanmar. The course fee is split between the fall and spring registrations. As of May 2018 CA credit for Myanmar Today is pending and is earned only upon completion of both ND242 and ND243.

ND-243 Myanmar Today II (1Irregular/On Demand; 1.00 Credit) Myanmar Today is an introduction to various aspects of modern Myanmar, including its history, culture, and current political and social situation. Students complete ND242, Myanmar Today I, on campus in the fall semester. ND243, Myanmar Today II, is the trip to Myanmar and is registered in the spring semester. Travel to Myanmar is two weeks in January, preceding the start of the spring semester. There is a course fee for Myanmar Today which is set when the course is offered and includes all expenses for travel to Myanmar. The course fee is split between the fall and spring registrations. As of May 2018 CA credit for Myanmar Today is pending and is earned only upon completion of both ND242 and ND243.

ND-260 Remote Field Course I (Summer; Yearly; 2.00 Credits) This course is a 16 day module format field experience in south western Colorado and southeastern Utah. Students will complete a selection of modules in one or more of the following areas: anthropology, ecology, environmental science and studies or geolo-

gy. Four faculty, one from each of these disciplines, will supervise the different modules. All students will also complete integrated, interdisciplinary modules. Summer school offering only. Prerequisites: Differs for each module and permission of instructor.

ND-261 Remote Field Course II (Summer; Yearly; 2.00 Credits) This course is a 16-day module-format field experience in Southwestern Colorado and southeastern Utah. Students will complete a selection of modules in one or more of the following areas: Anthropology, ecology, environmental science and studies or geology. Four faculty, one from each of these disciplines, will supervise the different modules. All students will also complete integrated, interdisciplinary modules that are different than the modules students took in ND260. Summer school offering only. Prerequisites: Differs for each module and ND260 and permission of instructor.

ND-262A Astronomy and Meteors Mini Labs for Remote Field Course (Summer; Yearly; 0.00 Credits) Astronomy and astrogeology, including the study of meteorites, continue to play a fundamental role in both our cultural and scientific evolution. Students will visit the famous Lowell Observatory in Flagstaff, AZ, and two craters in north east Arizona. Corequisites: ND260 or ND261 or IC207. Note: A special course fee is assessed.

ND-262B Lake Powell Lab Mini Labs for Remote Field Course (Summer; Yearly; 0.00 Credits) We will spend three days boating on Lake Powell while discussing and studying the results of the Glen Canyon Dam, including exploring the controversy from a view of water supply, economic and environmental impacts. Corequisites: ND260 or ND261 or IC207. Note: A special course fee is assessed.

ND-262C The Atomic Age (Summer; Yearly; 0.00 Credits) On July 16, 1945 the world changed with the explosion of the first atomic bomb at the Trinity site, near Socorro, New Mexico. This module will visit a number of sites in New Mexico and Arizona which have played a seminal role in the "atomic age". Corequisites: ND260 or ND261 or IC207.

ND-262D Moab's Natural Wonders Mini Labs for Remote Field Course (Summer; Yearly; 0.00 Credits) Moab offers a wealth of natural beauty, including Arches National Park and the Colorado River. Students in this module will learn about fluid flow during a one-day rafting trip on the Colorado. We'll visit Arches National Park and examine some of its well-known features, such as the physical blueprint of the arches and Balanced Rock, from a physics perspective. Corequisites: ND260 or ND261 or IC207. Note: A special course fee is assessed.

ND-262E Southwestern Geology-RFC (Summer; Yearly; 0.00 Credits) During this module we cover the following topics: observe various types of volcanic activity in the area and think about origins, describe and sketch various rock structures in the field, collect interesting igneous rocks, and read and understand topographical maps and how they can express regional geology. Corequisites: ND260 or ND261 or IC207.

ND-262F Scenic Lands (Summer; Yearly; 0.00 Credits) Snow-covered rugged mountain peaks, reaching nearly 13,000 feet in elevation. A break-neck deep gorge with more tight bends and twist than a Quentin Tarantino movie plot. Stone arches immense yet delicate. A labyrinth of colorful mesas and needle-like buttes. The southwest corner of Utah contains a diversity of spectacular scen-

ery that has to be seen to appreciate. During this module we will visit four of the most scenic areas in the southwest and explore the natural forces that formed and sculpted them. Additionally, we will investigate how the governmental agencies that oversee and regulate each area protect and manage these natural wonders. Corequisites: ND260 or ND261 or IC207.

ND-262G Biodiversity of Southwest Ecosystems (Summer; Yearly; 0.00 Credits) This module reveals the biotic diversity of unique desert ecosystems of southeastern Arizona - the Sonoran Desert and Chihuahuan Desert. This module examines the plant and animal associations and adaptations exhibited in this arid environment. This region contains arid desert flats, rocky canyons, creeks, alpine meadows and talus slopes. We will investigate the plant and animal diversity of the Chiricahua and Dragon Mountains through hands-on exploration. We will traverse a range of elevations; from desert flats (4,000 ft.) to mountain peaks (nearly 9,000 ft.). Corequisite: ND-260 or ND-261 or IC-207.

ND-262H Moab Rock Art (Summer; Yearly; 0.00 Credits) During this module, Students learn to identify and interpret styles of rock art at a variety of spectacular sites. These sites range in period from the Archaic (5500 BC to 1 AD), the Anasazi (1 AD to 1275 AD), Fremont (450 AD to 1250 AD), the Formative Period (1 AD to 1275 AD), and Ute (1200 AD to 1880 AD). Corequisites: ND260 or ND261 or IC207.

ND-262I Species Interaction (Summer; Yearly; 0.00 Credits) This module takes place in and around the Canyon lands and Arches National Parks outside of Moab, UT. We will collect data that differentiates a sympatric assemblage of lizards in the region. Collared (*Crotaphytus collaris*), side-blotch (*UTA stansburiana*), tree (*Urosaurus ornatus*), whiptail (*Cnemidophorus tessellatus*), and plateau lizards (*Sceloporus undulatus*) will be characterized based on several ecological and physiological parameters. We will also explore the biodiversity and conservation/land-use issues of this region. Ancillary ventures will include a trek to the base of Mount Peale (12,721 ft.) and the Matheson Wetland Preserve. Corequisites: ND260 or ND261 or IC207.

ND-262J Dinosaurs (Summer; Yearly; 0.00 Credits) The Southwest contains some of the best dinosaur fossil sites in the world, and we take advantage of this, by visiting the Cleveland-Lloyd Quarry, sites in the Moab, UT area that contain extraordinary dinosaur footprints, Mill Canyon dinosaur quarry and the dinosaur display at College of Eastern Utah Prehistoric Museum. Corequisites: ND260 or ND261 or IC207.

ND-262K Interpret Past/Present (Summer; Yearly; 0.00 Credits) We will explore the prehistoric and present indigenous cultures, agriculture, religion, social and political organization. We will visit ruins ranging from Mesa Verde National Monument (maintained by the National Park Service) to the Ute Mountain Tribal Park on the Ute Mountain reservation. We will also participate in a one-half day work project for the Ute Mountain Tribe. We will contrast the ruins seen at Mesa Verde and the Ute Mountain Tribal Park with reconstructed ruins we will visit in New Mexico. We will also observe and discuss contemporary American Indian economic problems and strategies. Corequisites: ND260 or ND261 or IC207.

ND-262L Anasazi Culture/Eviron. (Summer; Yearly; 0.00 Credits) edge of the Cedars, Hovenweep, Butler Wash and the Horsecollar Ruins: A closer look at Anasazi Culture and Environments. Coreq-

uisites: ND260 or ND261 or IC207.

ND-262M Ecotonal Transitions (Summer; Yearly; 0.00 Credits) This module compares the two sides of the Grand Canyon-the South Rim (an arid ecosystem at 6,300 ft. elevation) and the North Rim (a ponderosa pine dominated habitat at 8,200 ft. elevation). We will examine the plant and animal associations that differentiate both sides of the Canyon. This module involves hiking into the Grand Canyon-while not overly strenuous, does require a certain degree of physical fitness. The trip from the South Rim to the North Rim of the Canyon takes us through arid flatlands of the Colorado Plateau.

ND-262N Southwest Geology (Summer; Yearly; 0.00 Credits) Module for remote field course. Corequisite: ND260 or ND261 or IC207.

ND-262O Alien Abduction (Summer; Yearly; 0.00 Credits) When ask, many people express a belief in the notion that alien life forms have visited the earth. Further, some people believe not only that aliens have visited earth, but that they have been abducted by aliens for various purposes. We will examine the psychological foundation for these beliefs while visiting Roswell, NM, site of one of the most famous alien sightings. Corequisites: ND260 or ND261 or IC207.

ND-262P Erosion and Land Use (Summer; Yearly; 0.00 Credits) During this module we cover the following topics: observe various types of glacial deposits and landforms, appreciate the erosional importance of water in arid climates, examine relationships between geology, climate and land use, and identify unstable landforms. Corequisite: ND260 or ND261 or IC207.

ND-262Q Altitude and Cognition (Summer; Yearly; 0.00 Credits) There have been a number of case histories of climbers who have experienced rapid changes in altitude that report confusion, amnesia and other cognitive difficulties. We will focus specifically on alterations of working memory performance due to altitude. We will climb into the San Juan National Forest and reach an altitude of 13,000 feet above sea level. Once at the top, we will measure our performance on several classic working memory tasks. Corequisites: ND260 or ND261 or IC207.

ND-262R Sex Differences in Navigation (Summer; Yearly; 0.00 Credits) There are a number of old wives tales about how both men and women navigate in their environment, including men never ask for directions and women get lost easily. We will investigate these old wives tales in more detail, by systematically examining how both sexes perform on real world navigation tasks. We will visit the Fiery Furnace in Arches National Park. This area of "infant arches" is, in fact, an excellent example of a real world maze. The following day, we will wander around the downtown area of Moab, asking for directions to assess the differences in how men and women give directions. Corequisites: ND260 or ND261 or IC207.

ND-262S Living in Sacred Spaces (Summer; Yearly; 0.00 Credits) During this module, students will learn how Historic and contemporary Sinagua, Hopi, Tewa, Navajo, and New Age tourist societies adapt to and live in a harsh desert climate. They will learn through exploring subsistence strategies, agriculture, and architecture at several different sites. No additional fee required. Corequisite: ND260 or ND261 or IC207.

ND-262T Agriculture Over 3000 Years (Summer; Variable; 0.00 Credits) During this 4 day module, we'll be exploring museums as educational resources and discover the impact of agricultural change over 3000 years. Over the first two days, come explore the New Mexico Farm and Ranch Museum and the Amerind Foundation Museum and learn about setting up exhibits, and explore the agricultural artifacts dating back 3000 years. Are there lessons to learn from the past? On the third day we'll head to the Sonora Desert Museum and wrap up on the fourth day with the Casa Grande Ruins before arriving at the Grand Canyon. Evenings will be spent hiking and camping with the biology module. Corequisite: ND260 or ND261 or IC207.

ND-262U Capturing the Canyons and Traveling Highway 12 (Summer; Variable; 0.00 Credits) During this three day module (after the Grand Canyon), we will be traveling to Little Antelope Slot Canyon, visit the Glen Canyon Dam and camp at Bryce Canyon. The second day we'll hike Bryce Canyon, enjoying both the sunrise and sunset in this spectacular canyon, staying there the second night too. On the third day, we'll travel Highway 12 (on our way to Moab), named one of America's Highways for its scenic beauty. It is lined with education placards and lots of hidden gems - we'll stop along the way at various spots -(but, as a group, we'll plan the stops). Ultimately, each student will create a virtual "field trip," using PhotoStory or i-Photo. Narration of the sites should be included (you'll need your computer, a camera, and the USB cord or firewire to download pics and or video for this module).

ND-262V Visitor Centers and Movies As Educational "resources" - Have "westerns" Influenced Our View of the West? (Summer; Variable; 0.00 Credits) This module will include two day trips. One to Dead Horse State Park, called the Grand Canyon of Utah and the site of many movies. It also includes a small, but beautiful visitor's center with interactive displays for all ages. We'll be hiking some of the trails and checking out why this location is a popular site for movies. The second trip will be to the Moab Museum of Film & Western Heritage and will focus on the use of movies and their impact as educational resources and how they shaped our image of the west and Native Americans.

ND-262X Earth, Air, Fire, Water (Summer; Yearly; 0.00 Credits) The Colorado Plateau is a beautiful but harsh land, leaving bare to view the record of a a tumultuous geologic history and a landscape that challenges the ingenuity of those who would dwell there. This module visits pueblo, cliff, and contemporary sites where dwellers have dealt in diverse ways with extremes of wind and weather, lack of water for livestock and crops, a landscape with poor and limiting soils, and sometimes hostile neighbors. This module explores the strategies that residents have used in trying to make the most of what the Earth has to offer. Corequisite: ND-260 or ND-261 or IC207.

ND-271 3D Design, Scanning & Printing (Fall & Spring; Yearly; 4.00 Credits; CTDH,WK-CE) The course introduces non-specialist students to the current techniques of 3D design, scanning, and printing. It harnesses technology to creative art opportunities and artistic appreciation to technological processes. No pre-existing skill sets are assumed so the course is suitable to beginners and novices. Pre-requisite: FYC-101

ND-290 Rural Health Care Issues (Spring; Yearly; 1.00 Credit) Health professionals from both conventional and alternative medicine in Huntington will introduce students to their practices, the

education involved, and the pros and cons of practicing in a small town. Students will be exposed to the integrative model of health care, will have an opportunity to network with practitioners, and will be encouraged to consider a future practice in Huntingdon.

ND-292 Fulbright Special Topics Course (Variable; Variable; 1.00-3.00 Credits; I,SW-GE) This course will focus on a people and culture outside of the U.S. or on a global challenge. The course will often relate to Mexico or to U.S.-Mexico relations. The specific topic of this course will be determined based on the interests of the Mexico Studies Chair and the needs of the College.

ND-295 Rural Health Rotations (Spring; Yearly; 2.00 Credits) Students with a sincere interest in rural health care shadow a range of practitioners, participate in a field trip to an integrative health center, and do class activities and assignments that enhance their understanding of the health care system. This course is graded. Open to a maximum of 12 students. Co-requisite or pre-requisite: ND 290. Pre-requisite: permission of the instructor.

ND-298 Transitions (Spring; Yearly; 1.00 Credit) Faculty, staff, alumni, and guests will provide expertise and advice designed to help students understand and prepare for successful transitions. The process of transition (loss of what is familiar and known) will be discussed utilizing models of behavior within social systems and personal experiences. Case studies will examine: changing career goals; adjusting to cultural differences; the transition from life as an undergraduate to life as a graduate student; work life un-readiness; lifestyle adjustments such as financial independence, rural to urban, and changing relationships.

ND-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer courses not normally taught. Prerequisites vary by title.

ND-301 Reflecting on Study Abroad (Variable; Yearly; 1.00 Credit; SW-GE) Juniata's mission statement, principles of a liberal arts lifestyle, and the institutional learning outcomes stress the importance of engagement with the world. This course is intended to help students who have returned from study abroad to reflect and build upon intercultural learning experiences and to consider ways to apply their knowledge, skills, and perspectives through campus and community engagement and in preparation for professional pursuits and life after college. Preference for enrollment is given to students who participate in a faculty-led short-term course abroad who intend to complete the Global Engagement requirement.

ND-306 Commonwealth Student Assistance Program- Undergraduate Program (Either Semester; Yearly; 2.00 Credits) The Commonwealth Student Assistance Program (SAP) course will provide an in-depth theoretical and practical course of study, designed to identify risk factors that inhibit and become barriers to students in the middle/high school settings. Juniata students will be introduced to different behaviors associated with mental health, drug and alcohol and family issues that they will encounter while working with adolescents in the education system. POE's in the Social Sciences, Education and Health fields who have an interest with working with adolescents are encouraged to take this course. Must have Junior or Senior status.

ND-308 Sci. Outreach Leadership (Spring; Yearly; 1.00-3.00 Credits) Offers the opportunity for active participation in the planning, designing, and implementation of the Science Olympiad State

Competition held at Juniata each year. Register with permission of instructor.

ND-311 Digital Ethics (Variable; Yearly; 4.00 Credits; SW-ER,CT-DH)

ND-399 Special Topics (Variable; Variable; 2.00-9.00 Credits) Allows the departments to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

ND-490 ND Intern/Needs Paperwork (Spring; Yearly; 2.00-9.00 Credits) See the chapter, "Special Programs" under "Internships" in the catalog. Corequisite: ND495. Prerequisite: Permission and Jr. or Sr. Standing.

ND-495 Internship Seminar (Variable; Variable; 2.00-6.00 Credits) Required of all students doing an internship. Emphasis is on readings and discussions of materials relevant to the internship experience. Corequisite: ND490.

ND-499 ND Special Topics (Fall & Spring; Yearly; 1.00-4.00 Credits) Allows department to offer topics not normally taught.

ND-TUT ND Teaching Assistant (Variable; Variable; 1.00-3.00 Credits) See catalog.

ND.SS-100 Career Planning (Variable; Variable; 1.00 Credit; S) Examines theories of occupational choice and career development and provides the learner with the opportunity to become more aware of their interests, values, and capacities as they relate to the career decision-making process.

ND.SS-205 21st Century Career Search (Fall & Spring; Yearly; 1.00 Credit) Students will be provided an overview of job, career and graduate/professional school search techniques. They will learn to write professional and effective resumes portfolios and other job search correspondence while also enhancing interpersonal skills to be used at job fairs, interviews and other professional settings. Prerequisites: Junior or Senior standing.

ND.SS-TUT ND.SS Teaching Assistant (Variable; Variable; 1.00-3.00 Credits) See catalog.

PEACE AND CONFLICT STUDIES

PACS-105 Introduction to Conflict Resolution (Variable; Yearly; 3.00 Credits; S,WK-SI) A survey of the field of conflict, this course explores the causes and consequences of social conflict. Theory and case studies are used to understand interpersonal disputes, the intricacies of groups in conflict and international issues and crisis. Emphasis is given to understanding the basic theoretical concepts of the field and developing basic conflict resolving skills. Pre- or Co-Req: FYC-101 or EN-110 or EN-109.

PACS-108 Mediation (Either Semester; Yearly; 3.00 Credits; S,SW-ER) This course is an introduction to the theory and skills that constitute the practice of interest-based mediation. Students will learn the fundamentals of mediation, become familiar with their own conflict resolution styles, and consider some cultural and ethical issues relevant to the practice of mediation. Weekly readings will provide a theoretical framework, but this course's emphasis will be on skill development. Through small-group role-play and

simulation, students will work toward proficiency in the mediation process and provide constructive peer evaluations in a collaborative, spirited atmosphere. Pre- or Co-Req: FYC-101 or EN-110 or EN-109.

PACS-110 Introduction to Peace & Conflict Studies (Either Semester; Yearly; 3.00 Credits; I,SW-GE) This course explores war and deep-rooted conflict as human problems and peace as a human potential. Students collaborate in small groups to explore a range of different approaches to peace around the world. Prerequisite or corequisite: FYC or CWS

PACS-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer topics not normally taught. Prerequisites vary by title.

PACS-205 Conflict Intervention (Either Semester; Yearly; 3.00 Credits; S) The course explores the roles third parties play in managing and resolving conflicts. Students become familiar with both the central components of intervention design and the nature and structure of third party roles ranging from managers as mediators to conflict intervention in community disputes, or third party intervention in international disputes. The focusing questions of the course center on issues of how and when third parties can effectively and ethically intervene in conflicts. Research, case studies, and simulations are used to explore the answers of these questions and to increase students understanding of how third parties affect the course of conflict. Prerequisites: PACS105 or PACS108.

PACS-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) An examination of an area of study not regularly included in departmental offerings. Prerequisites vary with topics.

PACS-305 Gender and Conflict (Variable; Yearly; 3.00 Credits; S,I,CW) Examines how an understanding of gender issues is critical to understanding, assessing, and effectively addressing many conflicts. The course takes an interdisciplinary look at conflicts ranging from the differing experiences of women and men in conflict to interconnections between masculinity, femininity, security and warfare. An analysis of the ways in which gender issues cause and escalate conflicts is paired with discussions of how to address, challenge, wage and/or resolve gendered conflicts. Prerequisite: Sophomore, Junior, or Senior standing.

PACS-308 Nonviolence and Social Justice (Either Semester; Variable; 3.00 Credits; S,H,CW) A study of the theory and practice of non-violence, this course explores both the theoretical development of nonviolence and the use of nonviolence as a means for waging and resolving conflict. The course explores nonviolence theory as it applies to issues of social change, alternative defense, and personal transformation, using writings from political, sociological, feminist, religious and philosophical perspectives. Prerequisite: Sophomore standing recommended. (Formerly titled Nonviolence: Theory and Practice)

PACS-310 Digital Peacebuilding (Variable; Yearly; 3.00 Credits) This course will examine how tech entrepreneurs, programmers, peacebuilders, NGOs, and civil society groups leverage smartphones, Information Communication Technologies (ICTs), crowd-mapping platforms, SMS-based mass texting tools, and Geographic Information Systems (GIS) for coordinating natural disaster and humanitarian crisis responses, countering election violence, and raising public awareness against corruption and

gender-based violence across the world.

PACS-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

PACS-405 Conflict Transformation (Variable; Variable; 3.00 Credits; S,I,CW) This is the Capstone course for students with PACS in their POE. The course explores the possibilities for achieving justice, reconciliation, and sustainable peace in societies where protracted ethnic and political conflicts have had a devastating impact. The course examines the root causes of such conflict with a particular focus on how the practices of peace building and conflict transformation seek to mobilize people and resources to transform unjust structures and relationships. Prerequisites: PACS-105 or PACS-110 or PACS-205. Also must have senior standing or permission of the instructor.

PACS-455 PACS Honors Thesis I (Fall; Yearly; 3.00-6.00 Credits; H) Designed to serve as a course for students who emphasize PACS in their POE. The student will produce a major research paper that examines in depth a topic, theme, issue, or problem that has served as an area of special interest for the student throughout the previous two years of study. Prerequisite: Senior standing, PACS105 and PACS110 and a minimum of 4 200+ level PACS courses.

PACS-455B PACS Honors Thesis II (Spring; Yearly; 3.00-6.00 Credits; S) Designed to serve as a capstone for students who emphasize PACS in their POE. The student will be expected to produce a major research paper that examines in depth a topic, theme, issue, or problem that has served as an area of special interest for the student throughout the previous two years of study. Prerequisite is Senior standing. PACS105 and PACS110 and a minimum of 4 200+ level PACS courses.

PACS-490 Peace & Conflict Studies Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; I) An opportunity which requires students to relate theory and practice to a working environment and to reflect upon that experience. Corequisite: PACS 495. Prerequisite: Permission and Jr. or Sr. Standing.

PACS-495 PACS Intern.Res.Sem. (Fall & Spring; Yearly; 2.00-6.00 Credits; I) Requires students to reflect on the internship experience and/or pursue research related to the placement. Prerequisite: PACS110 and permission. Corequisite: PACS490.

PACS-TUT PACS Teaching Assistant (Variable; Variable; 1.00-4.00 Credits; S) See catalog

PHILOSOPHY

PL-101 Introduction to Philosophy (Variable; Yearly; 4.00 Credits; H,WK-HT) This course provides students with the background and conceptual tools that are required for more advanced study in the subject. At the discretion of the instructor, the course will either examine fundamental philosophical problems or provide a survey of important thinkers. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

PL-103 Life, Death, and Meaning (Fall & Spring; All Years; 3.00

Credits; H,WK-HT) The course will explore the meaning of life and death. Our primary concern will be with death, one's own inevitable personal death as it figures in human life and in contributing, or perhaps even detracting from, the meaningfulness of such a life. It will give you a deeper philosophical understanding of the meaning of death, and consequently the meaning of life, which will ultimately bring you into true being and authentic existence.

PL-105 Introduction to Logic (Variable; Yearly; 4.00 Credits; H,WK-FR) An analysis of practical reasoning skills, including a systematic approach to informal arguments and the meaning of everyday claims. Aristotelian logic, Venn Diagrams, propositional logic and symbolic logic are included.

PL-106 Introduction to Ethics (Either Semester; Yearly; 4.00 Credits; H,SW-ER) Examines the historically valid ethical approaches to problems, i.e., pragmatic, relativistic and absolute and the application of such methods to contemporary ethical dilemmas, e.g., abortion, terrorism, euthanasia, and capital punishment.

PL-115 Human Nature (Either Semester; Yearly; 3.00 Credits; H,WK-HT) An introduction to philosophy through an examination of seven theories of human nature: Plato, Marx, Freud, Sartre, Hobbes, Skinner, and Christianity.

PL-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the departments to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

PL-205 Ancient Philosophy (Variable; Yearly; 4.00 Credits; H,CW,WK-HT) This course is a historical survey of ancient Greek philosophy which will cover representative figures (including the major pre-Socratics, Plato, Aristotle and important authors/movements from the Hellenistic period, such as Epicurus, Stoicism and Skepticism). Prerequisite or corequisite: FYC-101 or EN-110 or EN-109.

PL-208 Symbolic Logic (Variable; Yearly; 4.00 Credits; N,H,WK-FR) An introduction to the basics of first-order logic: the concept of artificial language, techniques for symbolizing ordinary languages and arguments, formal inference systems (either truth-free method or natural deduction), and other advanced topics in first-order logic. It has no prerequisites beyond high school algebra.

PL-221 American Political Thought (Fall; Variable; 4.00 Credits; S,H,CW) (see PS221)

PL-222 Western Political Thought (Spring; Variable; 4.00 Credits; H,S) See PS222.

PL-230 Business Ethics (Variable; Yearly; 3.00 Credits; H,SW-ER) Asks the student to examine his/her personal values relative to those professional values of the business world. In particular, students will examine the claims of society, government, labor, management as they impact upon the individual who contemplates a career in the business world. Issues such as safety in the workplace, the right to privacy, and the obligations of the corporation to its employees, its customers, and to society itself will be covered. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

PL-235 Ethics of Health Care (Variable; Yearly; 4.00 Credits; H,SW-ER) This course is a seminar-style course in 'professional

ethics'. It will explore the various codes, value assumptions, and dilemmas faced by those who practice the health care professions. Specific topics (or dilemmas) will be determined by each class, based upon the specific POEs of the enrolled students. Pre-req or co-req: FYC-101 or EN-110 or EN-109

PL-241 Philosophy of Love (Either Semester; Variable; 3.00 Credits; H) A philosophical examination and reconstruction of the concept of erotic/romantic love in Western culture, with particular attention to its historical development and critical analysis by modern and contemporary philosophers and thinkers.

PL-245 Chinese Philosophy (Spring; All Years; 4.00 Credits; CA,H,I,SW-GE) The course will focus on the mainstream of the development of Chinese philosophy in the past two thousand years, namely, classical Confucianism and Taoism. prerequisites: Sophomore, Junior, or Senior standing.

PL-250 Science and Human Values (Variable; Yearly; 4.00 Credits; H,WK-HT,CTGES) This course examines the reciprocal influence between science and social values, from the perspective of the humanities. It asks, "What good is science?" Through selected readings and discussion, students consider how everyday life is shaped by scientific innovation and technology, just as society provides a framework of cultural values for science. Prereq or coreq: FYC-101 or EN-110 or EN-109

PL-255 Philosophy of Religion (Spring; Yearly; 3.00 Credits; H) A critical investigation of some of the main concepts of religion and theology. The course focuses on problems in the definition of religion, the idea of God, the nature of religious experience, the relation of faith and reason and the meaning of religious language.

PL-260 Philosophy of Science (Variable; Variable; 4.00 Credits; H,WK-HT,CTGES) Lays out some central philosophical problems raised by natural sciences. The possible topics to be discussed: Is science rational and objective? Does science really make progress? If so, in what sense? How to distinguish science from pseudoscience. Is science superior knowledge to other types? What is a good scientific explanation? Could we ever know about unobservable physical entities and events? Is it ever legitimate to regard a scientific theory as true? Prereq or coreq: FYC-101 or EN-110 or EN-109

PL-265 Environmental Ethics (Variable; Yearly; 4.00 Credits; H,SW-ER) As the life-support system for everyone, the environment is unquestionably of high value. Yet decisions about its care and its uses evoke controversy. This course explores contrasting viewpoints and practices that impact the earth and its plant and animal life. Through readings, projects, and critical discussion of cases, students apply ethical theories to selected contemporary issues. Prereq or coreq: FYC-101 or EN-110 or EN-109

PL-270 Ethical Theory (Variable; Yearly; 4.00 Credits; H,SW-ER) This course will provide students with an introduction to important debates in contemporary ethical theory (including debates about the epistemic status of moral claims and moral relativism). It will also introduce students to important normative frameworks within contemporary ethics (such as virtue ethics, utilitarianism, deontology, Confucian ethics, feminist ethics, etc.). Prerequisite: FYC-101 or EN-110 or EN-109

PL-275 Modern Philosophy (Variable; Yearly; 4.00 Credits; H,-

CA,CW,WK-HT) Selections from the founders of the twin pillars of modernity, i.e., Modern Philosophy (F. Bacon, Descartes, Leibniz, Spinoza, Locke, Berkeley, Hume, and Kant) and Modern Science (Copernicus, Spinoza, Galileo, Pascal, Newton, and Boyle) are studied with an emphasis on the philosophical origins of modern psychology and the epistemic foundations of contemporary scientific methodology. Prereq or coreq: FYC-101 or EN-110 or EN-109

PL-299 Special Topics (Either Semester; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

PL-304 Existentialism (Fall; Odd Years; 4.00 Credits; H,CW) Philosophers such as Kierkegaard, Nietzsche, Heidegger and Sartre are studied as an introduction to existentialist thought. Theistic and atheistic types are considered, as is significance of existentialism as a contemporary philosophy. Prerequisites: Any Philosophy course or Permission of instructor.

PL-308 Hegel to Nietzsche (Either Semester; Variable; 4.00 Credits; H) This course will provide students with an overview of nineteenth-century philosophy, beginning with the tradition of German Idealism and proceeding through thinkers such as Kierkegaard, Marx, Schopenhauer and Nietzsche. Prerequisite: Take 1 course from the PL department.

PL-310 Contemporary Political Philosophy (Either Semester; Variable; 4.00 Credits; S,H,CW) This course will focus on important political orientations and figures in the twentieth/early twenty-first century. Instructors may also focus on specific topics which have driven recent debates in contemporary political philosophy, including distributive justice, the normative foundations of liberalism/democracy or the tension between state sovereignty and international law (among others). Prerequisites: Take 1 course from the PL department or permission of the instructor.

PL-318 Knowledge, Truth and Skepticism (Either Semester; Variable; 4.00 Credits; H) The course is a study of the nature of human knowledge and justification of beliefs with special attention to three conceptually related topics: the nature and value of knowledge and the nature and structure of epistemic justification, the nature of truth, and the challenges from skepticism and influential responses to it. Prerequisites: Take any 1 Philosophy course, or by instructor consent.

PL-340 Philosophy of Art (Variable; Variable; 4.00 Credits; F,H) A study of the main theories about art in the western tradition, with particular attention to classical views as well as modernist conceptions and post-modern critical reactions. Prerequisite: AR-110 or permission of instructor.

PL-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

PL-450 Senior Thesis (Variable; Variable; 3.00 Credits; H) Students will engage in independent research and write a substantial final paper which evidences sustained engagement with the secondary literature on a topic selected in consultation with faculty members. This course is designed as a capstone experience. Prerequisite: Senior standing.

PL-490 Internship/Need Paperwork (Variable; Variable; 2.00-9.00 Credits) See catalog.

PL-495 Internship Seminar (Variable; Variable; 2.00-6.00 Credits) See catalog

Philosophy, Politics, and Economics

PPE-200 Sophomore Seminar (Either Semester; Yearly; 1.00 Credit; H,S) An introduction to the PPE program emphasizing the complimentary character of the three component fields. Students will read and discuss one or more works that invite consideration from the perspectives of each of the three disciplines. Faculty members from each department will contribute to the course. Prerequisites: Take 2 courses from PL115 or PL106 or PS101 or EB105.

PPE-450 Senior Seminar (Spring; Yearly; 3.00 Credits; H,S) Designed as a capstone experience for seniors with a Program of Emphasis in Philosophy, Politics, and Economics. In consultation with the instructor, students will select research areas that reflect their interests as well as skills and knowledge acquired in their undergraduate careers in the course of their research, students will practice, and further refine, their literature research, critical thinking, and writing skills Prerequisites: Senior standing with a POE in Philosophy, Politics and Economics.

PHYSICS

PC-120 Astronomy (Fall; Yearly; 3.00 Credits; N) An exploration of how mankind's understanding of the universe has evolved and is still developing. Early astronomy, planets sun, stellar evolution, and galaxies are covered with emphasis on mankind's confrontation with the unknown. The present day fascination with pulsars, quasars, extra-solar system planets, and black holes are discussed.

PC-189 Physics Seminar I (Fall; Yearly; 1.00 Credit) Seminar series, required of all freshmen Physics/Physics-Engineering POEs, consisting of research seminars given by invited speakers and members of the department, both faculty and students. Discussions regarding specific career opportunities and preparation for graduate studies will also be an integral part of the seminar series.

PC-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Entry level treatment of a variety of academic/practical experiences in physics such as Microcontroller Electronics and Physics Phun Night Practicum. Note: Students may take each ST: course for credit.

PC-200 General Physics I (Fall; Yearly; 3.00 Credits; N,QM) An algebra-based introduction to the basic principles of mechanics (including periodic motion, fluid static's and dynamics), heat and thermodynamics, molecular theory and wave motion (including acoustics). Note: a working knowledge of algebra and trigonometry is required. Corequisite: PC200L.

PC-200L General Physics Lab I (Fall; Yearly; 1.00 Credit; N) An introductory algebra-based laboratory experience designed to accompany PC200. The individual experiments will involve topics in mechanics, energy, sound, and waves. Labs Involve computer acquisition of data for some experiments. Note: A special fee is assessed. Corequisites: PC200.

PC-201 General Physics II (Spring; Yearly; 3.00 Credits; N,QM) An algebra-based introduction to basic principles of electricity, magnetism, electromagnetic waves, and optics. Additional topics may include atoms and molecules, nuclear physics, relativity and solid state physics. Note: a working knowledge of algebra and trigonometry is required. Corequisite: PC201L. Prerequisite: PC200.

PC-201L General Physics Lab II (Spring; Yearly; 1.00 Credit; N) An algebra-based introductory laboratory experience designed to accompany PC201. The individual experiments will involve topics in circuits, light and optics, and nuclear physics. Involves computer acquisition of data for some experiments. Note: A special fee is assessed. Corequisite: PC201.

PC-202 Intro Physics I (Fall; Yearly; 3.00 Credits; N,QM) A calculus-based introduction to the basic principles of mechanics (including periodic motion and dynamics), heat and thermodynamics, and special relativity. Corequisite: PC-202L and Corequisite or Prerequisite: MA130.

PC-202L Intro Physics Lab I (Fall & Spring; Yearly; 1.00 Credit; N) This lab is a calculus-based introductory laboratory experience that is designed to accompany PC202. Individual experiments will correlate with the course, including kinematics, Newton's Laws, energy, and momentum. Note: A special fee is assessed. Corequisite: PC202.

PC-203 Intro Physics II (Spring; Yearly; 3.00 Credits; N,QM) A calculus-based introduction to basic principles of electricity, magnetism, electromagnetic waves and optics. Additional topics may include atoms and molecules, nuclear physics, relativity and solid state physics. Corequisite: PC-207 or PC-203L. Prerequisites or Corequisite: Take MA-230 and either PC-202 or PC-204.

PC-203L Intro Physics Lab II (Spring; Yearly; 1.00 Credit; N) An algebra-based introductory laboratory experience designed to accompany PC203. The individual experiments will involve topics in circuits, light and optics, and nuclear physics. Note: A special fee is assessed. Prerequisite: PC202. Corequisite: PC203.

PC-204 University Physics (Variable; Yearly; 4.00 Credits; N,QM,WK-FR) A calculus-based introduction to the basic principles of mechanics (including periodic motion, statics, and dynamics), heat and thermodynamics, and special relativity. This course includes an integrated introductory laboratory experience. This course is designed to be taken by students interested in a POE in Physics or Engineering Physics. Note: a special fee is assessed. Pre- or Co-Reqs: MA-130; FYC-101 or EN-110 or EN-109.

PC-209 Electronics (Spring; Variable; 3.00 Credits; N) An introduction to the theory and application of analog and digital electronics, starting with basic AC and DC circuits. The unit explains the principles of operation of the power supply, amplifier, oscillator, logic circuits, micro controllers, and other basic circuits. An associated laboratory component allows construction of and measurements on the circuits under consideration. Note: a special fee is assessed.

PC-211 Environmental Physics (Spring; Yearly; 3.00 Credits; N,QM) A standalone course in physics focusing on natural processes and environmental technologies using physical concepts from mechanics, energy, thermodynamics, electromagnetic radiation, atomic spectra, fluid flow, atmospheric processes, sound

waves and radioactivity. Designed for environmental science and geology students, those taking this course cannot take other algebra-based (PC200/201) or calculus-based (PC202/203) introductory physics courses. A working knowledge of algebra and trigonometry is required. Corequisite: PC211L.

PC-211L Environmental Physics Lab (Spring; Yearly; 1.00 Credit; N) An introductory laboratory experience designed to accompany PC211. Individual experiment will focus on natural processes and environmental technologies using physical concepts from mechanics, energy, thermodynamics, electromagnetic radiation, atomic spectra, fluid flow, atmospheric processes, sound waves and radioactivity. Note: A special fee is assessed. Corequisites: PC211.

PC-239 Nuclear Threat (Variable; Yearly; 4.00 Credits; CA,N,H,CW,WK-SP) This course examines the development and ramifications of nuclear weapons. Students will learn the basic physics upon which these devices operate, and explore moral issues that arose in the interactions of communities impacted by their construction, use, and testing, including the perspectives of scientists, government officials, and affected citizenry. Current issues and concerns regarding nuclear weapons will be studied as well.

PC-289 Physics Seminar II (Fall; Yearly; 1.00 Credit) Seminar series, required of all sophomore Physics/Physics-Engineering POEs, consisting of research seminars given by invited speakers and members of the department, both faculty and students. Discussions regarding specific career opportunities and preparation for graduate studies will also be an integral part of the seminar series. Prerequisites: PC189.

PC-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Entry level treatment of a variety of academic/practical experiences in physics such as Musical Acoustics and Physics Phun Night Practicum. Note: Students may take each ST: course for credit.

PC-300 Modern Physics Lab (Fall; Yearly; 3.00 Credits; N,CW) The origin and progress of physics in the 20th century, including relativity and quantum theory with applications in atomic and molecular physics, nuclear physics, elementary particles and possibly some solid state physics. Note: A special fee is assessed. Prerequisites: MA230 and PC203. Corequisite: PC301.

PC-301 Theoretical Modern Physics (Fall; Yearly; 3.00 Credits; N) The origins and progress of Physics in the 20th century, including relativity and quantum theory with applications in atomic and molecular physics, nuclear physics, elementary particles and possibly some solid state physics. Prerequisites: MA230 or PC203. Corequisite: MA235.

PC-307 Advanced Physics Lab (Spring; Yearly; 3.00 Credits; N,QS,CW) Provides laboratory projects at the intermediate level. A series of projects is offered which best meet the educational needs of the student. Prerequisite: PC300. Special fee assessed.

PC-320 Engineering Mechanics I: Statics (Fall; Variable; 3.00 Credits; N) A problem-solving approach to applied mechanics involving equilibrium of co-planar and non-planar force systems, analysis of frames and trusses, friction, centroids and moments of inertia. Prerequisite: PC202 or PC204.

PC-321 Engineering Mechanics II: Dynamics (Spring; Variable; 3.00 Credits; N) A problem-solving approach to applied mechanics involving the kinematics and kinetics of particles and rigid bodies. Techniques involving Newton's laws, work-energy and impulse momentum are presented and used extensively. Prerequisite: PC320.

PC-340 Mathematical Methods in Physics (Variable; Yearly; 3.00 Credits; N) An introduction to the mathematics used in advanced physical science courses. The emphasis is on early exposure to mathematical techniques and their applications rather than on rigorous derivation. Topics include series analysis, complex variables, theory, matrix mechanics, ordinary and partial differential equations, vector and tensor analysis, and Fourier series. Prerequisites: PC203 and MA230.

PC-350 Thermodynamics (Spring; Yearly; 3.00 Credits; N) An intermediate level course treating the concept of temperature and its measurement, the concepts of heat and work, the laws of thermodynamics, applications of these concepts to physical systems, the elements of statistical mechanics and as many topics of current concern as time allows. Prerequisites: MA235 and PC301.

PC-389 Physics Seminar III (Fall; Yearly; 1.00 Credit) Seminar series, required of all junior Physics/Physics-Engineering POEs, consisting of research seminars given by invited speakers and members of the department, both faculty and students. Discussions regarding specific career opportunities and preparation for graduate studies will also be an integral part of the seminar series. Prerequisite: PC289.

PC-395 Integrated Physics (Spring; Yearly; 1.00 Credit) This course is a problem-oriented integrative review of physics using a calculus-based introductory physics text and selected advanced texts used in follow-on courses. The course consists of student self-study, weekly questions and exams, and assigned material to study. Students prepare short write-ups of answers to questions and make class presentations of these questions and topics. Junior or senior class level is required.

PC-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Intermediate to advanced level treatment of a variety of areas within physics such as solid state physics, astrophysics, general relativity, and medical physics. Note: Students may take each ST: course for credit.

PC-402 Quantum Mechanics (Fall; Odd Years; 4.00 Credits; N) This course continues the discussion of the Schrodinger Equation, the particle-in-a-box, the harmonic oscillator, angular momentum, the hydrogen atom, and electron spin started in PC300 and/or CH305, but at a level that is mathematically much more detailed and proceeds from the postulates of quantum mechanics in a logical manner. With this beginning, the course then focuses on more complex problems such as the behavior of multi-electron atoms and molecules. Issues of the meaning of measurement such as embodied in the EPR paradox, the Bell Inequality, and the interpretation of associated experiments are also discussed. The course is heavily problem oriented requiring a strong mathematical background. Additional mathematics background such as PC340 and/or MA335 is suggested in addition to the formal prerequisites of MA235 and PC300 or CH305.

PC-410 Mechanics (Fall; Odd Years; 4.00 Credits; N) A study of classical mechanics including Newtonian, Lagrangian and Ham-

iltonian approaches. Emphasis is placed on developing the student's ability to analyze physical problems involving particles, systems of particles and rigid bodies. Insight is provided into a variety of techniques for solving such problems. Prerequisites: PC-203 and MA-335.

PC-430 Optics (Spring; Variable; 3.00 Credits; N) The wave theory of light as applied to interference, diffraction, polarization, and image formation. Major emphasis on Fourier techniques. Study of geometrical optics, quantum optics, and radiometry as time permits. Prerequisites: PC300 or PC301.

PC-450 Physics Research I (Fall & Spring; Yearly; 1.00-4.00 Credits; N) An opportunity for the student to do an independent research project under the guidance of a faculty member. Note: listed as Research: (title); may be taken multiple times for credit. Prerequisite: permission.

PC-451 Physics Research II (Fall & Spring; Yearly; 1.00-4.00 Credits; N) An opportunity for students to do a more advanced independent research project under the guidance of a faculty member. Prerequisite: by permission.

PC-489 Physics Seminar IV (Fall; Yearly; 1.00 Credit) Seminar series, required of all senior Physics/Physics-Engineering POEs, consisting of research seminars given by invited speakers and members of the department, both faculty and students. Discussions regarding specific career opportunities and preparation for graduate studies will also be an integral part of the seminar series. Prerequisite: PC389, and restricted to Seniors with POE of Physics or Engineering Physics.

PC-490 Physics Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; N) See chapter, "Special Programs" under internships. Note: may be repeated up to a total of 9 hours of credit. Corequisite: PC495. Prerequisite: permission and Junior or Senior standing.

PC-491 Electricity & Magnetism (Fall; Even Years; 4.00 Credits; N) A study of electromagnetic phenomena, including electrostatics, electric fields in matter, magnetostatics, magnetic fields in matter, introductory electrodynamics including Maxwell's equations, and electromagnetic waves, potentials, and fields. Corequisite: PC340. Prerequisite: PC203.

PC-495 Internship Seminar/Research (Fall & Spring; Yearly; 2.00-6.00 Credits; N) Requires students to reflect on the internship experience and/or pursue research related to the placement. Corequisite: PC490. Prerequisite: permission.

PC-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer titles not normally offered. Prerequisites vary by course.

PC-TUT PC Teaching Assistant (Variable; Variable; 1.00-6.00 Credits) See Catalog.

POLITICS

PS-101 Introduction to U.S. Government (Variable; Yearly; 4.00 Credits; S,WK-SI) An introduction to the theory and practice of U.S. government. The course surveys the underlying structure of American politics, its economic, cultural and legal foundations and the

daily practice of politics, e.g. groups, parties, and the mass media. Requisite: FYC-101, EN-110, or EN-109 must be taken prior to or concurrently with this course.

PS-102 Introduction to International Politics (Variable; Yearly; 4.00 Credits; S,I,SW-GE) In this course we examine some of the dominant theoretical frameworks in international relations. We examine the most powerful international organizations. We assess these from the perspective of non-Western cultural frameworks. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109.

PS-110 Exploring the Law (Variable; Yearly; 1.00 Credit) An introduction to the legal profession, exploring the process of applying to law school, the variety of jobs in law, and how an undergraduate program can best prepare students for success.

PS-125 Citizenship (Variable; Variable; 4.00 Credits; SW-ER) What do citizens owe to fellow citizens at the local, national, and global levels? This course contemplates this question by examining the role of citizens in civil society. It examines citizens' social responsibility to others. It fosters each citizen's sense of empathy toward other citizens (including toward citizens living in different circumstances or having different worldviews) by exploring the social contexts of public policy problems. Using ethical reasoning, citizens will understand the ethics of citizenship in different settings and traditions. Citizens will consider the ramifications of enacting alternative public policies on the well-being of fellow citizens and of civil society. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109.

PS-155 Lobbying (Spring; Variable; 1.00 Credit; S) Students learn about lobbying in the United States and Pennsylvania, including the national and state constitutional provisions that permit and restrain lobbying. Students study and discuss lobbying techniques and ethics and the place of lobbying in the broader context of American and Pennsylvanian politics. Students will practice their lobbying skills both in class and in Harrisburg.

PS-190A Mock Trial (Fall; Yearly; 3.00 Credits; CS) A study of elements related to the preparation of a trial through the Mock Trial setting governed by the American Mock Trial Association. Students will learn the preparation of pleadings, applicable case law to the case presented, and obtain knowledge of the Rules of Evidence. Each year, Mock Trial is offered as PS-190A during the fall semester for 3 credits and PS-190B during the spring semester for 1 credit.

PS-190B Mock Trial (Spring; Yearly; 1.00 Credit; CS) A study of elements related to the preparation of a trial through the Mock Trial setting governed by the American Mock Trial Association. Students will learn the preparation of pleadings, applicable case law to the case presented, and obtain knowledge of the Rules of Evidence. Each year, Mock Trial is offered as PS-190A during the fall semester for 3 credits and PS-190B during the spring semester for 1 credit.

PS-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the departments to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

PS-206 The Culture War (Variable; Variable; 4.00 Credits; CA,S,SW-US) Is the U.S. at war with itself over core political and cultural values? This culture war is waged over hot-button policy

issues including abortion, school prayer, gay rights, religion in politics, marijuana, immigration, and diversity. Students explore the complex political contexts that shape the lived experiences of traditionally marginalized groups and examine how power, privilege, and marginalization influence policy outcomes.

PS-208 Policy and Community (Variable; Yearly; 4.00 Credits; SW-LE) In this course, students will engage in the policymaking process in Huntingdon. In conjunction with local policymakers, students will research a community problem and make policy recommendations based on that research. Class discussions will focus on common community issues in America (such as environmental and healthcare problems) in addition to research methods and local policymaking processes. Prerequisite or corequisite: FYC or CWS

PS-209 Sexual Politics (Variable; Variable; 3.00 Credits; S) In this course, we will discuss the history of sex and gender in political theory and practice. In part one, we will discuss highlights of the history of gender politics in the United States. In part two, we will build on this knowledge by exploring what feminists have to say on important current topics, such as gendered violence and sexuality.

PS-218 Public Policy & Admin. (Variable; Variable; 3.00 Credits; S) An introduction to the study of public policy and its administration. The course explores the ways which power, knowledge and institutions shape adoption and evolution of public policies in western democracies. Focusing on various policy areas, the course also surveys the public bureaucracies that administer these policies, examining what government agencies do and why they do it, and assesses alternatives to public bureaucracies. Prerequisite: PS101.

PS-221 American Political Thought (Variable; Variable; 4.00 Credits; H,CW,SW-US) Covers development of American Political Thought from the Revolution to the modern-day. Special attention is given to the tension between liberty and equality in our system, especially as those tensions are revealed in writings of women and African-American writers.

PS-222 Western Political Thought (Variable; Variable; 4.00 Credits; H,WK-HT) Surveys selected works of philosophers from Plato to Nietzsche. The course will focus on enduring questions – what is the good, the nature of the best regime, how do freedom and authority intersect, and so on. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

PS-230A Political Party Conventions (Variable; Irregular/On Demand; 1.00-2.00 Credits; S) This course is an experiential education opportunity that takes place in the city that hosts either the Democratic National Convention or the Republican National Convention. It takes place every four years during presidential election years in the late summer or early fall. Each student decides whether he or she wishes to attend the program associated with the Democratic Party or the Republican Party. It is an intense, two-week seminar that features presentations by leading academics and practitioners about the presidential election, including the nomination campaign, the national party conventions, and the general election. The seminar also features site visits, fieldwork assignments, and small group discussions focused on these experiences and the course readings. The seminar culminates in the public events that comprise the Democratic National Convention

or the Republican National Convention. Requires consent of the instructor and pre-payment of required course fees.

PS-230B Presidential Inauguration (Variable; Variable; 1.00-2.00 Credits; S) This course is an experiential education opportunity that takes place in Washington, D.C. every four years during the inauguration of the president. It is an intense, 10-day seminar that features presentations by leading academics and practitioners about the presidency and presidential elections; site visits to embassies, government agencies, think tanks, media outlets, etc.; and small group discussions focused on these experiences and the course readings. The seminar culminates in the public events that comprise the presidential inauguration. Requires consent of the instructor and pre-payment of required course fees.

PS-230C Inside Washington, D.C. (Variable; Variable; 1.00-2.00 Credits; S) This course is an experiential education opportunity that takes place in Washington, D.C. It is an intense seminar that features presentations by leading academics and practitioners about politics and the media, congressional elections, and presidential/congressional relations. The seminar includes site visits to embassies, government agencies, think tanks, media outlets, etc. with the aim of providing first-hand opportunities to witness government decision-making in action, as well as the efforts others on The Hill who try to influence government outcomes. Requires consent of the instructor and pre-payment of required course fees.

PS-230D Top Secret (1.00 Credit; S) As of 2019 this course is no longer offered and was replaced with PS 230E National Security, please see below.

PS-230E National Security (Summer; Variable; 1.00 Credit; S) This course is an experiential education opportunity that takes place in Washington, D.C. It is an intense, week-long academic seminar. Students explore the inner workings of the U.S. national security landscape with nationally recognized journalists, politicians, political analysts, and scholars as your guides. The course expands knowledge of American and international politics through on-site visits to such places as Capitol Hill, executive agencies, embassies, think tanks, and media organizations. Students engage in and network with nationally and internationally recognized public officials and business professionals to develop a sense of civic engagement and enhance leadership skills. Requires consent of the instructor and may require pre-payment of required course fees.

PS-235 Migration (Fall; Variable; 2.00 Credits; I,S,SW-GE) This two-course series (PS-235/236) The fall semester pre-departure course examines the full range of policy issues related to migration in North America. The winter course/trip travels to southern Mexico, where professors and students from the Autonomous University of Chiapas (UNACH) will help students to gain first-hand insight into Mexico's migration policies through lectures, discussions, and visits to government migration detention centers. In addition to learning from the UNACH scholars, students will learn about Mexican culture from their homestay families. Students must complete both courses in the series to fulfill a Global Engagement course requirement. The total course fee is divided equally between PS-235 and PS-236.

PS-236 Eyewitness to Migration in Mexico (Variable; 1.00 Credit; I,S,SW-GE) This two-course series (PS-235/236) The fall semester pre-departure course examines the full range of policy issues

related to migration in North America. The winter course/trip travels to southern Mexico, where professors and students from the Autonomous University of Chiapas (UNACH) will help students to gain first-hand insight into Mexico's migration policies through lectures, discussions, and visits to government migration detention centers. In addition to learning from the UNACH scholars, students will learn about Mexican culture from their homestay families. Students must complete both courses in the series to fulfill a Global Engagement course requirement. The total course fee is divided equally between PS-235 and PS-236. Pre-Req: PS-235.

PS-241 European Politics (Variable; Variable; 3.00 Credits; S,I) Examines the modern history, political culture, institutions and policies of the major West European states. Britain, France, West Germany and the European Communities are compared along with selected other countries. The major problems confronting these are highlighted. Prerequisite: PS101 or PS102.

PS-243 U.S. Foreign Policy (Variable; Variable; 3.00 Credits; S,I) Examines U.S. Foreign Policy from the Monroe Doctrine to the New World Order. Special emphasis is given to the tension between isolationism and globalism in this century. The course will focus on contemporary issues such as: the relationship with the UN, the U.S. as a global policeman, and the role of human rights as an American priority. Prerequisite: PS102.

PS-249 Senegambia I (Variable; Variable; 2.00 Credits; I,S,CA,SW-GE) In the pre-departure course (PS-249) on campus, we study and discuss Gambia's history and contemporary politics and culture. This is followed by a short-term study abroad course (PS-25), during which we spend three weeks exploring the political culture and society of The Gambia. Students must complete both PS-249 and PS-250 to fulfill the Cultural Analysis or Global Engagement requirements.

PS-250 Senegambia II (Variable; Yearly; 2.00 Credits; CA,I,S,SW-GE) These courses (PS249 and PS250) are co-requisites. In the fall semester, we study and discuss Gambia's history and contemporary politics and culture. During the winter break, we spend three weeks exploring the political culture and society of The Gambia. Corequisite: PS250. Students must complete both PS249 and PS250 to receive CA credit. If you want to get Global Engagement credit, after returning from the trip you must complete a 1-credit course that has been approved by the Global Education Committee.

PS-289 Politics and the Media (Variable; Variable; 4.00 Credits; S,CW) This course has two components. First, it looks at the interaction of politics and the media in the context of the United States. Students will learn about how politicians use the media and about how the media covers politics. Second, it is designed to help students hone their research and writing skills. The class involves extensive class discussion, applications of course materials to contemporary coverage of American politics in the media, and instruction about research and writing. Students will be required to pay close attention to the interaction of politics and the media during the course of the semester. Prerequisites: PS101.

PS-291 Mexican Fulbright Special Topics (Variable; Variable; 1.00-3.00 Credits; I,S,SW-GE) This comparative politics course will provide a significant degree of attention to the operation of society and government in a country other than the United States. It will focus on a people and culture outside of the U.S. or on a global

challenge. The course will often relate to Mexico or to U.S.-Mexico relations. The specific topic of this course will be determined based on the interests of the Mexico Studies Chair and the needs of the Politics Department.

PS-298 Gender and Health Care (Variable; Yearly; 3.00 Credits; SW-ER) In this course, we will discuss gender and healthcare policy around the world, focusing on the ethical responsibilities of healthcare policymakers and providers. We consider how gender affects policy and health outcomes in various ways, depending on the cultural context. Class discussions will address topics such as reproductive rights and LGBTQ healthcare access. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

PS-299 Special Topics (Variable; Variable; 1.00-4.00 Credits; I,S,SW-GE) Offers supplements to the regular departmental program, exploring topics and areas not regularly scheduled. Note: Students may take each ST: course for credit.

PS-305 Politics in Film (Variable; Variable; 4.00 Credits; H,F) This course is designed as an introduction to the study of political ideas as presented in motion pictures. We will look both at the direct representation of political ideas or points of view (especially through satire), and at the way Hollywood has shaped our ideas about the political process. Because film is very much a 20th century medium, we will look with special care at the two defining political events of this century, the crisis of Western democracy following World War I, and the Cold War.

PS-311 Constitutional Interpretation: Powers of Government (Variable; Variable; 4.00 Credits; H) An examination of the three branches of government, their constitutional powers, and the limitations on those powers as interpreted by Supreme Court. Special attention is given to the areas of delegated and concurrent powers. The operation of the Supreme Court and the Federal court system are also reviewed. Prerequisites: PS101 or permission.

PS-312 Constitutional Interp.: Civil Rights Rights (Variable; Variable; 4.00 Credits; H,CW) Examines citizen's rights and liberties which the Constitution protects against infringement by the government. Those freedoms enumerated in the Bill of Rights are reviewed as well as the right to privacy, due process, and equal protection. Prerequisites: PS101 or permission.

PS-313 Congress and Presidency (Variable; Variable; 4.00 Credits; S,CW) Examines the intellectual and constitutional foundations of Congress and the Presidency, and the evolution of their powers and responsibilities. The course also explores how, through cooperation and confrontation, the institutions make decisions about war and peace, spending, and taxation. Prerequisite: PS101.

PS-318 Parties, Elections & Campaigns (Variable; Variable; 3.00 Credits; S) Examines the role political parties and elections play in democratic theory and practice in the U.S. Topics include party systems in the U.S., history, party organization, comparisons with parties in other countries, electoral competition, and elite mass linkages. Contemporary issues such as campaign finance, campaign strategy, and the role of the mass media are also explored. Prerequisite: PS101.

PS-320 Topics Political Philos & Jurisprudence (Variable; Variable; 3.00 Credits; H) Examines specific topics in the area of political philosophy and law. Topics will include " Foundations of Amer-

ican Constitutionalism, " " African-American Social and Political Thought, " " Liberalism, " and " Shakespeare's Politics. " Students may take each course for credit.

PS-322 Surveillance and the Constitution (Variable; Yearly; 3.00 Credits; H,SW-ER) This course examines the increasing reach of surveillance in our society and inquires how the U. S. Constitution creates a legal framework for regulating it. Topics include data collection, public surveillance (e.g., with video cameras), and privacy. Students will consider the economic, ethical, and legal aspects of this practice. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

PS-330 TPP: Topics in Public Policy (Variable; Variable; 3.00 Credits; S) Examines the formation and implementation of public policy by an in-depth focus on a single policy area. The course will investigate a particular policy area for the semester, such as environmental policy or health care policy. Policy study will include analysis of interest groups, public opinion, congressional committees and federal agencies. Research and analytical exercise will be emphasized. Prerequisite: PS101.

PS-334 Human Rights (Variable; Variable; 3.00 Credits; I,S) This class focuses on some of the debates concerning human rights: realism versus idealism; individualism versus communitarianism; universalism versus relativism; religious fundamentalism versus secularism; women's rights as human rights; liberalism versus socialism. We review the historical evolution of human rights. We devote part of the semester to the role of literature and the arts in creating and promoting human rights. Prerequisite: PS102.

PS-335 Law of Nations (Variable; Variable; 3.00 Credits; I,S) This course explores the substance of modern international law. Course topics may include the Vienna Convention, the UN Charter, the Law of the Sea Convention, the Rome Statute, the International Court of Justice, and the International Criminal Court. The course also explores how nation states interact with these bodies under their internal laws and customary international law. Prerequisite: PS 102.

PS-340 Topics in International Politics (Variable; Variable; 1.00-4.00 Credits; S,I) Examines international politics in light of a specific topic or issue. The topics include themes such as: Global Environmental Politics, Nationalism, and Competing World Ideologies.

PS-346 African Politics (Variable; Variable; 3.00 Credits; I,S,CW) This course examines some of the factors that explain the political problems that plague Africa. Topics include: colonialism, human rights, corruption, ethnicity and pan-Africanism. Prerequisite: PS102.

PS-349 Senegambia III (Variable; Variable; 1.00 Credit; I,S,SW-GE) This course will meet 1 hour per week in spring semester. A requirement of the course is to participate in a three week summer trip to West Africa. During the spring semester we will examine the history and contemporary politics and economics of the Senegambia region. At the conclusion of the spring semester we will spend 3 weeks exploring the political culture and society of the Gambia and Senegal in West Africa. There is a fee for the trip to Africa. Corequisite: PS250. If PS249 and PS250 are completed they will count as CA. PS349/350 will not.

PS-350 Senegambia IV (Variable; Variable; 3.00 Credits; I,S,SW-GE) See PS249. Corequisite: PS349. Students must complete

PS249 and PS250 to receive CA credit. A course fee is applied.

PS-389 TWC: Washington Special Topics (Fall & Spring; Yearly; 1.00-4.00 Credits) This course is for students participating in the Washington Center's internship program in Washington, D.C. Each student will select one of several courses offered by the Washington Center upon acceptance into the program. The title of this Special Topics course will vary according to the course the student enrolls in through the Washington Center.

PS-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Offers supplements to the regular departmental program, exploring topics and areas not regularly scheduled. Examples include Religious Revivalism in the Third World, Race, Religion and Gender in American politics and Nationalism in Europe. Note: abbreviated ST:(Title); students may take each ST: course for credit.

PS-490 Legal & Public Affairs Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; S) An opportunity to apply concepts and theories learned in class and readings to a practical situation. Selected students work with chief administrative officers in State College and Huntingdon, police departments, environmental departments, legal offices or in the Court House. Note: may be repeated up to a total of 9 hours credit. Corequisite: PS495. Prerequisite: permission and Jr. or Sr. Standing.

PS-491 Washington Interns (Fall & Spring; Yearly; 2.00-9.00 Credits; S) See the chapter, "Special Programs" in the catalog under "Internships." Corequisite: PS495. Prerequisite: permission.

PS-492 Harrisburg Legislative Interns (Fall & Spring; Yearly; 2.00-9.00 Credits; S) A unique opportunity to experience the legislative process. Placements are made to the research staffs of various committees (e.g., Banking and Commerce, Education, Judiciary, Local Government and Urban Affairs) of the Pennsylvania House of Representatives. Committees are selected on the basis of student interests and needs in the Legislature. Corequisite: PS495. Prerequisite: Permission and Sophomore, Junior or Senior standing.

PS-495 Politics Res/Seminar (Fall & Spring; Yearly; 2.00-6.00 Credits; S) Required of all students holding internships. The emphasis is on readings and discussions of materials relevant to the internship experience, e.g., professional behavior, ethical conduct, confidentiality, etc. Students produce a major research paper on a topic selected by the student in conjunction with the internship supervisor and the course instructor. Note: may be repeated up to a total of 6 hours credit. Corequisite: PS490 or PS491 or PS492. Prerequisite: Minimum GPA of 2.50 and good academic standing required for internship eligibility. Development of internship proposal must occur a minimum of six weeks prior to start of internship. Prerequisite: 2.50 GPA, Permission and Jr. or Sr. standing. Corequisite: PS490 or PS491 or PS492.

PS-497 Honors Research I (Fall; Yearly; 3.00 Credits; S) Designed to offer exceptional students the opportunity to engage in an extensive undergraduate thesis or research project. Selected students will be invited by the faculty of the department to propose a subject of special interest to the students; working closely with at least one member of the department, students will develop and complete a research project in the first semester and present the results as a publishable paper in the second. Available by permission.

PS-498 Honors Research II (Spring; Yearly; 3.00 Credits; S) Designed to offer exceptional students the opportunity to complete the research paper started in PS497. Prerequisite: PS497.

PS-499 Senior Seminar (Spring; Yearly; 3.00 Credits; S) Intended as a capstone experience in the discipline and designed to engage students in their final year in the comprehensive study of a major question or issue confronting the discipline of political science. Prerequisites: PS101 or PS102 or PS222 and senior standing and three additional Political Science courses or departmental permission.

PS-TUT Political Science Teaching Assistant (Variable; Variable; 1.00-3.00 Credits; S) See Tutorial in the catalog.

PSYCHOLOGY

PY-101 Introduction to Psychology (Fall & Spring; Yearly; 3.00 Credits; S) An overview of the content and methodology in the field. Topics such as the history of psychology, physiological psychology, learning and memory, perception, motivation, child development, personality and social foundations are considered

PY-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites and fees vary by title.

PY-202 Personality (Fall; Yearly; 3.00 Credits; S) A consideration of representative approaches to the study of human personality, beginning with standard theoretical approaches and their applications. This is followed by a consideration of selected topics within the field of personality, e.g. aggression, sexuality, dependency, and competence. Prerequisite: PY 101

PY-203 Abnormal Psychology (Spring; Yearly; 3.00 Credits; S) A brief consideration is given to the historical approaches to "mental illness," followed by a consideration of present day classification, diagnostic measures, and therapy. Emphasis throughout is upon experimental data as applied to the various disorders. Prerequisite: PY101.

PY-205 Social Psychology (Spring; Yearly; 3.00 Credits; S) The study of human interaction and interpersonal relationships, including selected areas of current research and theory such as social perception, interpersonal communication, attitude formation and change, conformity, aggression, and interpersonal attraction. Prerequisite: PY101.

PY-207 Human Sexuality (Fall; Yearly; 3.00 Credits; S) Examines human sexuality from psychological and cultural perspectives. Topics include the physiology of sexual functions, conception and contraception, sexual behavior through the life span, sexual intercourse, sex and society, sex and the law, and sex and morality. Prerequisite: PY101.

PY-210 Psych Professional Development Seminar (Variable; Yearly; 1.00 Credit; S) This course explores professional opportunities in the field of psychology and related fields. You will assess your professional skills and interests and create materials needed for a successful internship, job, or graduate school search. We also will explore how professional knowledge and skills can be shared as

future engaged and effective members of communities.

PY-216 Public Health (Variable; Yearly; 4.00 Credits; S,N,WK-SP) This seminar serves as an introduction to evidence-based public health. The course will utilize public health methodologies to investigate historical and current public health issues. Pre-req or co-req: FYC-101 or EN-110 or EN-109.

PY-238 Biopsychology (Fall & Spring; Yearly; 3.00 Credits; S,N) Focuses on neurobiology and neuroanatomy as they relate to sensory processes, motivation, reinforcement, learning, and memory. Prerequisites: PY101 or BI105 or permission.

PY-260 Research Methods & Statistics I (Variable; Yearly; 4.00 Credits; CW,Q,S) Part one of a two-part sequence of Research Methods and Statistics for Psychology. This course focuses on becoming a better research producer and a research consumer from a psychological science perspective. Students will learn to think critically about media claims and accurately summarize primary source articles about behavior. Students will learn to use statistical software to accurately describe data. Students will learn to communicate effectively about research through written and oral work and make ethical judgments informed by APA ethical standards. Students will design and execute their own individual research studies. Prerequisite: PY-101

PY-270 Cognitive Neuroscience (Fall & Spring; Yearly; 3.00 Credits; S,N) Focuses on the neural mechanisms of mental processes including sensation and perception, attention, memory, reasoning, and decision making. Topics include basic neuroanatomy, functional imaging techniques, and evidence from neurotypical and clinical populations. Prerequisites: PY101.

PY-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

PY-302 Moral Judgment (Variable; Variable; 3.00 Credits; S,SW-ER,CTGES) This course will cover basic issues relevant to understanding and evaluating moral judgment. We will compare philosophical models of human judgment with psychological models of human judgment. You will apply both philosophical and psychological models to contemporary ethical issues and reflect on your own beliefs and social responsibilities.

PY-303 Learning & Conditioning (Fall; Yearly; 3.00 Credits; S) Explores the issue of how we are changed by experience, using primarily a behaviorist perspective, applied to animal and human data. Both theory and applied applications of theory will be considered. Prerequisite: PY101.

PY-304 Cognitive Psychology (Fall; Yearly; 3.00 Credits; S) Explores an array of issues in human memory, primarily from a cognitive/information processing point of view. Major emphasis is on using research data to formulate answers to both theoretical and applied questions. Prerequisite: PY101.

PY-305 Measurement Theory (Fall; Even Years; 3.00 Credits; S) Emphasizes the theory, design, and evaluation of psychological tests. Special attention is paid to topics such as validity and reliability, practical issues involved in administration, scoring and interpreting selected psychological tests. Prerequisite: PY101 and

ND.SS214.

PY-311 Psychology of Prejudice (Spring; Yearly; 3.00 Credits; S,SW-US) This course meets the U.S. Experience requirement. This course will apply a variety of psychological theories to understand prejudice and political behavior with a focus on the U.S. context. We will focus on understanding how group boundaries are defined and enforced to create and maintain social hierarchies and the impact of prejudice and marginalization on individuals.

PY-312 Cultural Psychology (Variable; Yearly; 3.00 Credits; S) Cultural psychology is the scientific study of how cultural norms influence how individuals think, feel, and behave. Cultural psychologists study the ultimate social situation: culture. Questions from this field are relevant to our everyday lives and are important in shaping our understanding of ourselves and views of others. Pre- or Co-Req: PY-101 or SO-101.

PY-321 Health Psychology (Spring; Yearly; 3.00 Credits; S) Course will examine empirical findings from disciplines of psychology, medicine, and public health. Course topics include research methods, stress and social support, health behavior and primary prevention, management of chronic/terminal illnesses, gender and cultural issues in health, and psychoneuroimmunology. An underlying theme will be to dispel health-related myths and fads that are so prevalent in the popular media. Prerequisites: PY101.

PY-322 Sport Psychology (Variable; Yearly; 3.00 Credits; S) This course provides an overview of sport psychology. Students will gain insight into the psychological processes involved in sport and other fields involving human performance. Topics such as motivation, arousal and stress, burnout, skill acquisition, team dynamics, and psychological skills training will be explored as they relate to maximizing our ability to perform at a high level. Pre-Req: PY-101

PY-340 Research in Psychology (Fall; Yearly; 2.00 Credits; S) Allows students to become involved in an ongoing research program. Students will be required to read primary literature from the specific field of investigation and become involved in execution of an ongoing experiment. Students will be expected to perform the activities relevant to the experiment, assist in the analysis of the data, and write an APA style paper based on the results of the experiment. Prerequisites: PY101 and permission. Repeatable up to 3 times.

PY-341 Research in Psychology (Spring; Yearly; 2.00 Credits; S) Allows students to become involved in an ongoing research program. Students will be required to read primary literature from the specific field of investigation and become involved in execution of an ongoing experiment. Students will be expected to perform the activities relevant to the experiment, assist in the analysis of the data, and write an APA style paper based on the results of the experiment. Prerequisites: PY101 and permission. Repeatable up to 3 times.

PY-350 Developmental Psychology (Fall; Yearly; 3.00 Credits; S) This course is designed to integrate core topics in the discipline of developmental psychology with current key issues in society. Consequently, students will have the opportunity to analyze scientific literature and make connections to current, everyday life issues. Additionally, students will have the opportunity to explore developmental theory and its connection to public policy, known as "best practices" in parenting and education and consider develop-

mental theory's influence on current trends in our broader society. Prerequisites: PY101 or ED120 or ED130.

PY-361 Research Methods & Stats Psychology II (Fall & Spring; All Years; 4.00 Credits; S,CW,QS) This course focuses on becoming a better research producer and a research consumer from a psychological science perspective. Students will learn to think critically about media claims and accurately summarize primary source articles about behavior. Students will learn to use statistical software to accurately describe data. Students will learn to communicate effectively about research through written and oral work and make ethical judgments informed by APA ethical standards. Students will design and execute their own individual research studies. Pre-Req: PY-101 and either PY-260 or PY-360.

PY-370 Intro Counseling Theories & Techniques (Variable; Yearly; 3.00 Credits; S) This course is an introduction to major theoretical perspectives and practice techniques employed in contemporary counseling and therapeutic environments, with an emphasis on individual and group processes. In addition to practical application activities (e.g., motivational interviewing), students will also be introduced to techniques and requirements necessary for establishing an appropriate therapeutic relationship and becoming a skilled helper, including ethical/legal considerations, consultation, referral, crisis counseling, and counseling research. By the end of the course, students should have a broad knowledge of counseling theories/theoretical orientations, basic counseling skills, and philosophies that support the building and maintenance of therapeutic relationships.

PY-375 Psychology of Emotion (Variable; Yearly; 3.00 Credits; S) This course introduces the scientific study of emotion (Affective Science). It examines the historical and philosophical origins of emotion but focuses on contemporary theories, concepts, and methods of study in emotion science; the relationship between emotion, cognition, and the brain; and variation in emotion phenomena related to gender, culture, and group processes. Pre- or Co-Requisite: PY-101 or SO-101

PY-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Variable: 1-4 credits. Occasional offerings in which a group of students and a professor explore an area of specialized interest in a seminar format. Recent offerings have been "Multicultural Psychology" and "Psychology of Gender." Students may take each ST: course for credit.

PY-401 Comparative Psychology (Spring; Odd Years; 3.00 Credits; S,N,CS) Comparative Psychology examines the continuity of behavioral and psychological mechanisms between nonhuman animals and humans suggested by evolutionary theory. Attention is paid to the comparison between human and nonhuman animals on traditionally human characteristics, including self-recognition, language, culture, tool use, and several other characteristics. Prerequisites: PY101 or BI105 and Junior or Senior standing or permission of the instructor.

PY-402 Evolutionary Psychology (Spring; Even Years; 3.00 Credits; S,N,CS) This course uses the lens of modern evolutionary theory to understand human behavior. We will look for the influence of human evolutionary history on several modern human behaviors including, among others, dating and marriage, aggression, altruism, child-rearing, and behavioral differences between the sexes. Prerequisites: PY101 or BI105 and Junior or Senior standing or

permission of the instructor.

PY-403 Judgment & Decision Making (Spring; Yearly; 3.00 Credits; S) This course is designed to provide students with an introduction to the methodological skills and topics necessary for conducting, understanding, and applying research in judgment and decision making. Assignments include written and oral reports. You should gain a better understanding of the capabilities and limitations of human judgment through this course. Prerequisites: PY101.

PY-404 School Psychology (Variable; Yearly; 4.00 Credits; S,SW,LE) This course explores a scientist-practitioner model for improving learning and educational outcomes for all students. Focus is on the application of psychological principles and research-based models of prevention and intervention to improve outcomes. As a community-engaged learning course, coursework will be applied to a project identified by a community partner as meeting a community need. Pre-req: PY-101. Pre-req or co-req: FYC-101 or EN-110 or EN-109.

PY-406 Advanced Statistics for Psychology (Fall; Odd Years; 4.00 Credits; S,Q) An examination of statistics useful in social science research that builds on the base provided by Statistics for Social Science. Techniques that are examined include factorial analysis of variance, multiple correlation and regression. Students not already acquainted with the computer are introduced to SPSS. Prerequisite: ND.SS214.

PY-410 Aggression and Prejudice (Spring; Yearly; 3.00 Credits; S,CS) This is an upper level seminar course limited to juniors and seniors. The course focus is on primary source readings from social psychology and political psychology that address the breadth of the human condition from compassion and empathy to political extremism and genocide. Topics include prejudice (racism, sexism, etc.), authoritarianism, social dominance, compassion, humanitarianism and human values.

PY-411 Psychology and the Law (Spring; Yearly; 3.00 Credits; S) This course explores the interface between psychology and the legal system. Students will be given an introduction to the legal decision-making process and how it differs from scientific methods of inquiry. Following the introduction, this course will emphasize how psychological theories can enhance our understanding of the legal system and how the legal system can be informed by psychological science. Prerequisites: PY101.

PY-412 Psychophysiology of Human Performance (Variable; Yearly; 3.00 Credits; N,S,CS) What makes a great performer great? This course addresses this basic question by exploring various processes underlying skill learning and performance from a psychophysiological and neuroscientific perspective. Throughout the course, a model of effective learning and performance will be developed, discussed, and critiqued, guided by the unifying principle of efficiency. Pre-Req: PY-101.

PY-415 Capstone in Psychology (Variable; Yearly; 3.00 Credits; S,CS) The purpose of this course is to assess the skills students acquire during their undergraduate career in the Psychology Department. Students will be expected to produce a written professional work. Pre-Req: PY-101 and senior class standing.

PY-450 Senior Research in Psychology I (Fall; Yearly; 2.00 Credits;

S) Emphasizes the design and execution of an individual research project on a topic chosen in consultation with faculty. Students are expected to become conversant with the relevant primary literature, design and conduct the research, perform appropriate statistical analyses and present a final paper in APA style. Prerequisite: PY309 and permission.

PY-451 Senior Research in Psychology II (Spring; Yearly; 2.00 Credits; S) See PY450.

PY-490 Psychology Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; S) See the chapter, "Special Programs" under Internships in the catalog. Corequisite: PY495. Prerequisite: permission and Jr. or Sr. standing.

PY-495 Psychology Internship Seminar (Variable; Variable; 2.00-6.00 Credits; S,SW-LE) This seminar will help you apply concepts from your academic work to your internship experience. It also is designed to enhance your professional, social, cultural, communication, reflective, and critical-thinking skills. We will explore the concept of community, strategies, and skills necessary for engaged community work, and benefits and limits of engagement with others within and across communities. Corequisite: PY-490. Requires instructor permission.

PY-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

PY-TUT Psychology Teaching Assistant (Variable; Variable; 1.00-5.00 Credits) See catalog.

RELIGION

RL-110 What Is Religion (Fall; Yearly; 4.00 Credits; H,CW) This course serves as an introduction to religious studies. It engages some of the most important questions which preoccupy students of world religions. How do religions work? What kinds of issues does religion address?

RL-115 Viking Religion (Variable; Variable; 4.00 Credits; H) This course introduces to the student the religion of the Vikings through literature, archeology, and historical portraits. It explores the uses and misuses of Viking lore in current culture.

RL-123 World Religions (Variable; Yearly; 4.00 Credits; H,I,CS,SW-GE) This class looks at how global religions engage with contemporary challenges and issues. We will discuss scriptures, rituals, and current events primarily based on sources within each tradition. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109. (Formerly titled Global Religions Today)

RL-131 Old Testament As History and Literature (Variable; Yearly; 4.00 Credits; H,I) An introduction to the historical-critical reading of the Old Testament against the background of the history, politics, religion, literature, and culture of the ancient Middle East. This course studies how these Israelites texts were written and how their literary qualities shape their religious meanings.

RL-132 New Testament As History and Literature (Variable; Yearly; 4.00 Credits; H) An introduction to the historical-critical reading

of the New Testament against the background of the history, politics, religion, literature, and culture of the ancient Mediterranean world. This course studies how these early Christian texts were written and how their literary qualities shape their religious meanings.

RL-199 RL Special Topics (Variable; Variable; 1.00-4.00 Credits) An examination of an area of study not regularly included in the departmental offerings. Titles will vary. Students may take each special topics course for credit.

RL-210 Sacred Landscapes (Either Semester; Variable; 3.00 Credits; H,CTDH) This course explores the relationship between the experience of geography and religious ideology. We take various environments—mountainous, oceanic, desert, forest, plains—and try to connect the religious thoughts of their inhabitants to the geography.

RL-230 Religions of India (Either Semester; Yearly; 4.00 Credits; H,I,CW,SW-GE) An introduction to religions originating in or having a major impact on contemporary India, including Hinduism, Sikhism, and Islam. We will engage with rituals, mythology, and sacred texts from each tradition. The emphasis in this class is on what makes these traditions compelling to the people who practice them. Pre- or Co-Req: FYC-101 or EN-110 or EN-109.

RL-235 Religion and Nature (Variable; Yearly; 4.00 Credits; H,I,CA,CW,WK-HT) What is the relationship between religious/spiritual worldviews and the ways humans interact with the natural world? We will examine religious views of nature, wilderness, pollution, and climate change, as well as ways in which these worldviews have led to harm to environmental systems. Students will also spend time examining their own relationships with the natural world. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

RL-241 Cyborg Salvation (Variable; Yearly; 4.00 Credits; H) This course introduces the student to the transhumanist movement, a technology-driven philosophy that seeks to drive the evolution of the species toward its "next stage." A core question of the course is whether this is a new, "upgraded" religion or a replacement for traditional religious hopes. Various proposals for human-technology hybridizations will be explored.

RL-250 Women in the Bible (Variable; Variable; 4.00 Credits; CA,H,WK-HT) This course focuses on the female characters in the Bible and on its teachings about the social and religious roles specific to women. The course studies those texts in both their ancient and modern contexts, with special attention to how they interact with culture and explores what meanings those biblical passages can have for women (and men) today. Prerequisite: FYC-101 or EN-110 or EN-109

RL-263 The Divine Feminine (Spring; Variable; 3.00 Credits; I,H) While the majority of religious people worldwide are women, their experiences and practices do not receive the same level of attention from academics as those of men. This class looks at women's religious experiences and the veneration of female divinities by both men and women.

RL-265 U.S. Religious Diversity (Variable; Yearly; 4.00 Credits; CA,H,CW,SW-US) The United States has become an increasingly religiously diverse nation, especially since the end of the Asian Exclusion Act in 1965. This course looks at the history of conflict, co-

operation, and power dynamics between different religious groups in the United States, as well as how religious diversity has impacted, and been impacted by, American politics. A particular focus of the class is the intersection of the categories of race and religion. Prerequisite or corequisite: FYC-101 or EN-110 or EN-109.

RL-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

RL-301 The Afterlife (Variable; Yearly; 4.00 Credits; H,CW,WK-HT) This upper-level seminar explores questions like these: What do major world religions teach about afterlife? How did the Bible's afterlife beliefs develop historically? Can the soul survive without the body? If so, what would a non-bodily life be like? What do near-death experiences prove about the afterlife? What is the meaning of life if there is (or is not) an afterlife? Pre-Req: FYC-101 or EN-110 or EN-109

RL-302 Atheism (Variable; Yearly; 4.00 Credits; H,WK-HT) This upper-level seminar explores questions like these: What are the arguments both for and against the existence of God? What motivates atheists to live morally? What is the meaning of life for atheists? How and why do some atheists practice religion, and how does a religion function without belief in God? How does atheism affect the well-being of individuals and societies? Prerequisite: FYC-101 or EN-110 or EN-109

RL-311 Bring Out Your Dead (Either Semester; Variable; 3.00 Credits; CA,H) Introduces the student to the ideologies, rituals, sociology, and psychological mechanisms involved in dealing with the dead and dead bodies. The course covers mortuary rituals, the preparation and treatment of dead bodies, the psychology of death, and the sociological consequences of the public manipulation of the dead.

RL-321 Women in the Bible (Either Semester; Yearly; 4.00 Credits; CA,H,WK-HT) This course focuses on the female characters in the Bible and on its teachings about the social and religious roles specific to women. The course studies those texts in both their ancient and modern contexts, with special attention to how they interact with culture and explores what meanings those biblical passages can have for women (and men) today. Prerequisite: FYC-101 or EN-110 or EN-109

RL-341 Religion and War (Variable; Yearly; 4.00 Credits; CA,H,CW) This course explores the role of religion in warfare. It looks at the evolution of religion and war in our species, modern anthropological investigations of religion and war, religious discussions of war in Western and non-Western religions.

RL-352 The Hebrew Prophets (Either Semester; Variable; 3.00 Credits; CA,H) This course combines a historical-critical study of the prophetic books of the Hebrew Bible against the background of the religion, politics, and society of ancient Israel and a theological appraisal of the relevance of the prophets' messages in today's world. Prerequisites: At least Sophomore standing or permission of the instructor.

RL-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites

vary by title.

RL-440 Yoga Studies (Variable; Yearly; 4.00 Credits; CA,H,I,CW) In the past fifty years, Yoga has become one of India's best-known exports, primarily in the form of physical (Hatha) Yoga. We will examine many of the numerous varieties of Yoga philosophy and explore how yoga and meditation became popular in the West. Prerequisite: Junior or Senior standing or permission of instructor

RL-450 God, Evil & the Holocaust (Either Semester; Variable; 3.00 Credits; H) If God is so powerful and so good, why is there so much Evil in the world? This course examines this problem from Jewish, Christian and agnostic perspectives, with special attention to the Holocaust, and studies ancient and modern attempts to confront this problem, including readings from the Bible, philosophers, theologians, Holocaust survivors, modern fiction, and contemporary films. Prerequisites: Junior or Senior standing.

RL-490 Religion Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; H) See "Internship" in catalog. Corequisite: RL495. Prerequisites: Jr. or Sr. Standing.

RL-495 Internship Seminar Religion Internship Research Seminar (Fall & Spring; Yearly; 2.00-6.00 Credits; H) See "Internship" in catalog. Corequisite: RL490.

RL-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

RL-TUT Religion Teaching Assistant (Variable; Variable; 1.00-3.00 Credits; H)

SOCIOLOGY, SOCIAL WORK, AND ANTHROPOLOGY

Sociology

SO-101 Introduction to Sociology (Variable; Yearly; 3.00 Credits; S,SW-US) The study of human social groups and the social processes that lead to both structural and cultural integration and differentiation primarily within contemporary American society. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109.

SO-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Offered at the discretion of the department to qualified students. Topic titles may vary from semester to semester and more than one may be offered per semester. Note: Students may take each ST: course for credit.

SO-203 Minority Experiences (Fall; Yearly; 3.00 Credits; S) An exploration of the factors that shape the experiences of minority group members in both domestic and global contexts. The social processes that function to construct minority identity among racial, ethnic, gender, and ability groups are studied. Prerequisites: SO101 or AN151.

SO-204 American Families (Fall; Yearly; 3.00 Credits; S) Examines the structure and functions of the family as a vital social institution. Particular emphasis is placed on emerging trends within the family including dual careers, non-traditional families, divorce, and

conflict management. Prerequisite: SO101 or AN151.

SO-241 Child & Family Services (Spring; Variable; 3.00 Credits; S) An overview of child and family services policies and practice. Primary emphasis is on the dynamic interaction between the child, family, community and social service delivery system. Service areas are explored including abuse and neglect, adoption, foster care, status offenders, and special needs of children and families. Prerequisites: SO101 or AN151.

SO-242 Aging & Society (Spring; Yearly; 3.00 Credits; S) Analyzes the physical, psychological and social processes involved in aging, and the societal response to aging. Prerequisite: SO101 or AN151.

SO-243 Death & Dying (Variable; Yearly; 3.00 Credits; S,SW-ER) This course introduces and explores cross-cultural attitudes, ethical dilemmas and the existential challenges of death and dying. Topics of the course include: self-examination of death attitudes, exploration of death customs and rituals, an overview of the dying process, exploration of difficult topics surrounding death and grief and bereavement. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109.

SO-244 Drugs and Society (Spring; Variable; 3.00 Credits; S) This course explores the history of substance abuse, models of addiction, physiological effects of commonly abused substances and treatment effectiveness. Some of the programs that will be examined include the 12-step program. Prerequisites: SO101.

SO-245 Cross-Cultural Perspectives Family Dev (Variable; Yearly; 3.00 Credits; S,WK-SI) Cross-Cultural Perspectives on Family Development: This course provides a theoretical, functional, and research-informed approach to studying family life from a cross-cultural perspective. Issues related to marital relationships, parenting styles, work-family life balance, family communication, sexuality and gender, domestic violence, family stress and coping, and aging are addressed using cross-cultural comparison, including comparisons between indigenous and non-indigenous cultures. Pre- or Co-Req: FYC-101 or EN-110 or EN-109.

SO-260 Introduction to Criminal Justice (Fall; Yearly; 3.00 Credits; S) Explores the nature of crime, the history of criminal justice, and the process of the modern justice system.

SO-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Offered at the discretion of the department to qualified students. Topic titles may vary from semester to semester and more than one may be offered per semester. Note: Students may take each ST: course for credit.

SO-302 Social Deviance and Criminology (Spring; Yearly; 3.00 Credits; S) Examines contemporary psychological and sociological theories of behavior deviation, including crime, delinquency, substance abuse and selected other categories. Typologies for classifying and studying crime are developed and evaluated. Trends in behavior deviation, including the characteristics of offenders and victims, are critically explored. Informal and formal, as well as proactive and reactive, social control systems aimed at managing behavior deviation are described and analyzed. Prerequisites: SO101 or AN151.

SO-305 Gender and Society (Spring; Yearly; 3.00 Credits; S) This course is designed to explore the history and discourse related

to the experiences and sociological definitions of gender roles across global and domestic contexts. Students will participate in critical analysis of the scholarship of gender roles using classical and contemporary works. The course will explore domestic and international experiences of men and women in biological, cultural, economic, environmental and political contexts. Prerequisites: SO101 or PY101.

SO-320 Wealth, Power, & Society (Fall; Variable; 3.00 Credits; S,CW) An investigation of the stratification of American society. The roots and repercussions of social inequalities are studied with special emphasis given to inequalities relating to social class, race, ethnicity and gender. Social structures through which these inequalities are sustained are critically examined. Prerequisites: SO101 and Sophomore, Junior, or Senior standing.

SO-335 Social Change (Spring; Variable; 3.00 Credits; S,CW) Exploration of causes and consequences of social change. Forms of social change are examined through case study analysis of significant economic and political developments, revolutions and wide-spread shifts in normative social patterns and their socially constructed meanings. Forces that drive social change will be studied, including changing demographics and technological innovation, as well as social movements and other intentional efforts to stimulate change through human agency. Prerequisites: SO101 and sophomore, junior or senior standing.

SO-350 Social Movements (Fall; Yearly; 3.00 Credits; S) This course provides a comprehensive critical analysis of collective action and social movement in global society. The course explores sociological literature on social movements and collective behavior. Students will produce a final video exploring a modern social movement. Students' projects will include the selected movements' history, leadership and membership, the impact of new media, public policies impacting the movement. Prerequisites: SO101 and SO, JR, or SR standing.

SO-362 Juvenile Justice (Variable; Yearly; 3.00 Credits; CW,S,SW-ER) The issues, trends, and challenges facing juvenile justice professionals are explored in this course. The history and philosophy of juvenile justice, processing, detention, and diversion of juvenile offenders are topics of the course. Pre-Req: FYC-101 or EN-110 or EN-109.

SO-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

SO-401 Sociology Senior Seminar (Spring; Yearly; 3.00 Credits; S) Sociology Senior Seminar is the capstone course for students who have focused their academic work in the sociological discipline. The course provides an opportunity for students to apply key curricular components previously explored during their undergraduate sociology coursework. The course is a designated service learning and experiential learning course. Students will assume substantial responsibility for the exploration of materials and presentation of those materials to their student colleagues. Students will also interact with campus and community partners during the semester. The course uses a student-led seminar format, coupled with community engagement and service learning components. Prerequisite: Senior standing.

SO-492 Sociology Internship (Fall & Spring; Yearly; 2.00-9.00 Credits; S) Minimum GPA of 2.50 and good academic standing required for internship eligibility. Development of internship proposal must occur a minimum of six weeks prior to start of internship. Corequisite: SO495. Prerequisite: 2.50 GPA, Permission and Junior or Senior standing.

SO-495 Sociology Research/Seminar (Fall & Spring; Yearly; 2.00-6.00 Credits; S) Requires students to reflect on the internship experience and pursue research related to the placement. Corequisite: SO492. Prerequisite: by permission.

SO-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer subjects not on the normal schedule. Prerequisites vary by title.

SO-ADVANCE Completion of Advanced Studies At: Participating International Programs: Muenster, Lille, Bockholt, Lincoln, Marburg (Variable; Variable; 45.00 Credits)

SO-TUT Sociology Teaching Assistant (Variable; Yearly; 3.00 Credits) Individualized study wherein the instructor designs the course in consultation with the student and is responsible for its administration. In the Tutorial, the instructor and student work closely on a regularly scheduled basis involving discussions, demonstrations, explanations and evaluations.

Anthropology

AN-151 Introduction to Anthropology (Fall & Spring; Yearly; 3.00 Credits; S,I) Dedicated to the proposition that there are many ways of being human, all of which are adaptations to particular sets of environmental and historical conditions. Trends and highlights of the human experience, both physical and cultural, are studied from a sociocultural perspective.

AN-254 Archaeology & Human Prehistory (Fall; Yearly; 3.00 Credits; S,I) Through readings, lectures, films, and discussions about a variety of archaeological sites, from Alaska to Zimbabwe, students are introduced to our earliest ancestors, to the diversity of prehistoric cultures, and to the origins of Western civilization.

AN-255 Applied Archaeology (Spring; Yearly; 3.00 Credits; CT-DH,H) Applied Archaeology uses method and theory to address real-world issues of historic preservation when the effects of modern construction, erosion, and looting threaten significant archaeological sites and artifacts. This course provides a survey of the practical applications of archaeology in the realms of historic preservation, museums, and cultural resource management. Students work with local artifact collections and conduct independent research.

AN-300 Anthropology of War & Peace (Either Semester; Variable; 3.00 Credits; S,I) A study of the incidence and nature of cooperation, competition, and conflict in human cultures. Evidence will be drawn from archaeological, ethnological and ethological data. Prerequisite: AN151 or PACS110.

AN-310 American Indians (Variable; Variable; 3.00 Credits; S) An examination of the social, economic and political lives of reservation and non-reservation American Indians set in the historical context of their minority treatment. Prerequisites; SO101 or AN151 or AN254.

AN-311 Topics in Anthropology (Spring; Variable; 3.00 Credits; S) Occasional offerings in which students and a professor explore an area of specialized interest. Some themes include religion, gender, culture change, cultural ecology, frontiers and insider/outsider. Prerequisites: AN151 or AN254.

AN-316 North American Prehistory (Variable; Variable; 3.00 Credits; S) A survey of the archaeological evidence in North America before 1492. Students learn about the diversity of groups, ranging in size from small bands of hunter-gatherers to highly complex societies, and how they exploited various ecological niches.

AN-351 Cultures of the World (Variable; Variable; 3.00 Credits; S,I) An introduction to the variation in human cultural systems. A cultural perspective is used to examine diversity in band, tribal, chiefdom, and state level societies. Prerequisites: AN151 or AN254 or permission.

AN-353 Archaeological Fieldwork (Summer; Irregular/On Demand; 2.00-4.00 Credits; S) An introduction to the ethics, principles and techniques of archaeological field research that includes a practicum with actual excavations on both prehistoric and historic sites.

AN-355 Evolution, Medicine and Health (Variable; Yearly; 3.00 Credits; S,N) This course focuses on the relationships among human ecology, population change, health and disease, social inequity, and adaptation in modern and prehistoric societies. Explores the origins of and pathways toward risk for infectious and chronic diseases, emphasizing the principles of epidemiology and the evolutionary history of both humans and pathogens. Prerequisites: AN151, and BI105 or BI190

AN-399 Special Topics (Spring; Yearly; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

AN-411 History of Anthropological Thought (Variable; Variable; 3.00 Credits; S,CW) Explores the major theoretical orientations of American and European Anthropology, including: functionalism, structuralism, social evolutionism, symbolic anthropology, as well as a consideration of Marxist, feminist and indigenous critiques. A capstone integrative experience for all upper level anthropology POEs. Prerequisites: AN151 or AN234.

AN-451 Cultural Ecology (Spring; Even Years; 3.00 Credits; S) An examination of the relationships between man and his environment, particularly noting how ecological variables influence such cultural patterns as subsistence, settlement, social relationships and stress behaviors. Some consideration is given to problems of the future. Prerequisite: AN151 or AN254.

AN-452 Archaeology Lab (Either Semester; Variable; 3.00 Credits; S) Provides instruction in all of the processes involved in preservation, conservation, cataloging, illustrating and analyzing artifacts and other materials from archaeological excavation. In addition to general experience, students specialize in an analytical technique of their choice. Prerequisites: AN151 and SO353.

AN-453 Archaeology (Variable; Variable; 3.00 Credits; S) An advanced introduction to archaeological method and theory. Students use a computer-simulated excavation to develop research

problems, design research strategies, and collect, analyze, and interpret data. Prerequisite: AN254 and ND.SS214.

AN-454 Ethnology (Variable; Variable; 3.00 Credits; S,I) An introduction to cross-cultural research. Using statistical methods and data from ethnographic sources, students examine patterns of cultural continuity and discontinuity, and test hypotheses about human cultural systems. Prerequisites: AN151 & ND.SS214.

AN-490 Internship/Need Paperwork (Variable; Variable; 2.00-9.00 Credits) See catalog.

AN-495 Internship Seminar (Variable; Variable; 2.00-6.00 Credits) See catalog.

AN-499 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer topics not normally offered. Prerequisites vary by topic.

Social Work

SW-214 Integrated Research Methods & Stats I (Variable; Yearly; 3.00 Credits; S) An integrated course sequence applying processes of social inquiry to the assessment of historically oppressed and vulnerable populations, and of the interventions used to help those populations. This course integrates key research concepts and commonly used quantitative and qualitative methods in the social sciences, with the ability to communicate effectively about research with written and verbal skills. The course teaches students not only to conduct social science research but also to consume and utilize social science research in a critical way, including in practice as a helping professional.

SW-215 Integrtd Research Methods & Stats II (Variable; Yearly; 3.00 Credits; S) The second part of an integrated course sequence applying the scientific process to the fields of Social Work and Sociology, emphasizing key research concepts, commonly used quantitative and qualitative methods, and the ability to communicate effectively about research with written and verbal skills. The course teaches students not only to conduct research but also to consume and utilize research.

SW-221 The Life Cycle (Variable; Yearly; 3.00 Credits; S,WK-SI) This course provides an introduction to lifespan development from conception, through birth, infancy, childhood, adolescence, and various stages of adulthood. Explores perspectives on the biological, psychological, and socio-cultural aspects of development over time. Examines human diversity as well as similarities in growth and development, utilizing theory and research. Discusses implications for prevention and intervention related to common developmental challenges and adversities. Pre-Req or Co-Req: FYC-101 or EN-110 or EN-109

SW-230 Introduction to Social Work Practice (Spring; Yearly; 4.00 Credits; S) Examines the generalist knowledge, values and skills of the social work profession. Emphasizes interviewing and communication skills, the development of a helping relationship, the strengths perspective and problem solving strategies. Prerequisites: SO101 or permission of instructor.

SW-231 Social Problems & Social Welfare (Variable; Yearly; 3.00 Credits; S,WK-SI) This course explores persistent social problems including poverty, inequality, unemployment, homelessness, fam-

ily violence, substance abuse, and lack of healthcare access, using historical, philosophical, and social science perspectives. The development of social policies and services as institutional responses to these problems are described and analyzed. Over the course of the term, students will review a significant body of literature related to a social problem/policy of choice, and conduct a case study with a community member who has experienced consequences of that same problem/policy. Prerequisites: FYC-101, EN-110, or EN-109.

SW-241 Children, Youth, and Family Services (Variable; Yearly; 3.00 Credits; CW,S,WK-SI) This course involves a critical analysis of child and family services, practices, and policies, while exposing students to the challenging risks and needs, traumatic and institutional experiences of high-risk youth and families, as well as sources of strength, protection, and resilience. Students will participate in analyzing and interpreting research using needs assessment data provided by the instructor, and complete a scaffolded research paper assignment to analyze a specific issue of interest.

SW-330 Social Work Practice: Individual, Family & Small Groups Laboratory (Fall; Yearly; 2.00 Credits; S,SW-LE) This concurrent laboratory for SW-331 allows students to gain further experience working in a social service agency through participation in volunteer work, which is supervised and evaluated by a human service professional within the agency. Through this work, students have an opportunity to apply the skills needed to work with vulnerable client populations, including engaging, assessing, and intervening. Co-Req: SW-331. Pre-Req: SW-230.

SW-331 Social Work Practice: Individual, Family & Small Groups (Fall; Yearly; 4.00 Credits; S) Explores the problem solving process used in social work practice with individuals, families and small groups. Interviewing and problem solving skills, family systems analysis and group process are refined in preparation for beginning practice with individuals, families, and small groups. Corequisite: SW330. Prerequisite: SW230.

SW-332 Social Work Practice: Large Groups, Organizations and Communities (Fall; Yearly; 4.00 Credits; S,CW) Focuses on the problem solving processes employed in the delivery of social work services at the agency, institutional and community level. Primary consideration is given to the systems approach to communities and the techniques, strategies, and roles utilized by the worker in assisting communities and groups to attain satisfying and developmental levels of social functioning. Prerequisite: SW230.

SW-333 Social Welfare Policies and Services (Variable; Yearly; 3.00 Credits; S,CW) A conceptual study of the meanings, nature, scope, implementation and evaluation of social policy as it relates to issues of social welfare. Prerequisites: SW-231 and SW-215.

SW-399 Special Topics (Either Semester; Variable; 1.00-4.00 Credits) Allows the department to offer topics not on the regular course offerings. Prerequisites and corequisites may vary by title.

SW-490 Social Work: Professional Semester (Spring; Yearly; 12.00 Credits; S) Full time supervised senior capstone field experience in an approved social work agency. Students integrate the knowledge, values and skills of the social work profession with experiential learning in preparation for assuming the responsibilities of an entry-level social work professional upon graduation.

Corequisite: SW495 Prerequisite: Permission.

SW-495 Professional Semester: Research Seminar (Spring; Yearly; 3.00 Credits; S) Involves research and discussion of practice issues of importance to the generalist social worker focusing on the impact these issues have on student's own practice experience. Corequisite: SW490. Prerequisite: Permission.

SW-TUT Social Work Teaching Assistant/Tutorial (Variable; Variable; 1.00-4.00 Credits)

WORLD LANGUAGES

English as a Second Language

ESL-100 English Writing and Composition (Fall; Yearly; 3.00 Credits) The focus of this course is gaining fluency and confidence in written communication and becoming comfortable as writers. The process of writing multiple drafts through revision will be applied to weekly one-page reaction papers and three longer essays.

ESL-101 Listening and Speaking (Fall; Yearly; 3.00 Credits) The focus of this course is developing English for academic and social situations. Students will improve their speaking and listening abilities in the classroom through group and pair activities, pronunciation practice, and project work. Opportunities to interact with native English speakers outside of the classroom are presented and encouraged through surveys, interviews, a listening log and informal conversation. Students will also be required to participate in the Conversation Partner Program.

ESL-102 Reading and Study Skills (Fall; Yearly; 3.00 Credits) The focus of this course is building reading skills and strategies needed to understand and discuss short articles as well as longer reading assignments. These skills include improving reading rate, building comprehension, and expanding student's vocabulary. This course also focuses on developing the skills required for success in the classroom: managing time effectively, adjusting learning styles, producing spoken and written summaries, note-taking, etc.

ESL-103 Grammar in Use-Level 1 (Fall; Yearly; 3.00 Credits) The focus of this course is using acceptable and appropriate grammar with speaking and listening. Students will review grammatical structures of the English language through dialogues, interviews and short presentations. Grammar will be presented as a system to help students understand the patterns of the language.

ESL-117A J.C.U.P(jc) (Summer; Yearly; 1.00 Credit) This course will introduce the reading and writing skills important to success as a college student in a North American academic context. Students will learn to critically analyze reading text, and synthesize information into writing assignments while applying research and revision skills. Strategies to improve your reading rate and comprehension, management of time and answering exam questions will be included. Students that register for this course are planning on attending Juniata College.

ESL-117B J.C.U.P(Non-JC) (Summer; Yearly; 1.00 Credit) This course will introduce the reading and writing skills important to success as a college student in a North American academic context. Students will learn to critically analyze reading text, and synthesize information into writing assignments while applying re-

search and revision skills. Strategies to improve your reading rate and comprehension, management of time and answering exam questions will be included. Students who register for this course will not be attending Juniata College.

ESL-118A Crossing Cultures(JC) (Summer; Yearly; 1.00 Credit) This course focuses on cultural learning-an ongoing process of communicating and interacting with individuals from other cultural backgrounds. Students will become more aware of themselves as cultural beings and learn about intercultural phenomena that will help them to interact in culture different from their own. The culture and expectations of the American college/university system will also be discussed. Students registering for this course are planning on attending Juniata College.

ESL-118B Crossing Cultures(Non-JC) (Summer; Yearly; 1.00 Credit) This course focuses on cultural learning-an ongoing process of communicating and interacting with individuals from other cultural backgrounds. Students will become more aware of themselves as cultural beings and learn about intercultural phenomena that will help them to interact in culture different from their own. The culture and expectations of the American college/university system will also be discussed. Students registering for this course are not planning on attending Juniata College.

ESL-119A Communicating English(JC) (Summer; Yearly; 1.00 Credit) Students will improve ability to understand English and build confidence and fluency in speaking. Examine conversational strategies such as how to begin and end a conversation, active listening, participation in a class discussion and norms of turn-taking in a conversation. Students will survey local people and give a formal oral presentation as part of a group community research project. Students registering for this course are planning on attending Juniata College.

ESL-119B Communicating English(Non JC) (Summer; Yearly; 1.00 Credit) Students will improve ability to understand English and build confidence and fluency in speaking. Examine conversational strategies such as how to begin and end a conversation, active listening, participation in a class discussion and norms of turn-taking in a conversation. Students will survey local people and give a formal oral presentation as part of a group community research project. Students registering for this course are not planning on attending Juniata College.

ESL-150 Academic Writing (Either Semester; Yearly; 3.00 Credits) The focus of this course is developing writing fluency, as well as helping students find their own writing styles. Students will explore and apply the writing process, including brainstorming, organizing, writing drafts, proofreading, and revising. In and out of class activities will include reviewing and analyzing their own writing as well as that of their classmates, organizing a portfolio, and writing three main essays exploring different academic writing forms.

ESL-151 Conversation and Discussion (Fall & Spring; Yearly; 3.00 Credits) The focus of this course is learning and strengthening the skills of conversation and discussion often used on the campuses of North American colleges and universities. Students will more fully develop awareness of different academic and social situations which will require different levels of politeness and personal attention. Activities will include a reflective listening journal, note taking, and in-class presentations/speeches.

ESL-152 Reading and Vocabulary Development (Fall & Spring; Yearly; 3.00 Credits) The focus of this course is developing specific strategies for improving reading comprehension and rate by using authentic materials: media and college-related texts. Vocabulary development will be an important component of the class, so that the students are better able to understand complex written information. Through on-campus interviews and discussion groups, students will understand the norms and expectations of the U.S. academic environment.

ESL-153 Grammar in Use-Level II (Either Semester; Yearly; 3.00 Credits) The focus of this course is improving knowledge and use of written grammar as it applies to North American colleges and universities. Through the student's writings various grammatical structures will be explicitly examined, practiced, and applied. Although the focus of the course is grammar in writing, spoken grammar will also be covered through class discussions.

ESL-155 Clear Speech (Either Semester; Yearly; 1.00 Credit) The focus of this course is improving English pronunciation with an introduction to U.S. accent variations and other factors influencing cross-cultural communication. Students will identify individual pronunciation features such as specific sounds, stress, intonation, rhythm, etc. Students will work to achieve greater comfort and clarity with spoken English.

ESL-170 Academic Writing II (Fall & Spring; All Years; 3.00 Credits) The focus of this course is on improving academic writing skills needed to write more structured and complex essays in English. This course will guide students from more formulaic writing to more comprehensive writing by developing skills to express arguments clearly and with strong support. Timed-writings and peer-evaluations are strong components of the course as well.

ESL-179 Academic Writing II: Lab (Fall & Spring; Yearly; 1.00 Credit) This course, in combination with ESL 170, will develop your academic writing skills through a focus on writing process. You will focus on the stages of brainstorming, topic selection, outlining, sourcing, composing and editing. Through close interaction with the teacher and assistants, you will learn the skills to be able to write more complex and expressive essays in English.

ESL-180 ESL CWS Lab (Fall & Spring; Yearly; 1.00 Credit) This course is for first semester students in ESL 170 High Intermediate Academic Writing II and ESL 250 Advanced College Writing. The ESL students in this one credit course will participate in a regular EN110 CWS Lab with other first semester Juniata students. The purpose is to allow the ESL students access to the same introductory information and experiences offered all other Juniata students. Students who successfully complete this course will have the option of not completing the lab requirements when they take EN109 or EN110. Corequisite: ESL170 or ESL250.

ESL-192 Advanced ESL Reading (Fall & Spring; Yearly; 3.00 Credits) ESL 192 Advanced ESL Reading is an integrated skills content-based course designed to strengthen the development of college level reading skills to allow students to successfully navigate readings in academic courses. Students will work with an authentic textbook and supplemental materials to explore various text modes, strategies of understanding, and methods of meaning negotiation. Pre-requisites: ESL152 or permission.

ESL-199 Special Topics (Either Semester; Variable; 1.00-4.00

Credits) The IEP can offer special courses based on student and program needs.

ESL-200 Amer: Ntn of Immigrants (Fall & Spring; Yearly; 3.00 Credits) The focus of this content-based course is exploring American values and the changing influences of different immigrant groups to America. The language focus is applying reading and writing skills, developing group interaction skills, and improving listening and speaking skills. Students also broaden their understanding of American culture by participating in a weekly volunteer project and by working with American reading partners.

ESL-201 Egg to Ancestor: a Study of Culture (Spring; Yearly; 3.00 Credits) The focus of this content-based course is exploring life stages beginning with birth and ending with death as these ideas relate to the student's own and other cultures. Through the content, students will study and practice a wide variety of English language learning topics. American reading partners enrich the student's cultural understanding.

ESL-202 Advanced ESL Reading (Fall & Spring; Yearly; 3.00 Credits; SW-GE) ESL 202: Advanced ESL Reading is designed to strengthen college level reading skills and help students learn to analyze readings from multiple points of view. Novels and other texts will provide the context for us to articulate and contrast the values, beliefs, or practices of different cultures and describe global challenges and ways different cultures address them.

ESL-211 Advanced Listening and Speaking Seminar (Either Semester; Yearly; 3.00 Credits; CS,SW-GE) High-level listening and speaking skills are needed to participate in North American college classrooms. This course is linked with a 3-credit, 100-level course and students earn credits for both courses. Through group discussion, oral presentations, video and an off-campus lab with Language in Motion, students improve their language skills and gain an understanding of content. Requisites: Take a linked 100-level course (speak to instructor).

ESL-212 Advanced College Reading: Mockingbirds Abound (Either Semester; Yearly; 3.00 Credits; CW) The focus of this course is exploring racism and discrimination in the deep south of the US from slavery to the 1960s. Students refine and practice reading skills and strategies necessary to understand authentic texts of increasing complexity. These skills include improving reading rate, applying new vocabulary in short weekly essay quizzes, and analyzing materials critically. Students read one novel and submit weekly written critical analyses on related articles, films, and lectures. They also participate in a book club with native English speakers which they regularly reflect upon in a written journal.

ESL-250 College Writing (Either Semester; Yearly; 3.00 Credits; CW) The focus of this course is to enable students to write proficiently and confidently at a high level equal to American college students. Students will complete four essays which represent those most frequently written by college students. They will learn specific organizational strategies and elements of style which match North American academic expectations. Multiple revisions will be complemented by conferences with the instructor, Writing Center tutors, and peer-editing.

ESL-259 College Writing: Lab (Fall & Spring; All Years; 1.00 Credit) This course will improve your academic writing skills by developing your written process. In collaboration with the teachers and

assistants, you will work on essays from ESL 250 focusing on the many stages of writing, including brainstorming, outlining, sourcing, composing, editing, re-writing, and peer-review. You will learn the process to write more complex and expressive essays in English.

ESL-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) The IEP can offer special courses based on student and program needs.

ESL-TUT ESL Teaching Assistant (1.00-4.00 Credits)

Chinese

CN-110 Chinese I (Fall; Yearly; 4.00 Credits; H,I,SW-GE) Begins the introductory phase of acquiring a functional proficiency in modern Chinese. Special attention is paid to spoken Chinese.

CN-120 Chinese II (Spring; Yearly; 4.00 Credits; H,I,CS,SW-GE) CHINESE 120, A CONTINUATION OF 110, IS THE SECOND HALF OF A YEAR-LONG BEGINNING LEVEL COURSE IN MODERN STANDARD (MANDARIN) CHINESE. THIS COURSE IS DESIGNED FOR STUDENTS WHO HAVE COMPLETED ONE SEMESTER OF COLLEGE-LEVEL CHINESE OR EQUIVALENT. ITS GOAL IS TO LAY A GOOD FOUNDATION FOR FURTHER STUDY, AND TO STRIVE FOR AN ALL-ROUND DEVELOPMENT OF COMMUNICATIVE COMPETENCE IN LISTENING, SPEAKING, READING AND WRITING IN MANDARIN CHINESE IN THE CONEXT OF CHINESE CULTURE. PREREQ: CN110 or LANGUAGE PLACEMENT RESULTS.

CN-210 Chinese III (Fall; Yearly; 3.00 Credits; H,I,CS,SW-GE) Chinese 210 is the third part of a four-semester introductory sequence. This course is designed to further develop listening, speaking, reading and writing skills in Chinese. It will continue to train students in pronunciation and tone accuracy, to help them review and strengthen the basic syntax and grammar, build a working vocabulary around various daily situations, and further enhance their understanding of Chinese life and culture. Pre-req: CN110 and 120, or placement test results.

CN-220 Chinese IV (Spring; Yearly; 3.00 Credits; H,I,CS,SW-GE) Chinese 220 is the second part of the Intermediate Standard Mandarin Chinese course. To attend this course, successful completion of Chinese 110, 120, and 210 or equivalent are required. this course will continue to focus on oral proficiency as well as on the further development of reading, writing, and listening skills in the context of Chinese Culture. Students will attain approximately the Intermediate-low level on the ACTFL-ETS (American Council on the Teaching of Foreign Languages) proficiency scale. Prerequisites: CN110 and CN120 and CN210.

CN-330 Advanced Chinese (Fall; Variable; 3.00 Credits; I,H,CS,SW-GE) This is a high-intermediate to advanced Chinese language conversation course that also integrates Chinese reading and writing skills. The course uses videos, audio clips and textbook readings to present different cultural, social, linguistic, and economics topics in Chinese language. Students will gain a deeper understanding of both Chinese language and modern Chinese society. Prerequisites: CN110 and CN120 and CN210 and CN220.

CN-399 Special Topics (Variable; Variable; 3.00 Credits; H,I) Allows departments to offer topics not normally taught. Fees and requisites change by topic.

French

FR-110 French I (Fall & Spring; Yearly; 4.00 Credits; H,I,SW-GE) Emphasizes the four communicative skills (speaking, reading, writing, and listening) focusing on the context of everyday life. Note: " Students may receive H or I credit provided that they have not taken more than two years of the language at the secondary-school level.

FR-120 French II (Spring; Yearly; 4.00 Credits; H,I,CS,SW-GE) This class is intended for students who have completed FR 110 or its equivalent. In addition to learning and practicing basic communication skills in French, students will study some of the cultural foundations and practices of the French-speaking world. Instruction is entirely in French. PRE-REQ: FR 110 or equivalent.

FR-210 French III (Fall & Spring; Yearly; 3.00 Credits; H,I,CS,SW-GE) This is the third course in a the three-semester sequence of beginning and intermediate French. Students will learn and practice more advanced grammatical structures and vocabulary to communicate more spontaneously and fluently with other speakers of French. PRE-REQ: French 120 or equivalent.

FR-230 Conversation (Spring; Yearly; 3.00 Credits; H,I,CS,SW-GE) This course focuses on developing the speaking and listening skills of students of French. Students will acquire the language structures and vocabulary to interact with fluent or native speakers of French on a variety of topics without strain for either party. PRE-REQ: FR 210 or equivalent.

FR-260 French Civilization and Culture (Either Semester; Variable; 3.00 Credits; H,I,CS,SW-GE) An overview of the French culture and civilization in language, art, literature, history, and ideas. Prerequisites: FR210 or equivalent.

FR-270 Francophone Civilization and Culture II (Either Semester; Odd Years; 3.00 Credits; H,I,CS,SW-GE) An in-depth introduction to the history and influence of French culture outside Europe. Students will gain a general knowledge of contemporary Francophone cultures that exist throughout the world. Prerequisite: FR210 or equivalent.

FR-279 Sexuality and Literature (Variable; Variable; 3.00 Credits; I,H,CA,SW-ER) This course uses literary texts as a critical lens to analyze and critique sexual ethics in different cultural and historical contexts or situations. The course is conducted as a seminar with entertaining, thought-provoking reading assignments and lively classroom discussions. No knowledge of the French language is required to enroll in this course.

FR-299 Special Topics (Variable; Variable; 1.00-3.00 Credits) Allows departments to offer subjects not normally taught. Prerequisites and fees vary by topic.

FR-326 French Cinema (Either Semester; Yearly; 4.00 Credits; F,I,H,CW) An overview of the history of French Cinema and various schools of film analysis. Participants in this course view and analyze major examples of French cinema from its origins to today. Discussions are in English. Papers may be written in English or French.

FR-331 The Craft of Translation (Variable; Variable; 3.00 Credits; H,I,CW,SW-GE) This course introduces high-intermediate and

advanced students of French to the formal technics and art of written translation. Students must have completed two 200 level courses taught in French or have instructor permission prior to enrollment.

FR-345 Women in French Culture (Fall & Spring; Yearly; 3.00 Credits; CA,I,H,CW) An introduction to the major currents of contemporary French feminism. All readings are in the translation and discussions are in English.

FR-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Provides courses not covered by the regular offerings. These are developed to meet the needs of students of advanced standing and included themes in Medieval & Renaissance Literature and French Women Writers.

FR-450 Research Project in French (Fall & Spring; Yearly; 3.00 Credits; H,I,CS) An independent research project or thesis which will be designed by the student with the assistance of the instructor. Throughout the semester, the student will research his/her topic and submit a final paper or thesis to be defended at the end of the semester Prerequisites: three 300 level French courses and permission, or a year of study abroad and permission.

FR-490 French Internship (Variable; Variable; 2.00-9.00 Credits) See catalog. Corequisite: FR495

FR-495 FR Internship Seminar (Variable; Variable; 2.00-6.00 Credits) See catalog. Corequisite: FR490

FR-TUT French Teaching Assistant (Variable; Variable; 1.00-4.00 Credits; H,I) See catalog for description.

German

GR-108B Vienna Intensive German (Summer; Yearly; 4.00 Credits; I,H,SW-GE) This BCA-operated course provides four weeks of intensive language instruction by native speakers at the Internationale Kulturinstitut Wien (iki) language school in Vienna, Austria. No prior knowledge of German is required. All levels of German are available, from beginning to advanced. Corequisite: Participants must concurrently enroll in GR208A, "Vienna: Crossroads of Europe," a cultural studies course taught in German and English.

GR-109 Intensive German Program I (Summer; Yearly; 4.00 Credits; I,H,SW-GE) This program provides four or five weeks of intensive language instruction by native speakers at the KAPITO language school in Muenster, Germany. All levels of German are available, from beginning to advanced. In addition, all students participate in three to four extra-curricular activities with a cultural focus per week. Note: A special course fee is applied.

GR-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer courses not normally taught. Prerequisites and fees vary by course.

GR-199A German Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer courses not normally taught. Prerequisites and fees vary by course.

GR-199B German Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer courses not normally taught. Prerequisites and fees vary by course.

GR-208A Vienna: Crossroads of Europe (Summer; Yearly; 3.00 Credits; I,H,SW-GE) This course will introduce students to the history and culture of Vienna, Austria. It focuses on the city as a geographical, political, cultural, and artistic crossroads at the heart of Europe. The course will help students understand how Vienna has been and remains a perpetually emerging and evolving modernity in politics, culture and the arts since the late 19th century. Corequisite: Participants must concurrently enroll in either GR108B, GR208B, or GR308B (based on their German proficiency level).

GR-208B Vienna Intensive German (Summer; Yearly; 4.00 Credits; I,H,SW-GE) This BCA-operated course provides four weeks of intensive language instruction by native speakers at the Internationale Kulturinstitut Wien (iki) language school in Vienna, Austria. No prior knowledge of German is required. All levels of German are available, from beginning to advanced. Corequisite: Participants must concurrently enroll in GR208A, "Vienna: Crossroads of Europe," a cultural studies course taught in German and English.

GR-209 Intensive German Program II (Summer; Yearly; 4.00 Credits; I,H,SW-GE) This program provides four or five weeks of intensive language instruction by native speakers at the KAPITO language school in Munster, Germany. All levels of German are available, from beginning to advanced. In addition, all students participate in three to four extra-curricular activities with a cultural focus per week. Note: A special course fee is applied.

GR-210 German III (Fall & Spring; Yearly; 3.00 Credits; H,I,CS,SW-GE) German III is the third part of the four-semester introductory sequence. Its primary goals are to enable students to continue building their proficiency and attain a broader understanding of German culture. Emphasis is placed on the use of the target language in the classroom and the study of culturally authentic materials. Students will achieve greater accuracy with basic language structures. Pre-req: GR120, placement test, or program head's permission. This course is part of the Global Engagement element of the General Education Curriculum, "3. Language Study": Complete at least a 200-level world language course in the target language if continuing previous language study.

GR-220 German IV (Fall & Spring; All Years; 3.00 Credits; CS,H,I,SW-GE) Final part of the four-semester introductory sequence. German IV will expand upon students' existing listening, speaking, reading, and writing skills and further their understanding of contemporary Germanic cultures. Pre-requisite: GR 210, department placement test, or program head's permission. This course is part of the Global Engagement element of the General Education Curriculum, "3. Language Study": Complete at least a 200-level world language course in the target language if continuing previous language study.

GR-232 German Conversation & Composition (Spring; Yearly; 3.00 Credits; I,H,CW,SW-GE) German Composition & Conversation is an intermediate-level course that will expand upon students' existing listening, speaking, reading, and writing skills and further their understanding of contemporary culture of German-speaking countries. Building on skills and vocabulary previously acquired, this course focuses on growing vocabulary, exploring communicative strategies, and increasing oral proficiency via active participation and self-expression in and outside of class. Pre-requisites: GR 210, departmental placement test, or program head's permission.

GR-299 Special Topics (Either Semester; Variable; 3.00-4.00 Cred-

its) Provides courses not covered by the regular offerings. These are developed to meet the needs of students of advanced standing.

GR-299A Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer topics not normally taught. Fees and prerequisites vary by section.

GR-299B Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows departments to offer courses not normally taught. Fees and prerequisites vary by title.

GR-308B Vienna Intensive German (Summer; Yearly; 4.00 Credits; I,H,SW-GE) This BCA-operated course provides four weeks of intensive language instruction by native speakers at the Internationale Kulturinstitut Wien (iki) language school in Vienna, Austria. No prior knowledge of German is required. All levels of German are available, from beginning to advanced. Corequisite: Participants must concurrently enroll in GR208A, "Vienna: Crossroads of Europe," a cultural studies course taught in German and English.

GR-309 Intensive German Program III (Summer; Yearly; 4.00 Credits; I,H,SW-GE) This program provides four or five weeks of intensive language instruction by native speakers at the KAPITO language school in Muenster, Germany. All levels of German are available, from beginning to advanced. In addition, all students participate in three to four extra-curricular activities with a cultural focus per week. Note: A special course fee is applied.

GR-320 Early 20th Century German Literature (Either Semester; Variable; 3.00 Credits; H,I,CS,SW-GE) Examines readings from the works of such authors as B. Brecht, H. Hesse, H. von Hofmannsthal, F. Kafka, T. Mann, F. Wedekind and F. Werfel. Discussion focuses on the complex problems and issues facing modern man in an ever changing world.

GR-399 Special Topics (Either Semester; Variable; 3.00 Credits) Provides courses not covered by the regular offerings. These are developed to meet the needs of students of advanced standing.

GR-399A Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows department to offer topics not normally taught. Fees and prerequisites vary by section.

GR-399B Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows departments to offer topics not normally taught. Fees and prerequisites vary by title.

GR-490 Internship-Need Paperwork (Variable; Variable; 2.00-9.00 Credits) See Catalog.

GR-495 Internship Seminar (Variable; Variable; 2.00-9.00 Credits) See catalog.

Russian

RU-110 Russian I (Fall; Yearly; 4.00 Credits; H,I,SW-GE) The basic introduction to the Russian program: correct speaking, reading and writing on the elementary level. Note:*Students receive H or I credit provided that they have not taken more than two years of the language at the secondary school level.

RU-120 Russian II (Spring; Yearly; 4.00 Credits; H,I,CS,SW-GE) The

continuation of the basic program with more intensive work in correct speaking, reading and writing. Note: advanced placement is by departmental discretion. Prerequisite: RU110.

RU-195 Russian in Russia I (Summer; Yearly; 4.00 Credits; I,H,SW-GE) Summer language study at a site approved by Juniata. Students will be placed at a level appropriate for their knowledge of the language. Prerequisites: Permission of the instructor and CIE.

RU-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Provides individualized instruction in topics not covered by the regular offerings. These are developed to meet the needs of students.

RU-202 Science Fiction the Other Side Europe (Fall; Variable; 3.00 Credits; H,I) Examines the Central European tradition of science fiction as a genre of social commentary and utopian speculation. Writers will include Karel Capek (the inventor of the term "robot"), Evgenii Zamiatin (the author of the model for 1984), Stanislaw Lem (once the best-selling science fiction author in the world), and the Strugatskii brothers. Films will also be discussed. Taught in English.

RU-203 East European Film (Fall; Variable; 4.00 Credits; CA,H,F,CW) Examines the films and writings on film of some of the famous East European directors: Eisenstein and other early Soviets, Czech films in the 1960s, Georgian films of the eighties. Wajda and other Polish filmmakers, and current Russian films.

RU-209 Russian History (Variable; Yearly; 4.00 Credits; CA,CW,H,I,SW-GE) Studies the evolution of the Russian State and peoples from the earliest times. The examination continues through the Bolsheviks' seizure of power and the subsequent development of the USSR as a major world power. Prerequisites: FYC-101, EN-110 or EN-109.

RU-210 Intermediate Russian (Variable; Yearly; 3.00 Credits; H,I,CS,SW-GE) The third course in the Russian-language sequence. Students further develop oral and written proficiency in Russian while learning about Russian life and culture. Prerequisite: RU120.

RU-230 Russian Conversation (Either Semester; Yearly; 3.00 Credits; H,I,CS,SW-GE) The intensive reading of literary and popular texts as a basis for composition and conversation. Prerequisite: RU210.

RU-235 Tolstoy (Spring; Variable; 4.00 Credits; CA,H,I,CW,CS) An examination of Tolstoy's development as a thinker about war and religion and his search for a literary form adequate for the expression of his ideas and moral sense. Readings will include writings on non-resistance to evil. Prerequisite: EN110 or EN109 or another Russian literature course or permission.

RU-240 Dostoevsky (Spring; All Years; 4.00 Credits; CA,H,I,CS,CW,SW-ER) Dostoevsky's search for meaning in a changing modern Russia allows us to understand Russian ethical traditions, contrast communal and individualist ethical traditions, evaluate the claims of faith and reason, evaluate characters' actions, reflect on our own values, and decide what values we should hold. We will read and write about one short work and two novels.

RU-245 Literature and Moral Imagination (Spring; Variable; 4.00 Credits; CA,CW,H,I) The last hundred years brought unprecedented Literature and Moral Imagination examines how Slavic authors

have confronted the realities of devastation and the euphoria of social utopia and drawn hope from the truth-telling and the fundamental link between aesthetics and morality. The course includes work from the recent reentry of the Slavic peoples into the global economy. Prerequisites: EN110 or EN109 or permission. RU345 requires RU230 or permission and Sophomore, Junior, or Senior standing.

RU-250 Russian Short Story (Spring; Variable; 4.00 Credits; CA,H,I,CW) The reading, discussion, and analysis of short stories by major Russian authors: Pushkin, Gogol, Turgenev, Dostoevsky, Tolstoy and Chekhov. Note: taught in English, although Russian language students receive assignments in original texts. Prerequisite: EN110 or EN109 or another Russian literature course or permission.

RU-275 Medicine and Literature (Fall; Yearly; 4.00 Credits; CA,I,H,CW,CTGES,SW-ER) This course uses literary and film depictions of doctors and scientists, and other professionals as a focus for in-depth discussion of the relationship between moral imagination, moral reasoning, and moral judgment and the role they can and should play in our lives as professionals, citizens, and people.

RU-290 Culture in Russia (Summer; Yearly; 3.00 Credits; F,I,H,SW-GE) The study of the culture and history of the city where students are enrolled at a Juniata-approved exchange site. Students' course selections must be approved in advance. Students who want F-credit must take the Russian Art in Petersburg in history and culture options. Prerequisites: Permission of the instructor.

RU-295 Russian in Russia II (Summer; Yearly; 4.00 Credits; I,H,SW-GE) Summer language study at a site approved by Juniata. Students will be placed at a level appropriate for their knowledge of the language. Prerequisites: Permission of the instructor and CIE.

RU-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Provides individualized instruction in topics not covered by the regular offerings. These are developed to meet the needs of students.

RU-303 East European Film (Fall; Variable; 4.00 Credits; CA,H,F,CW) See RU203. Prerequisites: RU-230.

RU-335 Tolstoy (Spring; Variable; 4.00 Credits; CA,I,H,CW,CS) See RU235. Meets with RU235. Additional work is assigned in Russian. Prerequisite: RU235.

RU-340 Dostoevsky (Spring; Variable; 4.00 Credits; CA,H,I,CS,CW,SW-ER) See RU240. Meets with RU240. Additional work is assigned in Russian. Prerequisites: RU230.

RU-345 Literature and Moral Imagination (Spring; Yearly; 4.00 Credits; CA,I,H,CS) See RU245. Meets with RU245 but additional work is assigned in Russian for RU345. Prerequisites: RU230 or permission and Sophomore, Junior or Senior standing.

RU-350 Russian Short Story (Spring; Variable; 4.00 Credits; CA,H,I,CW) See RU250. Meets with RU250. Additional work is assigned in Russian. Prerequisite: RU230 and Permission of the instructor.

RU-395 Russian in Russia III (Summer; Yearly; 4.00 Credits; I,H,SW-GE) Summer language study at a site approved by Juniata. Students will be placed at a level appropriate for their knowledge

of the language. Prerequisites: Permission of the instructor and CIE.

RU-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Provides individualized instruction in topics not covered by the regular offerings. These are developed to meet the needs of students.

RU-450 Senior Research Project I (Fall; Yearly; 3.00 Credits; H,I,CS) Involves two consecutive semesters of study. During the first semester the students will identify the topic of research, prepare a detailed abstract, gather the necessary materials and provide evidence that the bulk of the research has been completed. Students may undertake projects in teaching, literature, culture or linguistics. Other topics may also be possible. Projects may involve the participation of faculty in related disciplines. Prerequisite: Take RU311 or RU321 or RU326 or RU335.

RU-451 Senior Research Project II (Spring; Variable; 3.00 Credits; H,I,CS) A continuation of RU450. During this semester students will complete their project by writing and defending an account of their work. The exact nature of this account will vary according to the nature of the project. However all accounts must be of significant length, reveal a sustained depth of thought, be fully documented, and be defended orally. Prerequisite: RU450.

Spanish

SP-110 Spanish I (Fall & Spring; Yearly; 4.00 Credits; H,I,SW-GE) Emphasizes fundamentals of grammar, pronunciation, and language production. The development of skills in oral comprehension, speaking, writing and reading are stressed. Note: Students receive H or I credit provided that they have not taken more than two years of the language at the secondary school level.

SP-110E Spanish I Summer (Summer; Yearly; 3.00 Credits) This immersion course is offered for high school students (ages 16-18) in Granada, Spain, in conjunction with Global Works summer service programs. Students achieve a proficiency level in Spanish comparable to Spanish I (SP110).

SP-120 Spanish II (Fall & Spring; Yearly; 4.00 Credits; H,I,CS,SW-GE) Spanish 120 is the second part of a three-semester introductory sequence. Its primary goals are to enable students to build their proficiency and attain a broader understanding of Hispanic cultures. Emphasis is placed on the use of the target language in the classroom and the study of culturally authentic materials. Students will achieve greater accuracy with basic language structures. Pre-req: SP110 or placement test.

SP-120E Spanish II Summer (Summer; Yearly; 3.00 Credits) This immersion course is offered for high school students (ages 16-18) in Granada, Spain, in conjunction with Global Works summer service programs. Students achieve a proficiency level in Spanish comparable to Spanish II (SP120).

SP-125 Sp.Immersion I (Orizaba) (Summer; Yearly; 3.00 Credits; H,I) The continued study of the fundamentals of Spanish grammar, pronunciation, and language production, with particular focus on listening comprehension and speaking. Prerequisites: SP120. Note: A special course fee is assessed.

SP-199 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered.

Departments may offer more than one special topic. Prerequisites vary by title.

SP-210 Spanish III (Fall & Spring; Yearly; 3.00 Credits; H,I,CS,SW-GE) Spanish 210 is the third part of a three-semester introductory sequence. Its primary goals are to enable students to build their proficiency and attain a broader understanding of Hispanic cultures. Emphasis is on the use of the target language and the study of culturally authentic materials. Students will achieve greater accuracy with basic language structures. Pre-req: SP-120 or placement results.

SP-215 Mexican Culture (Summer; Yearly; 1.00 Credit; H,I) This course will introduce students to the origin, antecedents, and development of present-day Mexico and will expose them to the diversity of its inhabitants and of their cultural practices and production. Prerequisites: SP120. Corequisite: SP125, SP225 or SP325.

SP-225 Sp.Immersion II (Orizaba) (Summer; Yearly; 3.00 Credits; H,I) An intermediate Spanish language course which reviews the fundamentals of Spanish grammar, pronunciation, and language production, while providing intensive practice that will enable students to achieve mastery of these basic linguistic elements and to further develop their language proficiency. Special emphasis is placed on listening comprehension and speaking. Prerequisites: SP210.

SP-230 Spanish Conversation & Composition (Spring; Yearly; 3.00 Credits; H,I,CW,CS,SW-GE) SP230 focuses on continued learning of Spanish through the practice of speaking and writing. Students discuss short films, readings, and topics of interest from the Hispanic world. Through practice in and outside of class and study of grammatical structures and vocabulary, students will improve their reading and listening comprehension and their speaking and writing competence. Prerequisite: SP210 or placement test results.

SP-235 Intensive Spanish Grammar (Fall; Variable; 3.00 Credits; H,I) This course serves to reinforce the fundamental grammar that students have studied previously and to delve more deeply into certain topics that often prove to be challenging for native English speakers of Spanish. Topics typically of this course include; identifying the building blocks of sentences; identifying verb classes and studying how that information determines the way we construct sentences; analyzing the Spanish pronominal system including, subject and object clitic pronouns; reviewing and expanding upon the use of subordinate clauses introduced in SP210. Prerequisites: SP210.

SP-245 Spanish Phonetics & Phonology (Fall; Yearly; 3.00 Credits; H,I,CS,SW-GE) This course serves as an introduction to the phonetics and phonology of Spanish. The goals of the course include providing students with a theoretical and practical understanding of the system of Spanish sounds, including dialectal variations, as well as strengthening students' Spanish speech in the direction of more native like pronunciation. Prerequisite: SP210.

SP-250 Introduction to Hispanic Literature (Spring; Yearly; 3.00 Credits; H,I,CS,SW-GE) Emphasizes the development of skill in reading Spanish and in literary analysis of selected stories, plays, poems, and essays from Spain and Latin America. Prerequisite: SP210.

SP-255 Contemporary Hispanic Short Fiction (Fall; Variable; 3.00 Credits; H,I,CS,SW-GE) An intensive introduction to reading and analyzing twentieth-century Spanish and Spanish American short narrative. Study of the literary texts enables students to develop a better understanding of and appreciation for Hispanic cultures while continuing to build their Spanish language proficiency. Prerequisite: SP210.

SP-260 Spanish Civilization (Either Semester; Variable; 3.00 Credits; CS,H,I,SW-GE) An introduction to the many facets of Spanish civilization: art, music, history, literature, philosophy and everyday life. Prerequisite: SP210.

SP-265 Contemporary Spain (Spring; Variable; 3.00 Credits; H,I,CS,SW-GE) An intensive introduction to twentieth and twenty-first century Spain. Topics to be studied include: Spain's peaceful transition from dictatorship to democracy, economic development, and social change. Spain's role in the European Union, mass and elite cultural movements and the challenges facing Spain's younger generation. Prerequisites: SP210.

SP-271 Enrichment After-School for Youth-Spanish (Variable; Yearly; 3.00 Credits; SW-LE) Through this Local Engagement course, Juniata students will partner with the Huntingdon Area School District to offer language and culture classes to elementary and middle school students. They will design and deliver after-school course content in a dynamic, fun, after-school program designed to introduce students in grades 3-6 to Spanish and the cultures of Spain and Latin America. The course introduces students to best practices in local engagement, our local community, and the opportunities presented by our community partners. During seven weeks of the class, Juniata Students will teach the twice-a-week lessons at the nearby Standing Stone Elementary School. Must have clearances.

SP-272 Spanish for the Healthcare Professions (Variable; Variable; 4.00 Credits; I,SW-GE) This is a course for students who are interested in further developing their Spanish for practice in a healthcare setting. In the course, students will learn colloquial and formal medical vocabulary. They will review intermediate-level grammatical structures and practice how to properly apply these in a healthcare setting. Videos and interviews with Spanish speakers, a Mexican telenovela, and simulated medical situations are just some of the materials used in this intensive online course. Students entering the course should have intermediate-level Spanish. It is recommended that they have completed two previous 200-level Spanish courses.

SP-275 Art and Activism in Latin America (Fall; Variable; 3.00 Credits; I,H,CS,SW-GE) Studies art—literature, film, music, plastic arts, etc.—that denounces social injustice and seeks to trigger fundamental reforms in Latin American societies. Known as *arte comprometido* or committed art in Latin America, selected violence, economic exploitation, racism, and machismo. The course is conducted in Spanish. Prerequisites: SP210 or by permission of the instructor.

SP-285 Introduction to Latin America (Fall; Variable; 3.00 Credits; H,I,CS,SW-GE) This course offers students an overview of Latin American cultures through the study of their history, geography, literature, and art from the pre-Columbian period to present. The course is conducted in Spanish. Prerequisite: SP210.

SP-299 Special Topics (Variable; Variable; 1.00-4.00 Credits) Allows the department to offer special topics not normally offered. Departments may offer more than one special topic. Prerequisites vary by title.

SP-300 Myth and Magic Realism (Spring; Variable; 3.00 Credits; CA,I,H,SW-GE) Explores the richness and diversity of Hispanic cultures through the study of texts that range from pre-Columbian myths to recent Latin American films. Emphasis will be placed on the analysis of the mytho-magical elements which are used to represent and often times critique aspects of various socio-cultural realities. The course is taught in English, and all course materials will be available in English. Prerequisites: Sophomore, Junior, or Senior standing.

SP-301 Voice for Voiceless-LA Testimonial Narr (Variable; Yearly; 3.00 Credits; CA,I,H,WK-HT) The testimonial genre developed in Latin America during the 1960s to give voice to the voiceless and bear witness to the world of the marginalized and oppressed. A representative sample of testimonial narratives will be read to examine topics such as the testimonial pact established with readers, social realities represented, processes of textual production, and narrative forms incorporated. Text will be read in English translation and the class will be conducted in English. Prereq: FYC-101 or EN-110 or EN-109. (Previous course title: Latin American Testimonio)

SP-305 Advanced Spanish Conversation & Comp (Yearly; 3.00 Credits; I,CW,CS,SW-GE) This course is designed to give students opportunities to develop and practice their Spanish at the intermediate-high and advanced levels of the ACTFL Proficiency Guidelines available at www.actfl.org. At the advanced level, speakers can: (a) narrate and describe in all major time frames (present, past and future), (b) handle a situation with a complication, (c) use connective devices and a variety of subordinate clauses, (d) use circumlocution, and (e) address topics of personal and general interest. At the advanced level, one may also demonstrate conceptual awareness or even partial control of superior level functions from the ACTFL Proficiency Guidelines (e.g., support opinion, hypothesize, discuss topics concretely and abstractly, and handle a linguistically unfamiliar situation). Prerequisite: SP 230.

SP-306 Ecuador: Language, Culture, and Justice (Variable; Variable; 3.00 Credits; SW-GE) This intensive three-week orientation course offered in Ecuador prior to an academic semester of study abroad has two distinct components: 1) A survey of Ecuadorian history, culture, and society and how those relate to issues of conflict and social justice. 2) General Spanish classes that include grammar, writing, conversation, and cultural topics. Instructor permission is required.

SP-325 Spanish Immersion III (Summer; Yearly; 3.00 Credits; H,I) A second intermediate Spanish language course which reviews the fundamentals of Spanish grammar, pronunciation, and language production, exploring the subtleties of features such as preterit-imperfect aspect and the subjunctive mood. Intensive immersion practice will enable students to achieve greater mastery of these elements and to further develop their language proficiency. Prerequisite: SP230 or SP235 or SP245 or SP250 or SP255 or SP260 SP265 or SP275 or SP285.

SP-345 Spanish Phonetics & Phonology (Fall; Variable; 3.00 Credits; H,I,CS,SW-GE) This course serves as an introduction to the pho-

netics and phonology of Spanish. The goals of the course include providing students with a theoretical and practical understanding of the system of Spanish sounds, including dialectal variations, as well as strengthening students' Spanish speech in the direction of more native like pronunciation. Prerequisite: Study abroad experience or permission of the instructor.

SP-355 Contemporary Hispanic Short Fiction (Either Semester; Variable; 3.00 Credits; H,I,CS,SW-GE) Note: Meets with SP255. Additional work is assigned. Prerequisites: SP250 or equivalent and study abroad experience or approval of the instructor.

SP-365 Contemporary Spain (Spring; Variable; 3.00 Credits; H,I,CS,SW-GE) Note: Meets with SP265. Additional work is assigned. Prerequisites: SP250 or SP255 or or SP260 or approval of the instructor.

SP-375 Art and Activism in Latin America (Fall; Variable; 3.00 Credits; I,H,CS,SW-GE) Studies art –literature, film, music, plastic arts, etc.–that denounces social injustice and seeks to trigger fundamental reforms in Latin American societies. Known as *arte comprometido* or committed art in Latin America, selected artistic texts treat topics such as political violence, economic exploitation, racism, and machismo. The course is conducted in Spanish. Prerequisites: SP250 or SP255 or by permission of the instructor.

SP-385 Intro to Latin America (Spring; Variable; 3.00 Credits; I,H,CS,SW-GE) This course focuses on the historical, political, intellectual, artistic, and social aspects of Latin America in order to familiarize students with the main trends in the development of the region. After a review of major historical events, students will explore trends and differences among regions of Latin America. The study focuses on textual readings, but also examines some representative examples of cultural production in the fields of art, literature, music and film. Prerequisite: SP230 or equivalent. Students should not take this course if they already took SP285.

SP-399 Special Topics (Variable; Variable; 1.00-4.00 Credits) Provides courses not covered by the regular offerings. These are developed to meet the needs of students of advanced standing.

SP-400 Contemporary Spanish American Novel (Fall; Variable; 3.00 Credits; H,I,CW,CS,SW-GE) Students continue to develop advanced Spanish language and Hispanic cultural proficiency as well as critical thinking skills through the study of contemporary Spanish American novels. Prerequisite: SP250 or SP255 or permission of the instructor.

SP-401 Gender Fiction in Hispanic Literature (Variable; Variable; 3.00 Credits; I,H,CW,SW-GE) This course, formerly titled *Women in Hispanic Fiction*, examines gender constructs in works by Latin American and Spanish authors. Among the topics that will be examined are the construction of gender and identity roles, historical spheres of participation for men and women, and the changing definition of such identity markers and roles. The course will focus on a broad historical range of literary works, examining how gender identities are presented in these works through their intersectionality with sexuality, class, race, age, and politics. In addition to the primary texts, students read critical essays on gender and discuss films and podcasts that develop topics parallel to those in the texts. Prerequisites: SP-250 or SP-255. (Previous Course Title: *Women in Hispanic Fiction*)

SP-404 Hispanic Metafiction (Alternate Years; Irregular/On Demand; 3.00 Credits; I,H,SW-GE) Metafiction is fiction that, rather than transparent, is opaque. In the metafictional moment, the reader looks at rather than through the fictional illusion. As Patricia Waugh writes in *Metafiction: The Theory and Practice of Self-Conscious Fiction*, Metafictional novels tend to be constructed on the principle of a fundamental and sustained opposition: the construction of a fictional illusion (as in traditional realism) and the laying bare of that illusion. In this course, students engage with the theory of metafiction and study examples from Hispanic fiction, which include works by Allende, Borges, Cortazar, Cervantes, and Garcia Marquez. Prerequisite: SP210 or permission.

SP-405 Cont. Spanish Novel (Either Semester; Variable; 3.00 Credits; H,I,CS,CW,SW-GE) Students continue to develop advanced Spanish language and Hispanic cultural proficiency as well as critical thinking skills through study of contemporary Spanish novels. Prerequisites: SP250 or SP255 or approval of the instructor.

SP-420 Generation of 1898 (Spring; Variable; 3.00 Credits; H,I,CS,SW-GE) In this course, students analyze selected essays, fiction, drama, and poetry of this key group of writers who accomplish a major renovation of Spanish thought and literary forms during the early decades of the twentieth century. Prerequisite: SP250 or SP255 or permission of the instructor.

SP-430 Advanced Spanish Grammar (Spring; Variable; 3.00 Credits; H,I,CS,SW-GE) This course serves to help advanced students gain a better understanding of the meaning of certain grammatical constructions in Spanish by systematically observing and analyzing their use in a variety of communicative contexts. Prerequisite: SP235.

World Languages

WL-201 Language in Motion (Fall & Spring; Yearly; 1.00 Credit; H,I,CS,SW-LE) In this course, international students, study-abroad returnees, students with other international experiences, heritage speakers, and/or upper-level language students expand their knowledge of language and culture, process their own intercultural and language-learning experiences, and enrich local school classrooms. In addition to learning about teaching language and culture and the school context, students develop individual projects for presentation in school classrooms.

WL-202 Language in Motion (Fall & Spring; Yearly; 1.00 Credit; H,I,CS) See WL201 Prerequisites: WL201. The course provides service-learning opportunities for international students, study-abroad returnees, heritage speakers, and upper-level language students to expand their knowledge of language and culture and to enrich local public school classrooms. After meeting with teachers and attending a Special Topics workshop, students will conference with the instructor and host teachers to develop individual projects for presentation in school classrooms. The course is graded pass-fail. Section 02. The course provides service-learning opportunities for international students, study-abroad returnees, heritage speakers, and upper-level language students to expand their knowledge of language and culture and to enrich local public school classrooms. After meeting with teachers and attending a Special Topics workshop, students will conference with the instructor and host teachers to develop individual projects for presentation in school classrooms. Students receive letter grades. Prerequisite: Permission.

WL-203 Language in Motion (Fall & Spring; Yearly; 1.00 Credit; H,I,CS) See WL201. Prerequisites: WL201 and WL202. The course provides opportunities for international students, study-abroad returnees, heritage speakers, and upper-level language students to expand their knowledge of language and culture and to enrich local public school classrooms. After meeting with teachers, students will conference with the instructor and two host teachers to develop individual projects for presentation in school classrooms. The course is graded pass-fail. Section 02. The course provides opportunities for international students, study-abroad returnees, heritage speakers, and upper-level language students to expand their knowledge of language and culture and to enrich local public school classrooms. After meeting with teachers, students will conference with the instructor and two host teachers to develop individual projects for presentation in school classrooms. Students receive letter grades. Prerequisite: Permission.

WL-204 Language in Motion (Fall & Spring; Yearly; 1.00 Credit; H,I,CS) See WL201. The pass-fail course provides opportunities for international students, study-abroad returnees, heritage speakers, and upper-level language students to expand their knowledge of language and culture and to enrich local public school classrooms. After meeting with teachers, students will conference with the instructor and the selected host teacher to develop individual projects for presentation in school classrooms. The course is graded pass-fail. Section 02. The course provides opportunities for international students, study-abroad returnees, heritage speakers, and upper-level language students to expand their knowledge of language and culture and to enrich local public school classrooms. After meeting with teachers, students will conference with the instructor and the selected host teacher to develop individual projects for presentation in school classrooms. Students receive letter grades. Prerequisites: WL201 and WL202 and WL203.

WL-303 Sociolinguistics (Spring; Even Years; 3.00 Credits; CA,H,I) This undergraduate course is meant to encourage you to reflect on how language functions in society. We will consider a subset of topics relevant to sociolinguistics, among them dialect variation (e.g., regional, social, ethnic); language ideology and language prejudice; and linguistic debates in education. We will consider linguistic communities across the United States. Prerequisite: EN110 or EN109 and Junior or Senior standing.

WL-398 Methods for Foreign Language Education (Fall; Yearly; 4.00 Credits; S,CS) This course is for students interested in teaching foreign languages or English as a foreign language or second language (ESL). This course provides a thorough introduction to contemporary theories and methods of language pedagogy. Students seeking K-12 certification in foreign languages may take this course instead of ED420 after studying abroad. It may also be taken by those students who have an interest in teaching English abroad. International students who are here a semester or a year should also consider taking this course. Prerequisites: ED110 and ED111 and ED130 and ED240.

WL-490 World Language Internship (Variable; Variable; 2.00-9.00 Credits; H,I) See "Internships" in the catalog.

WL-495 Internship Seminar (Variable; Variable; 2.00-6.00 Credits; H,I) See "Internships" in catalog.

Graduate

ACCOUNTING

AC-532 Corporate Taxation (Fall; Yearly; 3.00 Credits) This course is intended for graduate students who desire to learn how the IRS code applies to corporations, estates, and trusts. Tax research is emphasized. Prerequisite: The student must have been admitted to the graduate program in accounting at Juniata College.

AC-533 Government and Nonprofit Accounting (Spring; Yearly; 3.00 Credits) Governmental and Nonprofit Accounting is designed to provide an overview of fundamental concepts and practices used in accounting for activities of governmental and non-business organizations. Students will be familiar with recording financial transactions, preparing financial reports, budgeting, auditing, and analyzing the results for federal, state and local governments, colleges and universities, healthcare organizations and other non-profits.

AC-534 Advanced Accounting (Fall; Yearly; 3.00 Credits) This course focuses on accounting theory and problems regarding complex transactions such as consolidations, reporting requirements and international standards. Also, the course will include examination of topics currently under review by the authoritative boards. Prerequisite: Bachelor degree and admission to the Master of Accounting program

AC-535 Auditing (Fall; Yearly; 3.00 Credits) This course provides an in-depth understanding of auditing theory and authoritative guidance. This course will include current auditing issues, including specific requirements for public companies.

AC-536 Federal Taxation of Individuals (Spring; Yearly; 3.00 Credits) Examines the federal income tax structure and its relationship to individuals and sole proprietorships. The course will explore the social, legal, economic, philosophical, and political considerations relevant when designing a tax system.

AC-537 Cost Accounting (Fall; Yearly; 3.00 Credits) An analysis of the use of cost accounting systems to accumulate and allocate costs to support decision-making and managerial control. Emphasis is on solving real business problems. We will also explore socio-economic theories of the firm so that you may better understand the reasons/rationale for the many cost management techniques and procedures used to aid in making business decisions.

AC-538 Forensic Accounting (Spring; Yearly; 3.00 Credits) This course provides an in-depth understanding of auditing theory and authoritative guidance. This course will include current auditing issues, including specific requirements for public companies. (Prerequisite: Bachelor degree and admission to the Master of Accounting program).

AC-539 Accounting Research (Fall & Spring; Yearly; 3.00 Credits) Under the guidance of his/her advisor, all MAC students are required to prepare and present a research paper on a relevant Accounting topic. Although this paper is not a master's thesis, it does encompass significant library research and data collection and may include reports on field research or case studies. Students should work with their primary faculty advisor in the development of the paper and presentation.

AC-563 Financial Markets & institutions (Spring; Odd Years; 3.00 Credits) financial Markets and Institutions is a graduate level economics course. Students develop a deeper understanding of the purpose of financial markets, what is required for them to operate well and why they sometimes fail, and also the important role of monetary policy in the economy. Prerequisites: EB222 and graduate status.

AC-564 Financial Theory & Analysis (Spring; Variable; 3.00 Credits) AC564 Financial Theory & Analysis develops the skills and knowledge you need to effectively evaluate investment choices and put together an appropriate investment portfolio for an individual or an institution. Prerequisites: EB361 and EB211 or ND.SS214.

AC-599 Special Topics (Variable; Variable; 1.00-6.00 Credits) Allows department to offer topics not normally taught. Requisites and fees vary by title.

BIOINFORMATICS

BIN-400 Bioinformatics Fundamentals (Variable; 4.00 Credits; N,CTGES) Bioinformatics is the science of collecting and analyzing complex biological data. It is an interdisciplinary field that develops and applies methods and software tools for understanding biological data. Pre-req: BI-101 or BI-105, BI-102 or BI-121, CH-142, CH-143, CH-144, and CH-145.

BIN-500 Bioinformatics Fundamentals (Fall & Spring; All Years; 4.00 Credits; N) Bioinformatics is the science of collecting and analyzing complex biological data. It is an interdisciplinary field that develops and applies methods and software tools for understanding biological data. Pre-req: BI-105, BI-106, BI-121, BI-122, CH-142, CH-143, CH-242, CH-243

BIN-516 Molecular and Cellular Biology (Either Semester; Yearly; 4.00 Credits) A comprehensive approach to the study of cells, with emphasis on molecular techniques and understanding the primary literature. Analysis of the cell at the molecular level emphasizes a unity in the principles by which cells function. PRE-REQ: BS degree in molecular biology, biochemistry or the permission of the instructor.

BIN-560 Genetic Analysis (Variable; Yearly; 4.00 Credits) Topics covered will include basic and advanced topics in transmission, quantitative and population genetics, with emphasis on analysis. the methods that modern researchers use to discover gene function and molecular basis of adaptive or disease traits and how they are transmitted over generations in model and non-model species. Prereqs: BI 105/BI 106 or BI 101/102 or one year of college Biology.

BIN-580 Advanced Research Methods (Variable; Yearly; 4.00 Credits) This class will provide training in advanced modern molecular wet lab, statistical and/or informatics tools. Bioinformatics skills will be related to assembly, annotation, variant characterization, and/or comparison of eukaryotic genomes and populations. Statistical analyses will be performed in R. Molecular tools may include DNA and RNA isolation, electrophoresis, restriction digests, DNA isolation from gels, PCR, sequencing, next generation sequencing and equipment maintenance. Core bioinformatics learning objectives will receive special attention. General skills in-

clude training students in the process and procedures of conducting meaningful and responsible research in Biology, including: deriving research objectives, experimental design, problem solving skills, responsible conduct.

BIN-581 Bioinformatics Capstone (Variable; Yearly; 4.00 Credits) This culminating experience provides graduate students with the opportunity to engage in an independent, hands-on research experience for an entire semester. The research experience can be with private industry, academia, or the government and must be approved first by Dr. Lamendella. The experience must be immersive in bioinformatics and/or biotechnology, must have a data analysis component and the research project will be disseminated via both a written manuscript and oral presentation.

BIN-600 Environmental Genomics (Variable; Yearly; 4.00 Credits; N) This course will utilize Microbial Community Analysis leveraging high-throughput sequencing technology to identify the microbes present in naturally occurring our man-made ecosystems. Students will learn both molecular and bioinformatics skill sets, as well as microbial ecology principles throughout this course.

BUSINESS ADMINISTRATION

MBA-502 21st Century Leadership (Fall & Spring; Yearly; 3.00 Credits) This graduate level course is designed to strengthen students' leadership abilities by exploring leadership concepts, theories and student's experiences of leading. The role and function of leaders looks very different today than years ago. Change is the norm. Leaders must understand today's challenges and be able to function effectively given a borderless, multicultural, virtual, and diverse group of partners, stakeholders and constituents.

MBA-511 Quantitative Analysis & Research Methods (Variable; Yearly; 3.00 Credits) Quantitative Analysis and Research Methods will examine some of the principle analytical tools for decision-making in business and investigation in the social sciences.

MBA-512 Organizational Behavior (Fall & Spring; Yearly; 3.00 Credits) In this graduate level course students will understand and interpret the theories and professional practices as related to organizational behavior. This will help students to acquire and use vital business knowledge and skills, and will invite students to think critically. Students will be able to explain relevant business, organizational, and leadership terms, facts, and processes. This will help students to acquire and use business knowledge and skills, and will encourage students to identify and transform data into useful information for decision-making. Students will analyze information to inform organizational decisions. This will help students to acquire and use business knowledge and skills, will encourage students to identify and transform data into useful information for decision-making, will force students to think critically, and will help students to recognize and evaluate the broad effects of business decisions. Students will demonstrate professional communication skills. This will assist students, as they move forward into their lives and careers, to communicate professionally. Students, working in teams, will propose solutions to a business or organizational case. This will provide students with the benefit of learning to work as members of teams.

MBA-520 Strategic Marketing Management (Variable; 3.00 Credits) This course focuses on refining students' skills in compre-

hending marketing theories and measuring marketing strategies and seeing how the marketing tactics selected need to be in alignment with strategies, such as the selection of which businesses and segments to compete in, how to allocate resources across businesses, segments, and elements of the marketing mix in a dynamic competitive environment.

MBA-521 Health Economics (Variable; Yearly; 3.00 Credits) Health Economics uses microeconomic principles to better understand the history and current structure of America's healthcare system. Particular attention is paid to special interest group lobbying, ethical concerns, sources of inefficiency in the system and a historical analysis of how America's healthcare system got to its current state.

MBA-523 Managerial Economics (Variable; Yearly; 3.00 Credits) Microeconomics is crucial to understanding the environment in which a manager operates, and as such facilitates better decisions under uncertainty. The main goal of this graduate level course is to employ microeconomic models to guide business decisions and to analyze industries. Undergirding this goal is crystallizing one's understanding of the ethical tradition of the mainstream Neoclassical economic framework and other ethical traditions that critique the Neoclassical tradition.

MBA-531 Profsnl Ethics & Social Respsnblty (Fall & Spring; Yearly; 3.00 Credits) This graduate level course examines the responsibilities of management and senior executives as they lead organizations. The course will focus on stakeholder management, corporate social responsibility, ethics and morality, sustainable development. Students will learn to analyze, question critically, challenge and change ethical and moral standards, priorities, points of trade-off and compromise to be applied to business and professional behavior.

MBA-532 Financial Reporting (Variable; Yearly; 3.00 Credits) The course examines current practices in corporate financial reporting and fundamental issues related to asset valuation and income determination. The emphasis is on financial statement analysis and interpretation of financial disclosures to help improve risk assessment, forecasting, and decision-making.

MBA-537 Strategic Cost Management (Fall; Yearly; 3.00 Credits) An analysis of the use of cost accounting systems to accumulate and allocate costs to support decision-making and managerial control. Emphasis is on solving real business problems. We will also explore socio-economic theories of the firm so that you may better understand the reasons/rationale for the many cost management techniques and procedures used to aid in making business decisions.

MBA-541 Operations & Information Mgmt (Variable; Yearly; 3.00 Credits) Operations and Information Management is designed to expose you to many of the widely accepted quantitative and qualitative methods for solving a wide range of business problems.

MBA-542 Entrepreneurial Management (Variable; Yearly; 3.00 Credits) Entrepreneurial Management is intended for graduate students who are interested in exploring the world of entrepreneurship and innovation for the purposes of starting their own venture (venture creation) or helping existing organizations to develop new business opportunities (intrapreneurship). The course is designed to develop critical thinking and problem-solving concepts

and promote self-exploration through the investigation and implementation of real business opportunities. The goal is to provide experiential and applied learning opportunities that develop the mindset, skills and competencies that enable students to create their own opportunities and function as innovative leaders in entrepreneurial or high potential firms.

MBA-561 Healthcare Operations (Variable; Variable; 3.00 Credits) To understand operations' role in healthcare, it is important to appreciate the complexity of the healthcare industry and current trends that affect healthcare organizations from an operational perspective. Changes include new regulatory requirements, payment arrangements, technology, patient expectations, and provider recruitment challenges. Operations leadership must work to balance these shifting-and sometimes conflicting-priorities while 'keeping the lights on' and continuing to seek new efficiencies, while meeting increasingly competitive quality and performance metrics.

MBA-562 Healthcare Financial Management (Variable; Yearly; 3.00 Credits) In this course, students will examine the key factors impacting financial management of health care organizations. The course will discuss tools and techniques related to healthcare financial management. Students will learn to analyze financial data of these organizations, with particular emphasis on the budgeting process and cost controls.

MBA-563 Healthcare Strategy (Variable; Yearly; 3.00 Credits) This course is designed to enable an understanding of competitive strategy in a rapidly changing healthcare industry. The course focuses on understanding strategy and market structure, and discussing common business models and strategies for growth, integration, and alliance in a healthcare setting. Class members will discuss the development and selection of an organizational strategy and leadership of strategic planning and implementation processes. With successful completion of the course, students will be able to articulate the importance of identifying stakeholders, values, mission and vision for an organization, and to identify internal and external environmental factors and issues that impact strategic and business planning and performance.

MBA-571 Strategic HR Mgmt & People Analytics (Variable; Yearly; 3.00 Credits) This graduate level course examines the fundamental issues behind current theory, techniques and practices encountered in human resource management.

MBA-580 Project Mgmt and Cntg (Variable; Yearly; 3.00 Credits) MBA 580 examines the challenges of providing project management in the information age of global and cultural contexts. Project management as manifested in today's workplace provides both opportunity and great responsibility. The role and function of project managers looks very different today than years ago. Change is the norm. Project managers must understand today's challenges and be able to function effectively given a borderless, multicultural, virtual, and diverse group of team members.

MBA-590 International Business Strategy (Fall & Spring; Yearly; 3.00 Credits) MBA 590 is an advanced level international business strategy course that focuses on the development of skills to understand a variety of business issues that professional managers face when managing organizations in international markets. Students will first develop an understanding of the conceptual frameworks that are the cornerstones for establishing global business-

es. Specifically, the course will explore matters related to politics, laws, economics, cultures, ethics and norms that will affect how business professionals operate organizations in a global market. Students will be expected to learn tools relevant to international trade and investment that are critical to multinational enterprises (MNEs). Some of the key topics we will explore in this course includes entry mode choice, organizational architecture design, internal control and incentive mechanisms; and assessing the challenges of global citizenship, ethical behavior and corporate social responsibility for international business.

DATA SCIENCE

DS-110 Intro to Data Science (Fall; Yearly; 3.00 Credits; N) This course introduces the student to the emerging field of data science through the presentation of basic math and statistics principles, an introduction to the computer tools and software commonly used to perform the data analytics, and a general overview of the machine learning techniques commonly applied to datasets for knowledge discovery. The students will identify a dataset for a final project that will require them to perform preparation, cleaning, simple visualization and analysis of the data with such tools as Excel and R. Understanding the varied nature of data, their acquisition and preliminary analysis provides the requisite skills to succeed in further study and application of the data science field. Prerequisite: comfort with pre-calculus topics and use of computers.

DS-210 Data Acquisition (Fall & Spring; All Years; 3.00 Credits; N) Students will understand how to access various data types and sources, from flat file formats to databases to big storage data architecture. Students will perform transformations, cleaning, and merging of datasets in preparation for data mining and analysis. PRE-REQ: CS 110 and DS 110.

DS-352 Machine Learning (Fall; Variable; 3.00 Credits; N) This course considers the use of machine learning (ML) and data mining (DM) algorithms for the data scientist to discover information embedded in datasets from the simple tables through complex and big data sets. Topics include ML and DM techniques such as classification, clustering, predictive and statistical modeling using tools such as R, Matlab, Weka and others. Simple visualization and data exploration will be covered in support of the DM. Software techniques implemented the emerging storage and hardware structures are introduced for handling big data. Prerequisite: CS 110, DS 110, and an approved statistics course: MA 220, BI 305, PY 214 or EB 211.

DS-375 Big Data (Variable; Yearly; 3.00 Credits; N) This course considers the management and processing of large data sets, structured, semi-structured, and unstructured. The course focuses on modern, big data platforms such as Hadoop and NoSQL frameworks. Students will gain experience using a variety of programming tools and paradigms for manipulating big data sets on local servers and cloud platforms. Prerequisites: DS 110 Intro to Data Science and CS 370 Database Management Systems

DS-490 Data Science Internship (Variable; Yearly; 2.00-9.00 Credits) See Internship in the catalog. Requires instructor permission. Corequisite: DS-495

DS-495 Internship Seminar (Variable; Yearly; 2.00-6.00 Credits)

See Internship in the catalog. Requires instructor permission. Corequisite: DS-490

DS-500 Data Science Fundamentals (Fall & Spring; Yearly; 4.00 Credits) A graduate level introduction to data science through a focus on the language R. Support tools and libraries such as Rstudio and the tidyverse will be emphasized. Students will complete the data science boot camp (a weekend in person intensive or online equivalent) at the start of this online course.

DS-510 Computer Science Fundamentals (Variable; Variable; 4.00 Credits) A graduate-level introduction to Computer Science Fundamentals through a focus on the Python language. Students will complete the data science boot camp (a weekend in-person intensive or online equivalent) at the start of this online course.

DS-516 Mathematics Fundamentals (Variable; Yearly; 3.00 Credits) Selected topics of discrete mathematics and linear algebra related to data science analysis techniques and algorithms.

DS-520 Statistics Fundamentals (Variable; Yearly; 3.00 Credits) Overview of basic statistical techniques including descriptive statistics, hypothesis testing, and regression.

DS-525 Data Acquisition & Visualization (Variable; Yearly; 3.00 Credits) A graduate-level introduction to retrieving, cleaning, and visualizing data from widely varied sources and formats. The student will use common data science languages and tools for extraction, transformation, loading and visualizing data sets. Project presentations will have an emphasis on communication skills. Tableau visualization tools and Python libraries are used.

DS-530 Multivariate Techniques (Variable; Yearly; 3.00 Credits) Multivariate statistical techniques including multivariate regression, logistic regression, and dimension reduction techniques. Students will get hands-on experience applying the topics covered to real datasets using R, a powerful and popular open-source statistical computing language. Prereqs: DS-516 and DS-520.

DS-552 Data Mining (Variable; Yearly; 3.00 Credits) This course considers the use of machine learning (ML) and data mining (DM) algorithms for the data scientist to discover information embedded in wide-ranging datasets, from the simple tables to complex data sets and big data situations. Topics include ML and DM techniques such as classification, clustering, predictive and statistical modeling using tools such as R, Python, Matlab, Weka and others. Prerequisite: DS-500, DS-510, or by permission

DS-570 Database Systems (Variable; Yearly; 3.00 Credits) This course focuses on database design and relational structures, data warehousing and access through SQL. Students will use SQL to create and pull data from database systems. NoSQL and data warehousing are also covered to give students the necessary background in database systems. Pre-Req: DS-510

DS-575 Big Data Techniques (Variable; Yearly; 3.00 Credits) This course considers the management and processing of large data sets, structured, semi-structured, and unstructured. The course focuses on modern, big data platforms such as Hadoop and NoSQL frameworks. Students will gain experience using a variety of programming tools and paradigms for manipulating big data sets on local servers and cloud platforms. Prerequisite: DS-500 or DS-510

DS-580 Data Science Capstone (Variable; Yearly; 3.00 Credits) Data science practicum requiring completion of a large-scale analysis project of a given data set. Written and oral communication skills emphasized. Prerequisites: DS-500, DS-510, DS-516, and DS-520, or instructor permission.

NON-PROFIT LEADERSHIP

NP-501 Foundations Nonprofit (Variable; Yearly; 3.00 Credits) In this course students will develop an informed understanding of the nature of the nonprofit sector, and the criteria that shape and define nonprofit organizations. Students will explore the factors that have shaped the expansion of nonprofit work and current trends influencing the structure of nonprofit organizations and the roles they play in governance and social change efforts as part of civil society.

NP-502 21st Century Leadership (Variable; Yearly; 3.00 Credits) This course examines the challenges of providing leadership in the information age of global and cultural contexts. Leadership as manifested in today's workplace provides both opportunity, and a great responsibility. The role and function of leaders looks very different today than years ago. Change is the norm. Leaders must understand today's challenges and be able to function effectively given a borderless, multicultural, virtual, and diverse group of partners, stakeholders and constituents.

NP-503 Leading and Managing NP (Variable; Yearly; 3.00 Credits) The past decade has seen an explosion of nonprofit and nongovernmental organizations, and an accompanying expansion of academic research and training about, and for, the field. This course utilizes this information to explore what it means to lead and manage nonprofit organizations. In particular this course will explore leadership roles within a nonprofit organization, the management tasks necessary to develop and run a healthy and successful organization, and examine what leadership looks like outside the organization when working with constituents, stakeholders, partners and the "opposition." Students will learn theories to enhance their capacities to provide effective leadership for nonprofit organizations and explore the leadership skills needed to build partnerships across sectors, respond to emerging trends and challenges, to partner with diverse groups, and to leverage power in order to bring about desired changes.

NP-504 NP Fiscal Management (Variable; Yearly; 3.00 Credits) This is a core course in the Non-Profit Leadership Master's program. The course introduces students to the basics of financial management as applied to non-profit organizations. Students will be invited to learn about the fundamentals of budgeting and accounting for public, health, and not-for-profit organizations. Through readings, webcasts, online chat, assigned problems, case studies, and problem sets, students will gain an understanding of how to use financial information in organizational planning, implementation, control, reporting, and analysis.

NP-508 Research Methods (Fall & Spring; Even Years; 3.00 Credits) Social Science Research Methods is an intensive, graduate-level research methods course with the overarching purpose of preparing students from a variety of POEs to be able to design, implement, and report original social science research in their respective fields of interests.

NP-510 Organizational Communication and Culture (Variable; Yearly; 3.00 Credits) This course blends the exploration of a critical, theoretical understanding of organizational culture with the theories and skills of leadership and change, equipping students with the knowledge and ability to develop a healthy, successful nonprofit organization. As part of this course, students will explore how values shape and define organizational culture, along with management structure, geographic scope, size, client groups and governance structures. Students will develop the theories and skills needed to lead organizational change processes.

NP-520 Fundraising for the NP (Variable; Yearly; 3.00 Credits) This course builds the student's understanding of the sources of income for nonprofit organizations, with a specific focus on the fundamentals of effective resource development and fundraising. Students will explore principles and theories of "best practices" of fundraising, the fundraising process (research, planning, cultivation, solicitation, stewardship, and evolution), and emerging trends in the field (crowd sourcing, public/private partnerships, social investment, and social entrepreneurship). The course also provides students with a clear understanding of the historical, organizational, legal and ethical contexts that define how leaders and managers raise funds to support the organizations mission and vision.

NP-522 Marketing in Info Age (Variable; Yearly; 3.00 Credits) This course examines traditional marketing and how it has adjusted as a result of the challenges and opportunities of marketing in the Information Age. Information technology as manifested in the Internet and other enabling technologies creates a valuable marketing opportunity, and a great peril. As customers and competitors learn the power of real-time information, companies must learn to compete in a world where location and other long-held advantages may be less important.

NP-530 Conflict and Change (Variable; Yearly; 3.00 Credits) This course provides the student with an introduction to the study and conflict and its resolution. We will explore the basic theoretical concepts of the field and apply this knowledge as we learn and practice skills for analyzing and resolving conflicts. The first section of the course examines the causes of conflict and explores methodologies for understanding, analyzing, and responding to them. The second section of the course focuses on skills for waging conflicts productively, and for resolving and transforming them. Throughout the course we will examine conflicts occurring within different contexts that stem from a variety of needs and interests.

NP-540 Social Entrepreneurship (Variable; Yearly; 3.00 Credits) The goal of the class is to expose students to the field of social entrepreneurship, with a particular emphasis on understanding how social entrepreneurs effect positive social change. The course aims to provide you with a comprehensive overview of the emerging field of social entrepreneurship, understand what makes it distinctive from traditional entrepreneurship, and identify and understand the framework needed to start and grow a sustainable social venture. The course will explore the assessment of the variations of social entrepreneurship, from the creation of an organization aimed at creating positive social change, to social responsibility initiatives within the concept of corporate social entrepreneurship.

NP-590 Internship (Variable; Variable; 2.00-9.00 Credits) See cat-

alog

NP-594 Internship Seminar (Variable; Variable; 2.00-6.00 Credits) See catalog

NP-595 Capstone (Variable; Yearly; 3.00-6.00 Credits) The Non-profit MA capstone is designed to provide students with the opportunity to synthesize the materials they have worked with over the course of the program. The capstone provides students with a critical learning opportunity either in the form of public service project where students work with a client organization on a specific challenge or task, or conduct original research. The capstone project provides students with the opportunity to pursue a specific body of knowledge within a particular context, thus honing their expertise in a specific knowledge area, while also developing research skills, gathering and analyzing data, and in the case of a project, the opportunity to apply their knowledge and skills to a real-time need. Students are encouraged to work in teams to complete the capstone project.

NP-599 Special Topics (Variable; Variable; 1.00-6.00 Credits) Allows departments to offer subjects not normally taught.

ORGANIZATIONAL LEADERSHIP

ORG-502 21st Century Leadership (Fall & Spring; Yearly; 3.00 Credits) This graduate level course is designed to strengthen students' leadership abilities by exploring leadership concepts, theories and student's experiences of leading. The role and function of leaders looks very different today than years ago. Change is the norm. Leaders must understand today's challenges and be able to function effectively given a borderless, multicultural, virtual, and diverse group of partners, stakeholders and constituents.

ORG-510 Organizational Communication and Culture (Fall & Spring; Yearly; 3.00 Credits) This graduate level course blends the exploration of a critical, theoretical understanding of organizational culture with the theories and skills of leadership and change, equipping students with the knowledge and ability to develop a healthy, successful nonprofit organization. As part of this course, students will explore how values shape and define organizational culture, along with management structure, geographic scope, size, client groups and governance structures. Students will develop the theories and skills needed to lead organizational change processes.

ORG-511 Quantitative Analysis & Research Methods (Variable; Yearly; 3.00 Credits) Quantitative Analysis and Research Methods will examine some of the principle analytical tools for decision-making in business and investigation in the social sciences.

ORG-512 Organizational Behavior (Fall & Spring; Yearly; 3.00 Credits) In this graduate level course students will understand and interpret the theories and professional practices as related to organizational behavior. This will help students to acquire and use vital business knowledge and skills, and will invite students to think critically. Students will be able to explain relevant business, organizational, and leadership terms, facts, and processes. This will help students to acquire and use business knowledge and skills, and will encourage students to identify and transform data into useful information for decision-making. Students will analyze information to inform organizational decisions. This will help stu-

dents to acquire and use business knowledge and skills, will encourage students to identify and transform data into useful information for decision-making, will force students to think critically, and will help students to recognize and evaluate the broad effects of business decisions. Students will demonstrate professional communication skills. This will assist students, as they move forward into their lives and careers, to communicate professionally. Students, working in teams, will propose solutions to a business or organizational case. This will provide students with the benefit of learning to work as members of teams.

ORG-520 Strategic Marketing Management (Variable; Variable; 3.00 Credits) This course focuses on refining students' skills in comprehending marketing theories and measuring marketing strategies and seeing how the marketing tactics selected need to be in alignment with strategies, such as the selection of which businesses and segments to compete in, how to allocate resources across businesses, segments, and elements of the marketing mix in a dynamic competitive environment.

ORG-530 Conflict and Change (Variable; Yearly; 3.00 Credits) This course provides the student with an introduction to the study and conflict and its resolution. We will explore the basic theoretical concepts of the field and apply this knowledge as we learn and practice skills for analyzing and resolving conflicts. The first section of the course examines the causes of conflict and explores methodologies for understanding, analyzing, and responding to them. The second section of the course focuses on skills for waging conflicts productively, and for resolving and transforming them. Throughout the course we will examine conflicts occurring within different contexts that stem from a variety of needs and interests.

ORG-531 Profsnl Ethics & Social Respsnblty (Fall & Spring; Yearly; 3.00 Credits) This graduate level course examines the responsibilities of management and senior executives as they lead organizations. The course will focus on stakeholder management, corporate social responsibility, ethics and morality, sustainable development. Students will learn to analyze, question critically, challenge and change ethical and moral standards, priorities, points of trade-off and compromise to be applied to business and professional behavior.

ORG-542 Entrepreneurial Management (Variable; Yearly; 3.00 Credits) Entrepreneurial Management is intended for graduate students who are interested in exploring the world of entrepreneurship and innovation for the purposes of starting their own venture (venture creation) or helping existing organizations to develop new business opportunities (intrapreneurship). The course is designed to develop critical thinking and problem-solving concepts and promote self-exploration through the investigation and implementation of real business opportunities. The goal is to provide experiential and applied learning opportunities that develop the mindset, skills and competencies that enable students to create their own opportunities and function as innovative leaders in entrepreneurial or high potential firms.

ORG-571 Strategic HR Mgmt & People Analytics (Variable; Yearly; 3.00 Credits) This graduate level course examines the fundamental issues behind current theory, techniques and practices encountered in human resource management.

ORG-590 International Business Strategy (Fall & Spring; Yearly;

3.00 Credits)

ORG-595 Capstone (Variable; Yearly; 3.00-6.00 Credits) The Organizational Leadership capstone is designed to provide students with the opportunity to synthesize the materials they have worked with over the course of the program. The capstone provides students with a critical learning opportunity either in the form of public service project where students work with a client organization on a specific challenge or task, or conduct original research. The capstone project provides students with the opportunity to pursue a specific body of knowledge within a particular context, thus honing their expertise in a specific knowledge area, while also developing research skills, gathering and analyzing data, and in the case of a project, the opportunity to apply their knowledge and skills to a real-time need. Students are encouraged to work in teams to complete the capstone project.

Academic Policies

Incoming Credit

ADVANCED PLACEMENT CREDIT

Juniata encourages students to pursue additional credits through the Advanced Placement process. Incoming freshmen with scores of 4 or 5 on an Advanced Placement test may be offered Juniata credits. Selected Advanced Placement tests have been designated by the appropriate academic programs as equivalent to one or more Juniata courses. If the student accepts Advanced Placement credit for such a test, the student is then exempt from taking the equivalent course(s) and in fact may not take the course(s) for additional credit. If an Advanced Placement test is not designated equivalent to a Juniata course or courses, general credits in the appropriate division (Natural Sciences, Social Sciences, Arts and Humanities) may still be offered.

Test scores arrive at the end of July and are reviewed by the Registrar's Office. During the first week of school, students will receive a letter in their campus mailboxes with a form that directs them to department chairpersons for discussions about whether they will accept their AP test scores for college credit and/or direct course equivalency. Such meetings should preferably happen during the drop/add period

(the first 7 class days of the semester).

A student who receives a sufficient number of Advanced Placement credits will be granted sophomore status.

To have scores sent to Juniata: Go to www.collegeboard.org or call 1-877-274-6477.

INTERNATIONAL BACCALAUREATE

International Baccalaureate Diploma recipients are granted credit for one full year (30 credits) toward a degree at Juniata. Students who have an IB Diploma normally enter the College with sophomore standing. IB certificate recipients receive course credit for each higher level examination passed with a score of 5 or higher. To receive this credit the student will meet with the appropriate department chair or designee to consider the advantage or disadvantage of accepting credit. IB credits may be counted toward degree requirements.

TRANSFER POLICY

Juniata does not accept in transfer any coursework below a grade of "C-" nor coursework of a strictly technical or remedial nature, nor physical education coursework, nor coursework from a non-regionally accredited institution. Special circumstances may affect the transferability of an individual student record. These cases will be handled on an individual basis and decisions will be based on Juniata's academic policy. An official credit evaluation will be completed by the Office of the Registrar after a student has been admitted to Juniata.

Transfer without a Degree Students transferring without an Associate Degree will have their work evaluated on a course-by-course basis. Courses equivalent to Juniata's curriculum course description will be granted direct course equivalence. Coursework accepted in transfer may be used to meet both liberal arts graduation requirements and Program of Emphasis requirements.

Transfer with an A.A. or an A.S. Degree Juniata currently has a formal transfer agreement with Harrisburg Area Community College (PA), Community College of Allegheny County (Pittsburgh, PA), Cambria County Area Community College (Johnstown, PA), and Keystone College (La Plume, PA).

Students who possess an "AA" or appropriate "AS"

degree from an accredited institution and wish to transfer to Juniata will be granted junior standing. Students would be awarded a minimum of 56 semester hours, a maximum of 60 semester hours, regardless of course equivalence. Courses will be granted direct course equivalence. All Juniata graduation requirements must be met. Coursework accepted in transfer may be used to meet both liberal arts and Program of Emphasis requirements; however, it may take the student more than the remaining 60-64 semester hours to complete all graduation requirements.

TRANSFER CREDIT

Transfer credit is granted only for academically-valid courses in which the student earns a grade of C- or higher. Transfer credit is granted in the form of a comparable course, distribution credit, or elective credit. Credit is only awarded for courses taken at a similarly accredited institution. Students who take courses at schools without a similar regional accreditation must provide syllabi for all courses for individual evaluation by the Registrar's office and departmental review. If the course is too focused or outside our curriculum delivery, no credit will be granted.

Current students wishing to transfer credit back to Juniata must obtain pre-approval by completing a "Request for Clearance of Transfer Credit" form available in the Registrar's Office. On this form, the appropriate department chair will note the comparable Juniata course(s) (consulting as needed with the most recent instructor of the comparable course), and the student's advisors will indicate approval. For courses not deemed comparable with a Juniata offering, decisions will be made by the Registrar with advice from the appropriate department and the Student Academic Development Committee as appropriate. It is the student's responsibility to obtain information about the course and present this information to advisors and the department chair(s).

Students who enter Juniata with fewer than 24 credit hours may apply no more than 15 transfer credits toward a Juniata degree after their initial entry. No more than eight of these 15 credits can be included in the POE. Students who enter Juniata with 24 or more credit hours may transfer credit according to the following chart.

# of credits awarded upon entry	total # transfer credits allowed after entry	language or a placement exam. If a student decides to decline the evaluated level assigned and prefer to take the introductory course, students will be advised that they can not count the course type of H or I for their FISHN requirements. It will be counted as basic general elective credit.	# transfer credits allowed after entry
0 - 23.99	15		8
24 - 53.99		When students enroll in world language courses and plan to study for a semester in the target language and culture on an approved study abroad semester, students can have both requirements of IC/CA waived if they take one course beyond WL0210 in the target language. English speaking placements would not count for this waiver.	
54 - 86.99			
87 or more			

Exceptions may be made for students participating in cooperative programs, study abroad programs, and other Juniata-approved programs. Students who have earned an associate degree elsewhere are awarded credit as indicated in the Admission section of this catalog.

Students taking a leave of absence to study at another institution whether abroad or domestic, that is not a Juniata-approved program, must obtain pre-approval by completing a "Request for Clearance of Transfer Credit" form available in the Registrar's Office. These requests are subject to the guidelines listed above.

Students who have earned an associate degree elsewhere are awarded credit as indicated in the Admission section of this catalog. Students transferring to Juniata from an accredited institution without a degree (including those that previously attended Juniata) are awarded credit as indicated in the Admissions section of this catalog.

TRANSFER CREDIT RESIDENCY POLICY

Students are allowed to transfer credits during their last semester within the provisions of the transfer policy. However, 30 of the last 36 credits must be taken in residence. There are degree requirements that are unique to Juniata and may not be completed elsewhere. Students participating in cooperative programs, study abroad programs, and other Juniata-approved programs are considered to be in residence. Any exceptions to the residency policy must be approved by the Student Academic Development committee.

WORLD LANGUAGE PLACEMENT

In foreign languages, students are placed at the appropriate college level based on their years of high school

Registration

DEFINITION OF A SEMESTER HOUR OF CREDIT

Juniata's guidelines for defining the approximate amount of work required for one semester hour of credit is as follows: For a course composed of classroom instruction, a semester hour of credit would normally involve 14 to 15 meeting times each semester with each lecture class meeting for 50 minutes. For one credit of a laboratory course the student should have three to four hours of laboratory instruction each week of the semester.

For each hour of classroom instruction the student is expected to do two hours of preparation. Therefore, a typical three semester hour credit course over a semester would include 43 to 44 hours of class meetings and 86 to 88 hours of student work out of the classroom

REGISTRATION AND DROP/ADD

Normally students preregister for classes online mid-way through the previous semester, but registration changes can be made during the first seven class days of each semester, known as the drop/add period. During this period students may adjust their schedule by adding and/or dropping classes, and latecomers can register for the semester. Students make changes to their schedules with advisors' approval. Failure to register during the scheduled preregistration may result in a late registration fee of \$50.

FULL-TIME STATUS

A student is regarded as full-time if he or she registers for 12 or more hours of credit in each academic semester. A student who in the course of the semester considers dropping his or her credit load below 12 credit hours should confer with advisors and/or Student Financial Planning to discuss the consequences of this action.

NORMAL COURSE LOAD

The normal course load for freshmen and upper-class students is 30 semester hours of credit per academic year. Normally students who complete an average of 15 credits per semester graduate in four years. Freshmen often opt to take lighter loads during the first few semesters and heavier loads later. Any course load above 18 credits per semester is considered an overload and will have the overload fee applied to the student's account.

OVERLOAD POLICY

In special cases, an upper-class student may register for an overload. An overload charge is made for all credit hours attempted above 18 per academic semester. The upper-class student who wishes to take more than 19 hours of credit must have an outstanding academic record, including satisfactory completion of all courses attempted and must obtain by petition the consent of the Student Academic Development Committee. No student may take more than 21 credit hours per semester.

Excluding advanced placement credit, freshmen normally are not permitted to receive credit for more than 34 credit hours that academic year. A freshman may take more than 18 semester hours of credit only during the second semester and must fulfill two special requirements: (a) satisfactory completion of all first semester courses attempted, and (b) approval by advisors and/or other appropriate faculty as determined by the Registrar.

If a student registers for an overload and then withdraws from the College, a refund will be made according to the refund policy explained under Student Finances. No refunds are given for course withdrawal from an overload after the drop/add period. Some courses extend over more than one term. All courses must be completed, however, within one academic year, not including the summer. All special arrangements for programs must be made in the Registrar's

Office.

CLASS STANDING

Class standing and satisfactory progress are measured on the basis of a student's ability to complete their studies in four years by carrying a normal course load each semester. A student is making satisfactory progress and has achieved the class standing at the semester credit hour intervals as listed below:

Freshman up to 23.99 credit hours
 Sophomore 24 up to 53.99 credit hours
 Junior 54 up to 86.99 credit hours
 Senior 87 and above credit hours

AUDITING COURSES

Persons who wish to audit classes may make arrangements with the Registrar to attend one or more courses without receiving grades or credit. The decision to audit a course must be made by the end of the drop/add period. The transcript does carry notations of audited courses. Permission of the course instructor is necessary and an auditing fee must be paid in the Business Office. This fee is waived for students enrolled in a regular full-time College program, but occasional academic course fees remain in effect (lab and field trip fees, etc.).

REPEATING COURSES

Students who wish to repeat a course must consult with the Registrar. Although credit may not be granted twice for a particular course, there is no limit on the number of times a student can retake a course for an improved grade. Only the highest grade received will be reflected in the student's grade point average.

INDEPENDENT STUDY, CREDIT BY EXAMINATION, TUTORIAL, AND SPECIAL TOPICS COURSES

A student may wish to pursue studies not listed as course offerings. In such a case, independent study may be appropriate. Requests for independent study are handled by Registrar's Office according to policies established and maintained by the Department and Program Committee.

Independent Study

Students applying for an Independent Study must make arrangements with a faculty member and regis-

ter for the course (using forms available in the Registrar's Office and on the Registrar's website) two weeks prior to the semester in which the credit will be earned. The instructor will designate a syllabus, text, or other materials required and will submit to the Registrar an explanation of course requirements (i.e., examinations, papers, and faculty-student conferences). A student may enroll for no more than two Independent Studies in a semester. An Independent Study is considered an upper-level course; no more than two Independent Studies are permitted in a POE. Independent studies will carry no General Education designations.

Credit by Exams

Students may be given credit for some courses without participation in class meetings but by meeting all other requirements of the courses. To determine if a course is available for Credit by Examination (CBE), the student should consult the faculty member who is currently teaching the course. If the course is not currently offered a faculty member who has taught the course at least once in the last three years may conduct the course on a CBE basis. A course may be offered CBE only to full-time Juniata students. CBE is intended to be used as an option when scheduling conflicts prevent a student from scheduling a course required for graduation, which will not be available in any other semester prior to their graduation and cannot be fulfilled by any other course. The decision to offer a course CBE rests solely with the faculty member responsible for the course, since not all courses lend themselves to Credit by Examination (e.g., courses dependent on discussions and field trips and laboratory courses). The faculty member currently responsible for a course is NOT obligated to offer the course CBE in a given semester, as each faculty member must consider their own previously scheduled work load. The deadline for CBE registration is the end of the drop/add period during the semester in which the course is to be taken. Independent Study and CBE courses are considered part of the normal load of a student and, if taken as an overload, are subject to the usual overload fee.

Tutorial

In a tutorial, the faculty instructor and the student work closely on a regularly scheduled basis involving lectures, demonstrations, explanations, and evaluation. The purpose of the tutorial is to enable a student to pursue a study which is too complex either in nature or scope to address as an independent study.

Through regular contact with the instructor, the student will benefit from the instructor's expertise on a highly individualized basis.

During the Summer Session, a student may register for one Independent Study, Credit by Examination, or Tutorial if enrolling concurrently in one regularly offered course.

All forms can be found here: <http://www.juniata.edu/services/registrar/forms/>

Through regular contact with the instructor the student will benefit of his/her expertise on a highly individualized basis. Some tutorials are arranged to assist the faculty with classroom activities and for review sessions for large introductory classes. No pay is associated with students who are earning credit for the course.

Special Topics Courses

Faculty members may offer courses as a "special topic" with the approval of their departmental chair. Special topics courses are numbered as 199, 299, 399, or 499, where the course level is indicated by the first digit. Such courses provide a means for instructors to (1) teach topics which are of timely but ephemeral interest or (2) teach a course on a trial basis. They are expected to be as academically rigorous as designated courses. Special topic courses may be offered three times before a course must be formally approved. Special topics courses may be included in a student's POE, but they may not fulfill general education requirements (see section 3.3.1, I) unless approved to do so by the General Education Committee.

SUMMER AND WINTER SESSIONS

Juniata conducts a Summer Session program designed for a wide variety of students. The course offerings are a subset of those offered during the regular year and are similarly rigorous. During Summer Session, the normal class load is three to six semester hours per four-week term.

It is the student's responsibility to be attentive to the course syllabus and successfully complete the course materials prior to the end date. *Any concerns about course completion should be communicated to the instructor as soon as possible.*

COURSE LIMIT: Summer and Winter Term courses are taught at an accelerated pace. Students may

register for no more than one course during Winter Term 2021. Students wishing to enroll in an additional course should contact the Registrar's Office at registrar@juniata.edu.

COURSE DROP: Students may drop a course up to the published drop deadline and receive full reimbursement. Students must email the faculty instructor and the Registrar's Office at registrar@juniata.edu to drop a course. Dropped courses do not appear on a student's transcript.

COURSE WITHDRAWAL: Students may withdraw from the course from the day after the drop deadline until the course withdrawal deadline that is specified in the course syllabus. *NOTE: Each course's withdrawal deadline varies, so be sure to check the syllabus.* Students must email the faculty instructor and the Registrar's Office at registrar@juniata.edu to withdraw from the course. The course withdrawal will be noted on the student's transcript with a W, however the W does not impact the cumulative GPA. *Lack of participation/log-on is not considered course withdrawal and will result in a final grade of F.* Students will be refunded course tuition and fees on prorated basis.

AUDIT: Summer and Winter Term online courses may not be audited.

Course Offerings

Summer Session academic programs are supervised by the Provost and administered by the Registrar. The number of courses offered and the size of the teaching staff are determined by the Summer Sessions' instructional budget which, in turn, is built upon the expected enrollment.

The Registrar is responsible for developing the schedule for the academic program. Faculty suggestions are solicited when the program is in the planning stages. No faculty member is permitted to teach more than two courses during the Summer unless the Registrar deems it necessary for a balanced academic program and no other qualified instructor is available.

The Academic Dean decides which courses are ultimately offered and will adjudicate difficulties not solved by negotiations with the Registrar.

Courses are expected to meet an average of 14 hours per session per semester hour of credit.

Compensation

The Summer Sessions' budget is established by the Registrar in consultation with the Provost. The salary schedule is approved by the Provost and the President, and the Office of Personnel Services prepares all contracts for the instructional staff.

Faculty who offer tutorials, independent studies, and Credit-by-Examinations during the Summer and those who supervise field work while not on regular academic year contract will be paid a stipend for the work involved in giving such courses. Field work courses may sometimes be offered as a regular part of the Summer program. In these circumstances, the faculty member supervising the field work will be offered a regular contract if there is sufficient student enrollment in the field work course.

UNDERGRADUATE ENROLLMENT IN GRADUATE COURSES

Undergraduate students pursuing a baccalaureate degree at Juniata College may take graduate courses at the 500-level or above, if the student meets all the following eligibility criteria:

- The student has completed a minimum of 90 credits (i.e. holds senior standing) at the undergraduate level
- The student has a minimum GPA of 3.0 overall, including transfer credits
- The student must obtain approval from their adviser and the Director of the Graduate Programs

Additionally,

- Up to nine graduate credits can be taken as an undergraduate student
- Only graduate credits that are in excess of the 120 undergraduate credit requirement can be counted toward an advanced degree
- Graduate courses may count as an elective in the student's undergraduate program if they are not being transferred to the Graduate program. Students may not double count credits toward a graduate and an undergraduate degree.
- Students must complete the course with a B- or better for the credits to be eligible for transfer at a later date to a Juniata College graduate degree program (non-Juniata programs may have their own criteria for accepting transfer credits). Internal transfer of credit is subject to specific graduate program

transfer credit regulations. Graduate courses are not eligible for the pass/no pass option.

An undergraduate student who does not meet the above eligibility requirements may request special permission in writing from the Provost and the Graduate Studies Committee.

Course Policies

CLASS ATTENDANCE

Unless notice is given to the contrary by the course instructor, Juniata College expects every student to attend all classes without fail. Regular attendance of classes is necessary to reasonable progress for most students, and it is assumed that the faculty can stimulate attendance by the skill and imagination displayed in courses.

Faculty members have an obligation to make students aware, in writing, of their policy regarding absences from class, grading criteria, and examination policies. This information should be available during the first four days of the term in order that students may recognize schedule conflicts or prerequisite problems in time to take advantage of the Drop/Add period.

The faculty member is expected at all times to be familiar with the attendance behavior of their students, and should maintain such records as are necessary to achieve this end.

If a student is absent and approaches the faculty member for assistance in making up the missed work, the faculty member is expected to assist in so far as possible if the absence was for one of the following reasons: the student's illness, the illness of an immediate member of the family, a college-approved activity, or some emergency. For other reasons assistance may be given to the student at the discretion of the faculty member. In special cases, the Dean of Students may certify the absence of a student for medical reasons on the request of a faculty member.

A college-approved activity is an educational field trip approved by the Dean, participation in an extracurricular activity approved by the Student Affairs Council, or, on occasion, a special event approved by the Provost.

Field Trips

Juniata recognizes that field trips are important experiential learning events, and encourages faculty whose courses are affected to make every effort to accommodate students whose courses include planned trips.

Faculty wishing to schedule mandatory out-of-class field trips are required to include the field trip dates in the course syllabus prior to the end of the drop/add period.

Absences during Election Campaigns

The participation of students in November elections can be a valuable educational experience. The fourth paragraph of the above policy is adequate to cover absences for this purpose. A student may be excused by the faculty member with the privilege of making up missed work but the student must give prior notice to the faculty member of their intention to be absent for a stated period of time to engage in such activities. If the faculty member wishes to do so, they may require that on return, the student present bona fide evidence validating the reason for the absence.

Cancellation of Classes

Noting the very high number of canceled classes during the week prior to vacations, the faculty has gone on record as condemning the practice of canceling classes on the day before or the day after vacations. Any exceptions should be cleared with the Provost.

GRADING POLICY

For each course faculty members should develop a clear policy on attendance and grading which should be stated unambiguously to the student at the beginning of the course, preferably in the course syllabus. The policy should explain the relative value of class work, field trips, papers, and final examinations. Changes during the term in the system must be announced clearly to the students, preferably in writing.

Although the instructor sets the grading policy, they should not do it arbitrarily, for the policy should represent the best measure of the student's achievement. While setting the grading policy, the instructor should consider their expectations of students in terms of exams, papers, and other coursework. If attendance in the classroom is considered vital to the learning experience of the student, it may enter into the calculation of the grade, but if the course is conducted in such

a manner that the student can progress equally well by completing their assignments whether they attend class or not, then classroom attendance is not a legitimate indicator of the student's progress and should not enter into the computation of the grade.

GRADE DEFINITIONS

Regular Grade Designations

"A" – indicates work of the highest excellence, showing a superior grasp of the content as well as independent and creative thinking in the subject.

"B" – signifies unusual achievement wherein the student reveals exceptional insight and ability.

"C" – is given for satisfactory achievement on the college level where the work of the course has been conscientious and shows no considerable deficiency in either quality or quantity.

"D" – indicates that the work of the course is of less than average or of marginal quality.

"F" – signifies work which is distinctly unsatisfactory at the college level.

The above grades may be qualified by the use of a plus (+) or minus (-). For the permanent record, a grade point average (GPA) is compiled and the GPA appears on the transcript. The following equivalents should be used for calculating the GPA:

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

S = Satisfactory

U = Unsatisfactory

Performance in a few courses is graded as S or U, but in the majority of courses, the grades listed above are given. Only grades of A(-), B(+,-), C(+,-), D(+,-), and S are given credit toward a degree.

AU (Audits)

Performance in audit classes is given a grade of AU. This is given regardless of the students' participation. Audits cannot be changed after the drop/add period and it is up to the faculty to determine at what level a student should participate in their class. There is no withdrawal from audit coursework, if a student stops attending, they will still receive an auditing with no grade or credit.

Irregular Grade Designations

In addition to the regular grade designations, the following irregular grades are used as occasion may demand. The following grades are for individual courses. Irregular grades as a result of leaves of absence are covered under Section 3.1.5.3 Leave of Absence.

I (*incomplete*)

At the discretion of the faculty member involved, a grade of incomplete may be submitted. This option is to be used sparingly, however, and only when the student has given a satisfactory explanation (such as extended illness or accident) for failure to complete a required piece of work. Otherwise, a student receives an F for a course which is not completed. Simple preference on the part of the student for an extension of time is not regarded as sufficient cause for granting an incomplete. Upon the granting of an incomplete, the student must complete the work within three weeks of the beginning of the next semester of the academic year or an F automatically will be recorded. Any exceptions to this policy must be approved in writing by both the instructor and the Registrar.

P/NP (*Pass/No Pass*)

In consultation with their advisors, students may elect to take up to 16 credits on a P/NP basis with a limit of four credits per term. Up to one course, not exceeding 4 credits, in the student's POE and one course, not exceeding 4 credits, in general education may be taken as Pass/No Pass during the student's academic career at Juniata. However, First Year Experience

courses described in Section 3.1.1.I.A of the Faculty Handbook cannot be taken Pass/No Pass. In order to receive a grade of P (Pass), a student must complete the course with a final grade of D- or better. A course grade below D- will result in zero credits for the course and a record of NP (No Pass) on the transcript. P/NP grades are not calculated into the GPA.

Students will have until the end of the drop/add period of the term during which they wish to take a course P/NP to elect the P/NP option. The instructor will not be apprised of the change in grading status. Students wishing to revert to a regular grade for any P/NP course taken at Juniata College can do so by the last day of classes of their graduating semester. Any declaration of P/NP in effect at the end of drop/add will count towards the student's maximum of 16 overall credits allowed under the P/NP policy, even if the student chooses to revert to a regular grade or withdraw from the course.

Individual departments and programs have the academic discretion to identify those courses that may not be taken P/NP. A list of courses that cannot be taken as P/NP will be maintained by the Registrar's office.

Students should consult with their POE advisor to determine whether specific POE classes may be taken P/NP. Students are also urged to discuss the implications of executing the P/NP option with academic advisors as admission to professional programs and/or eligibility for scholarships may be affected.

W (course withdrawal)

A withdrawal grade of W is recorded when a student drops a course after the official drop/add period at the beginning of the semester and before the withdrawal deadline. W grades are not calculated into the GPA.

A student may withdraw from a course, with documented consultation with the student's current advisors, up to the withdrawal date listed on the course syllabus. If the instructor has not indicated a final withdrawal date on the syllabus, the default deadline reverts to noon on the last day of classes that semester.

Withdrawals will be considered complete when they are filed with the Office of the Registrar. A student who does not complete the withdrawal process will receive the grade currently earned at the time the course instructor submits final grades.

Withdrawal from courses may impact financial aid and/or inter-collegiate athletic eligibility. Students are encouraged to discuss these implications with family, academic advisors, coaches, and counselors from Financial Planning or the Dean of Students Office.

Exceptions to this policy may be made via appeal to the Student Academic Development Committee.

If a student withdraws from the College during a semester with the Dean of Student's approval, the Registrar will enter a grade of W for all registered but not completed courses. W grades are not calculated in the student's cumulative GPA, but may have other ramifications. Students who withdraw during a semester may still have financial obligations to the College. Students are encouraged to discuss these matters with family, faculty advisors, and counselors from Financial Planning and the Dean of Students Office.

If students withdraw from all classes (withdrawal from the College), they must apply to the Student Academic Development Committee through the Registrar to be readmitted. Pass/No Pass

In consultation with their advisors, students may elect to take up to 16 credits on a P/NP basis with a limit of four credits per term. Up to one course, not exceeding 4 credits, in the student's POE and one course, not exceeding 4 credits, in general education may be taken as Pass/No Pass during the student's academic career at Juniata. However, First Year Experience courses described in Section 3.1.1.I.A of the Faculty Handbook cannot be taken Pass/No Pass. In order to receive a grade of P (Pass), a student must complete the course with a final grade of D- or better. A course grade below D- will result in zero credits for the course and a record of NP (No Pass) on the transcript. P/NP grades are not calculated into the GPA.

Students will have until the end of the drop/add period of the term during which they wish to take a course P/NP to elect the P/NP option. The instructor will not be apprised of the change in grading status. Students wishing to revert to a regular grade for any P/NP course taken at Juniata College can do so by the last day of classes of their graduating semester. Any declaration of P/NP in effect at the end of drop/add will count towards the student's maximum of 16 overall credits allowed under the P/NP policy, even if the student chooses to revert to a regular grade or withdraw from the course.

Individual departments and programs have the aca-

demic discretion to identify those courses that may not be taken P/NP. A list of courses that cannot be taken as P/NP will be maintained by the Registrar's office. Students should consult with their POE advisor to determine whether specific POE classes may be taken P/NP. Students are also urged to discuss the implications of executing the P/NP option with academic advisors as admission to professional programs and/or eligibility for scholarships may be affected

GRADE REPORTS

Grade reports are available to the student through the ARCH at the conclusion of each semester. Students wanting to have a grade report sent to his/her permanent address or another third party must submit the request to the Registrar. The form is located in Founders Hall in the Registrar's Office.

NOTIFICATION OF GRADES

Mid-term Notices

Midway through the semester faculty will send a mid-term notice to each individual student who is doing less than C work in a particular course. This notice is intended to make students aware of unsatisfactory performance in a course at a time when they have a chance to adjust to problems which could prevent them from achieving a passing grade.

Final Grades

Faculty members must report final grades to the Registrar within forty-eight hours of giving an exam. Prompt notification to students depends on prompt processing of submitted grades. Final Grades, once submitted, may not be changed except under unusual circumstances and then must be accompanied by rationale and approved by the Provost.

Grade reports will be posted by the Registrar's Office at the conclusion of each semester.

Performance in all courses should be reported to the Registrar by the faculty as A, B, C, D, or F (+ and -) with the exception of those courses specifically authorized by the Department and Program Committee for the S/U grading system. Grades of F should have an accompanying explanation.

The Transcript

The transcript is a complete record of a student's

coursework (identified by course name, catalog number, and semester of registration), credit earned, grades (including W) and quality points assigned, and cumulative grade point average based on all attempted courses graded A, B, C, D, or F (+ or -). In addition, the following academic actions are reported on the transcript: Deans' List, graduation honors, probation, suspension, dismissal, military LOA, and some program certification notices.

A copy of the official transcript may be released by the Registrar's Office upon written request of a student.

The Registrar's Office maintains a complete record of a student's academic work. This record is available for inspection by the student and/or the parents of dependent students. For purposes of employment, transfer or further study, the student may request in writing that an official transcript of the record be sent to an individual or institution. Official transcripts are for the use of a third party and bear the College seal. Unofficial transcripts are for personal use by the student and bear no seal.

No transcript of a student's permanent record will be issued without written authorization from the student. No telephone or third-party requests will be honored. Members of the faculty or administration may have access to the records if they have a legitimate interest in and demonstrate a need for the information.

GRADE APPEAL

The assignment of grades for academic work is an important matter which falls within the professional responsibility of each individual faculty member. Grades are determined in such a way as to reflect as accurately as possible student performance according to criteria available to the student and to protect the academic freedom both of the faculty member and the student. There is an inherently subjective element to grading, but it does not follow from this that grading is done in an arbitrary fashion.

A student may dispute a grade given in or for a course. When this occurs, the student should follow the appeal procedure outlined below. The faculty member issuing the grade has final authority and responsibility for determining that grade.

1. Within two weeks of the time the questioned grade is received, the student should talk to the faculty member who assigned the grade and attempt to resolve the issue.

2. If the course is team taught and no resolution is achieved, the student may request, where course policy permits, a second faculty opinion from another section leader in the course selected by the director of the course. If this is permissible and the opinion of the second leader differs from the opinion of the first in the disputed grade, the course syllabus or past practice in the course should specify how these different opinions are resolved. Where there are recognized past practices, these should be included in the course syllabus.

3. If no resolution of the grade dispute is achieved after steps 1 or 2, the student should discuss the matter with the department chairperson or course director. In this case, the function of the chairperson or director is to attempt to determine the relevant facts and mediate the disagreement.

4. If no resolution is achieved at step 3, the matter may be referred by the student or the faculty member to the Provost, whose function it is to mediate the disagreement. The Provost will confer privately with the faculty member and the student and may call additional witnesses. Following this process, the faculty member communicates to the student the final decision. This step is the final step in the appeal process.

5. It is expected that a final decision will be made within four weeks of the time the questioned grade is received. All parties are requested to adhere to the deadlines.

FINAL EXAMINATIONS

Testing is basically an educational service to the student. When examinations are given, the primary purpose should be to provide an opportunity for the student to respond creatively and systematically to the instruction which they have had. Secondly, the results may be used as a basis of grading. The teacher has a professional obligation to review tests seriously, pointing out for the benefit of the student both the strengths and inadequacies of the student's work. The tests should be returned promptly with grade and comment.

Written examinations are usually given in each course during the examination period at the end of the semester. Final examinations must be taken during the designated final examination period at the end of each semester. (This means faculty are not permitted to schedule final examinations during the last week

of classes or during Reading Day.) The schedule is prepared by the Registrar, and students are expected to take examinations at the announced times. Exceptions to this rule may be granted by the Registrar in consultation with the Curriculum Committee if the Registrar deems it necessary.

Standing practice has set an unofficial guideline that final examinations, if given, are to be calculated at between one-third and one-half of the final grade. Final examinations may be repeated. In addition to final exams, faculty members are strongly urged to give frequent quizzes and tests throughout the semester, with or without advance notice.

COLLEGE ACADEMIC INTEGRITY POLICY

All members of the Juniata community share responsibility for establishing and maintaining appropriate standards of academic honesty and integrity. Students oblige themselves to follow these standards and to encourage others to do so. Faculty members also have an obligation to comply with the principles and procedures of academic honesty and integrity. Academically dishonest acts include cheating, fabrication and falsification, multiple submission, plagiarism, unacceptable use of College computing systems or of electronic technology, abuse of materials, and complicity in academic dishonesty.

All offenses are reported to the Assistant Provost and all confirmed violations of the policy are kept on file until the student is separated from the College. If a student is accused a second time, the case can be automatically referred to the Judicial Board. Penalties may include, but are not limited to, the following: a formal warning; a reduced grade for the assignment; a reduced grade for the course; suspension from the College; dismissal from the College.

A more complete description of the College's policy on academic integrity and the procedures followed during a hearing of the Judicial Board can be found in the Pathfinder on the Juniata College intranet.

Judicial Board Membership

The Judicial Board conducts hearings in which students have been charged with violating Juniata College policy. The Board is comprised of three faculty members, two students (appointed by the Student Government), one administrator from Student Affairs, and one administrator from Academic Affairs. The Judicial Board is chaired by a representative from the

Provost's Office, typically either the Assistant Provost or the Dean of Students (or other appropriate appointee). A recording secretary appointed by the Judicial Board Chairperson is also present.

Each Judicial Board is selected from a pool of eight faculty members, five students designated by the Student Government and all members of the Academic Affairs and Student Affairs staff.

Procedures for Judicial Board Hearings

Major misconduct and/or repeat minor misconduct which violates the Student Code of Conduct or the Academic Integrity Policy, may result in referral to the Judicial Board.

If a student has been referred to the Judicial Board for a hearing, the accused student shall be informed in writing of the charges at least 48 hours in advance of any hearing. The notice shall include a copy of the hearing procedures. Students appearing before the Judicial Board may have an advisor from the college community and/or parents/guardian(s) attend the hearing.

The hearing is private (closed).

The student may call a reasonable number of witnesses on their own behalf. Witnesses are subject to questioning by members of the Judicial Board.

The student must inform the chairperson 24 hours in advance of the hearing if the student intends to have witnesses appear. The notification must include the names of any proposed witnesses and their relevance to the situation.

If the student does not appear, the hearing will be held in absentia and the student may be additionally charged with failure to comply.

When a student appears before the Judicial Board, the Chair reminds the student that he or she is expected to tell the truth. If it is later discovered that a student has been dishonest and/or misrepresented themselves to the Board, that student is eligible for suspension from the college.

On behalf of the college, the Chairperson of the Judicial Board presents the charge(s) against the student.

The student shall have an opportunity to make an opening statement.

In the specific case of a charge of academic integrity, the faculty member presents the evidence of the violation to the Board. The student is responsible for presenting any evidence in defense of themselves. The burden of proof is on the faculty member. The student and the faculty member may question any witness and inspect any document offered as evidence and make whatever statement or argument appears to be appropriate.

After the student's opening statement (and presentation of evidence from the faculty member for academic integrity charges), the Board may address questions to any party or witness summoned, but shall limit the scope of the testimony to matters relevant to the charges. (The Board may request the presence of any witness deemed necessary for the hearing.)

The student and/or advisor may not directly question any witnesses. However, the student and/or advisor may suggest questions to the Judicial Board to ask of witnesses.

At the end of the question-and-answer period, the student and/or advisor(s) and parent(s)/guardian(s) have the opportunity to make closing statements.

Following the conclusion of the hearing, the Board shall deliberate in private.

The Board shall, by majority vote, make a determination as to whether there has been a violation of Juniata policy and recommend sanctions. The Board provides its recommendation to the hearing chairperson. The hearing chairperson will inform the student of the recommendation(s). The chairperson of the hearing prepares a final report documenting the hearing and the final decision.

The Dean of Students will officially notify the student charged of the final decision and any sanction imposed.

Appeals

A student has 48 hours from the hearing conclusion to submit an appeal in writing to the hearing chairperson. Failure to submit the appeal within the time allotted renders the decision final.

The Chairperson refers the appeal to the Provost. A decision on the appeal will be made within 48 hours and is based on the letter of appeal and the case file. The Provost may remand the case to the Judicial Board only if the Provost specifies procedural errors

that denied the student a fair hearing, or if additional significant evidence becomes available.

The Provost shall send a copy of the written decision on the appeal to the student, the faculty member, and the hearing chairperson.

The decision of the Provost shall be final.

Rights of Students Charged

Certain procedural rights are normally afforded a student charged with a disciplinary violation of college policy.

The right to have one's case processed without undue delay.

Written notice (including email) of the charges and the regulation upon which the charges are based no less than 48 hours before the scheduled hearing.

Written notice of the time, place and date of the hearing. (Students are responsible for checking their electronic Inbox and mailboxes daily.)

The right, but not the obligation, to be present at an Administrative Hearing.

The right to testify on one's own behalf or to remain silent.

The right to be presumed innocent.

The right to be assisted in one's defense by any member of the college community of one's own choosing.

The right of appeal.

Following an alleged act of student misconduct, and until final disposition of the charges, the status of a student shall not be altered or their right to be present on campus and to attend classes suspended, except for reasons relating to their own physical or emotional safety and the well-being of other students, faculty or college property, or for reasons relating to the protection of the normal functions of the college.

Case Records

Records of judicial proceedings shall be kept confidential in accordance with the Family Educational Rights and Privacy Act (FERPA). Case Records shall remain part of the student's files, but will not be noted on the official college transcript. Case Records will be expunged upon the student's graduation.

Standards of Progress

ACADEMIC STANDARDS OF PROGRESS

The maintenance of good academic standing requires students to meet several standards.

Any student whose semester or cumulative grade point average at any time falls below 1.00 may be academically dismissed. Any student whose semester grade point average falls below 1.66 at any time will be placed automatically on academic probation. In addition, any student whose cumulative average falls below those in the following table will be placed on academic probation. In addition to meeting the grade point average requirements, students must show appropriate progress toward degree completion. Full-time students must successfully complete 24 academic credits prior to the beginning of the third semester; 48 academic credits prior to the beginning of the fifth semester; and 72 academic credits prior to the beginning of the seventh semester. Any student failing to meet these standards is placed on Academic Probation and is required to complete 12 credits in the subsequent semester. Failure to complete 12 credits (in the subsequent semester) results in suspension or dismissal. A second failure to meet these standards of progress will result in suspension or dismissal. Students have the right to appeal suspension and dismissal.

Credit Hours Attempted Grade Point Average

- 0 - 35.99 1.66
- 36 - 61.99 1.80
- 62 - 89.99 1.95
- 90 or more 2.00

Students on Academic Probation will be evaluated at mid-term to determine adherence to Academic Probation contracts. Students failing to meet requirements of Academic Probation contracts may be suspended or dismissed at mid-semester. Students have the right to appeal suspension and dismissal. Students on probation must achieve good standing in the next semester or face suspension or dismissal. In addition, any student who accumulates three semesters of probation will be suspended or dismissed. Also, any student on academic probation will be counseled regarding possible limitation or curtailment of his or her participation in co-curricular and/or employment activities. Students who have not satisfactorily com-

pleted the College Writing Seminar course by the end of the sophomore year are automatically dismissed. Academic Standards of Progress are established by the faculty and monitored by the Student Academic Development Committee in conjunction with the Registrar.

The implementation of probationary requirements and the determination of the fulfillment of graduation requirements are duties of the Registrar. Notification of any actions comes from that office and are sent to a student's parents unless the student signs a form preventing such notification. Development and interpretation of policies are the function of the Student Academic Development Committee.

LEAVES OF ABSENCE

Students who want to pursue a program of study at another institution, engage in other off-campus educational experiences, and/or address personal issues without severing their connection with Juniata may request a leave of absence. A leave of absence is granted only with written approval from the Dean of Students Office in consultation with the Registrar. A student requesting a leave of absence must be in good academic standing. Absent extraordinary circumstances, a leave of absence will not exceed one-year.

Any student who plans to take a leave of absence should consult the Registrar, Student Financial Planning, and The Dean of Students Office.

Voluntary Medical Leave of Absence:

When a student's health impedes normal academic progress and/or a situation requires a student to leave the College for one or more weeks, the student may seek a voluntary medical leave of absence. A medical leave of absence is granted through the Dean of Students Office in consultation with the Registrar. The student will be required to submit supporting documentation from his or her medical/health care provider to substantiate the need for the leave. A student on a medical leave of absence will be required to submit documentation from his or her medical/health care provider attesting to the student's ability to return from the leave of absence (and outlining any reasonable accommodations, if applicable) prior to expiration of the leave of absence.

Upon receiving notification of an approved medical leave of absence, the Registrar will enter a "W" grade

for all registered but not completed courses in the current semester. "W" grades are not calculated into the student's cumulative GPA, but may impact progress towards the degree standards. A student who is granted a medical leave of absence may still have financial obligations to the college. The student should consult with Accounting Services and Student Financial Planning to clarify any outstanding financial obligations.

Involuntary Medical Leave of Absence:

A student may be required to take an involuntary medical leave of absence in situations where the student is a threat to his own health and safety or the health and safety of others, or where the student's illness or behavior interferes with the academic pursuits of the student or others or interferes with the regular activities of the College community. The student will be notified by the Dean of Students of the reasons for the involuntary leave and any conditions for the student's return. The student will be required to submit documentation from the student's medical/health care provider attesting to the student's ability to return from such a leave (and outlining any reasonable accommodations, if applicable). Supporting documentation, along with the student's written request to return to the College, must be received by the Dean of Students at least 30 days prior to the first day of the semester in which the student wishes to return. This is designed to provide the College with sufficient time to evaluate the documentation and the student's request to return as well as to ensure that the student no longer presents any potential threat.

A student on an Involuntary Medical Leave of Absence will receive a "W" grade for all registered but not completed courses in the current semester. "W" grades are not calculated into the student's cumulative GPA and will not be reviewed for academic progress. Financial obligations to the College will be pro-rated based upon the date of involuntary medical leave.

Military Leave of Absence:

A student who receives orders to report for active military duty should contact the Dean of Students Office. The student should be prepared to present a copy of military orders (if timing does not permit an initial presentation of military orders, the student may begin the leave process by submitting, in writing, a personally signed request indicating times and dates of intended call-up). However, when available, a copy of the military orders must be provided in order for the leave process to be completed and any financial reimburse-

ments made.

The Dean of Student Office will notify the Registrar's Office, Accounting Services, Student Financial Planning Office and if appropriate the Office of Residential Life to expedite the military leave of absence process. The Registrar will enter a grade of "W" for all registered but not completed courses in the current semester. If the leave occurs late in the semester, the student may arrange for a final graded evaluation of his/her course work or take Incompletes for all remaining coursework. The Registrar will add the notation of "Military Leave of Absence" to the student's transcript.

The Student Financial Planning Office will provide information on the status of the student's financial aid, including information on deferring any loan payments.

The College will refund complete tuition payments to a student who processes a military leave of absence for the current semester. Room and board charges will be prorated based upon the date of the military leave of absence (No refunds can be made until the College has received a copy of the military orders calling the student to active duty).

Upon completion of active military duty, the student will be automatically readmitted to the College by notifying the Registrar's Office in writing of his/her intent to resume academic study at Juniata. All rights, privileges, academic status and rank are resumed at the same level as prior to the Military Leave of Absence.

Medical Withdrawal:

A student may make a request for a medical withdrawal from a course, or withdrawal for other extraordinary circumstances, through the Dean of Students Office or the Student Academic Development Committee. A request for a medical withdrawal must be accompanied by supporting documentation from the student's medical/health care provider.

Upon receiving notification of an approved medical withdrawal, the Registrar will enter a grade of "W" which will not be calculated in the student's cumulative GPA. Medical withdrawals may impact College progress-towards-the-degree standards. Students are encouraged to discuss these implications with family, faculty advisors and counselors from Financial Planning or the Dean of Students Office.

Withdrawal from College:

If a student is considering withdrawing from the Col-

lege, an appointment should be arranged through the Dean of Students Office. A decision to withdraw from the College may have broad implications including as to the student's financial aid. A student should meet with the Dean of Students Office to discuss withdrawal procedures and to complete the appropriate clearance forms.

If a student withdraws from the College during a semester, the Registrar will enter a grade of "W" for all registered but not completed courses. "W" grades are not calculated in the student's cumulative GPA, but may have other ramifications. Students who withdraw during a semester may still have financial obligations to the College. Students are encouraged to discuss these matters with family, faculty advisors and counselors from Financial Planning and the Dean of Students Office.

Exceptions to Academic Policies

Most exceptions to academic policies are processed by the Student Academic Development Committee as described in Section 1.6.1.4.

Exceptions to academic policies that involve Title IX of the Education Amendments of 1972 are processed by the Title IX Coordinator or Deputy. Exceptions to academic policies that involve the Americans with Disabilities Act are processed by the Coordinator of Disability Services or the supervisor of the Coordinator of Disability Services, as chosen by the student. Final approval for either exception is provided by the Provost or the Provost's designee.

Academic Opportunities & Resources

Academic Opportunities

Pre-professional programs

HEALTH PROFESSIONS

[Health Professions Link for different programs](#)

Health Professions Advisors: Professors Peter Baran, Kathy Baughman, Randy Bennett, James Borgardt, Dan Dries, Kathy Jones, Jill Keeney, Elizabeth Mansberger, Susan Radis, David Widman, and Ursula Williams.

We offer advising for entry into professional and graduate school training in such fields as Art Therapy, Audiology, Biotechnology, Chiropractic, Cytotechnology, Dentistry, Genetic Counseling, Health Administration, Health Communication, Social Work with a Focus in Medicine/Behavioral health, Medical Technology, Medicine, Naturopathic Medicine, Nursing, Occupational Therapy, Optometry, Pharmacy, Physical Therapy, Physician Assistant, Podiatric Medicine, Public Health, Radiologic Sciences, and Veterinary Medicine. Students interested in a career in the health professions must meet the specific requirements for admission to a professional school. Since these vary from school to school, the students consult with a member of the Health Professions Committee as they prepare their courses so that students not only have an excellent chance of acceptance into professional schools, but also receive a breadth of knowledge that provides a firm foundation for their liberal arts education.

Students gain in-depth exposure to the health sciences through various types of opportunities that include internships at various health care facilities and universities, shadowing of local health professionals, health-related course work, participation in the Primary Care Scholars Program offered by the Pennsylvania

State University College of Medicine at Hershey, and/or various research opportunities on and off campus.

Juniata offers exceptional preparation for students interested in rural medicine through opportunities for shadowing at J.C. Blair Memorial Hospital in Huntingdon, a summer internship at Altoona Regional Health System and winter break programs at Altoona Regional and Geisinger Health Systems. To assist students for professional school applications we offer a Health Careers Seminar that provides an overview of the entire application process and an on-campus, faculty led Admission Exam Prep Course.

In addition, as a result of a bequest by a Juniata alumnus and physician, there is a four year Lawrence Johnson Scholarship at the University of Rochester School of Medicine and Dentistry for Juniata premedical students.

PRE-LAW

Advisor: Professor Barlow

The pre-legal student should seek a broad undergraduate experience in the liberal arts. Students interested in law should have a thorough command of English, an extensive background in research methods, skill and experience in developing logical arguments, and a critical understanding of the human institutions and values with which the law deals. They are strongly encouraged to develop proficiency in another language and to study abroad. Juniata also offers courses in conflict resolution, a growing field in the legal profession. Although students may develop any Program of Emphasis which suits their particular talents and interests, the experience of others indicates that English, history, politics, American studies, and economics are the most common programs of students entering law schools.

In addition to helping students through the process of applying to law school, the pre-law advisor assists with course selections that will fulfill their POE goals while providing them with appropriate skills for the study of law. In addition, he helps to provide students with resources to prepare for the LSAT and helps to arrange internships that allow students to explore the legal field while they are in college. Students should plan to take the LSAT in the fall of the senior year and apply to law school by mid-January.

A special arrangement with the Duquesne University School of Law allows students to apply for admission

to the Law School after three years of undergraduate study, allowing them to complete their degrees in six rather than seven years. Students must have a LSAT score that puts them at or above the 75th percentile, and a GPA of 3.36 or better.

SOCIAL WORK

Advisors: Professor Radis

The Dorothy Baker Johnson and Raymond R. Day Social Work Program, accredited by the Council on Social Work Education since 1982, is designed primarily to prepare students for beginning professional practice in the field following successful completion of the undergraduate requirements. An important secondary objective of the program is preparation for graduate education in social work and related areas of study.

Students who seek professional competence in assisting individuals, families, groups, and communities in solving human problems develop Programs of Emphasis which reflect an interdisciplinary approach to undergraduate study. A foundation of courses from the natural and social sciences is combined with specific courses in social work practice and social welfare policy. Such a program also allows the student to focus on a particular area of inquiry (e.g., health care, criminal justice, families and children, developmental disabilities, etc.) that may complement the social work interest.

Of great importance to the social work student is Juniata's Social Work Professional Semester. In cooperation with social service agencies representing many areas of social work (e.g., medical, criminal justice, drug and alcohol, developmental disabilities, aging, family and children, etc.), the internship is organized to provide senior students with an educational opportunity to integrate and apply the skills, knowledge, and values mastered in the classroom with the daily tasks of the social worker in the field.

TEACHING

Advisors: Professors Biddle, DeHaas, Glosenger, Jones; Coordinator of Field Experience-Staff

Since 1876 Juniata College prepared individuals for careers in teaching, human development, and child-care. Currently, the Education Department is authorized by Pennsylvania's Department of Education to offer teacher certification programs in PreK-4th grade, Unified PreK-4th grade and Special Education PreK-8th

grade; and 12 areas of secondary education; including Biology, Chemistry, English, Earth & Space Science, Environmental Education, Social Studies, Math, Physics, General Science, French, German and Spanish. In addition, the Education Department works closely with the Office of International Education to promote study abroad.

Although the Education Department's primary focus is on teacher preparation, department members also provide guidance and serve as advisors for individuals who create their own Programs of Emphasis. Other students do a secondary emphasis in education and combine studies in education with programs in social work, health professions, psychology, human development and child life.

Students who seek teacher certification must meet all of the certification requirements mandated by the Pennsylvania Department of Education and Juniata College's Education Department. All certification requirements for admission to, retention in, and completion of a certification program are outlined in the *Education Department Student Handbook*.

International Opportunities

CENTER FOR INTERNATIONAL EDUCATION

"As a member of the international community, Juniata College extends each student's academic experience into the wider world, supporting the free exchange of thought among peoples from distinct cultures and languages." - Mission Statement

Kati Csoman, Dean, Center of International Programs

Since the inception of its faculty-generated exchange programs in 1962, Juniata has championed internationalism by welcoming students from partner institutions, enabling financial aid and scholarships to apply to overseas study, encouraging faculty to recommend international experiences for their qualified students, and allowing courses taken overseas to be incorporated into any academic curriculum. Juniata promotes international competencies through study abroad for students in every Program of Emphasis. Programs of Emphasis with strong international components may be found throughout this catalog, particularly under International Studies, World Languages and Cultures, History, Political Science, and Accounting/Business/Economics. Juniata cultivates proficiency in a second

language, offers an English for Academic Purposes (EAP) for international students, hosts exchange students from twelve partner institutions, and boasts degree-seeking international students and alumni from all over the globe.

The Center for International Education (CIE) is at the core of developing and nurturing Juniata's partnerships with secondary schools and universities abroad, and with infusing internationalism into campus life. The College's vibrant exchange programs facilitate international engagement by offering a framework for Juniata students abroad, and increasing the variety and number of international students on campus. Our programs also provide faculty members with opportunities to conduct visits and arrange overseas teaching opportunities, and enable faculty members from international partner institutions to speak with classes, hold public lectures, share in joint research projects, and participate in informal interaction with students. An active "International Education Committee" and the "American Council on Education's Internationalization Leadership Team" (composed of faculty, administrators and students) advise the CIE, help to coordinate international activities at Juniata, and provide direction for future growth. The CIE maintains membership in several national and international organizations, including the National Association of International Educators (NAFSA); The Forum on Education Abroad; Teachers of English to Speakers of Other Languages (TESOL), the Institute for International Education (IIE); the Association of International Education Administrators (AIEA); the American Council on Education (ACE); and the Pennsylvania Council for International Education (PaCIE).

INTERNATIONAL STUDENTS

Kati Csoman, Dean, Center for International Education

Juniata welcomes students from around the world. The staff of the Center for International Education (CIE) provides support to students from around the world with visa issues, pre-arrival planning, orientation, academic advising, and adjustment to studying and living in the U.S. The CIE promotes academic and social programs incorporating language, international and intercultural subjects, and works closely with faculty members and departments to support the academic performance of international students. Requirements for admission and scholarship and financial aid information for international students can be found in the Admission section of this catalog.

INTERCULTURAL ACTIVITIES

Juniata supports a number of student organizations and co-curricular activities that facilitate intercultural learning. Students may choose to live in the Global Village, which brings together diverse students with interests in world languages and intercultural exploration into common residences for intentional living and learning communities. The French, German, and Spanish Clubs sponsor cultural events and join faculty in hosting language tables in the Global Commons. . Other clubs like the Chinese Club, and Russian Club have grown out of student interest in world cultures and are instrumental in the success of such activities as the Chinese New Year dinner, film series, lectures, and other intercultural learning activities on the campus. The Juniata Chapter of "Sigma Iota Rho", a national honor society "to promote and reward scholarship and service among students and practitioners of international studies and global relations and to foster integrity and creative performance in the conduct of global affairs," honors successful students in International Studies

STUDY ABROAD

Juniata encourages study abroad as an integral component of a liberal arts education. A variety of study abroad programs is available, including offerings for the full academic year, one semester, and short-term programs, many of which are led by Juniata professors. While year-long language immersion programs in which a student continues to study in the Program of Emphasis are the optimal, study abroad experiences offered at Juniata provide students opportunities for personal and academic growth.

Juniata students can study abroad on every continent (except Antarctica), in the following countries: Africa (the Gambia, Morocco, Rwanda), Asia (China, India, Japan, Taiwan), Europe (Austria, Belgium, Czech Republic, France, Germany, Greece, Ireland, Russia, Spain, United Kingdom), North America (Canada, Mexico), Oceania (Australia, New Zealand), and South America (Ecuador). Juniata supports Direct Enroll/Exchange (EXC), and Brethren Colleges Abroad (BCA) programs; some of these are Limited Enrollment (LE). A complete list of programs and their requirements can be found at: <https://www.juniata.edu/academics/departments/international/study-abroad/programs/index.php>.

Students with Programs of Emphasis from all academic departments are eligible for approved study

abroad programs, following the guidance of their faculty advisers to maintain academic progress. In Juniata approved programs, credits and grades will be indicated on the Juniata transcript. In all approved programs (except summer), Juniata financial aid is applicable, including grants-in-aid and scholarships. Students pay the regular Juniata tuition and fees for the semester and year programs and all financial aid and scholarships apply (tuition benefit involves special tuition arrangements; students can obtain information from the Center for International Education. PAR rates are not applicable to study abroad). A number of scholarships are also available specifically for study abroad (see <https://www.juniata.edu/academics/departments/international/ea/scholarships.html> for complete list). The student is responsible for the passport, visa and airline tickets to program sites. Summer and short-term programs have specific fee structures; these are provided with the program information.

In each program, Juniata students are accepted into each host institution on a full-time basis and are treated as regular members of the student body, attending classes, writing papers, taking exams, etc., side-by-side with their counterparts in the host institution. In most programs, classes are conducted in the language of the host country; in others, (e.g., Czech Republic) classes are in English and the student also takes a class in the language of the host country to facilitate adjustment. Supervision for the student is provided by the host institution; in many BCA programs, there is a resident director whose sole responsibility is overseeing the program.

Occasionally, a student may desire to enroll in a non-Juniata program. Such programs must be offered by accredited U.S. colleges or universities or involve direct enrollment in an approved university outside the U.S. In either case, credit earned may be transferable to Juniata under the usual policies and requirements for the acceptance of transfer credit. To enter these programs, students need prior approval of the Dean of the Center for International Education, the Registrar, and the Dean of Students. Juniata grants-in-aid are not transferable to programs sponsored by other institutions. Procedures for receiving aid such as outside loans and grants are specific; students should consult the Director of Financial Planning. Credits from non-Juniata programs are entered on the Juniata transcript as transfer credits; grades are not indicated

Study Abroad Scholarships

Juniata offers a number of scholarships that are designated specifically for study abroad

<https://www.juniata.edu/admission/scholarships-and-aid/>

https://www.juniata.edu/services/catalog/section.htm?s1=academic&s2=international_activities

ENGLISH FOR ACADEMIC PURPOSES

Juniata's English for Academic Purposes (EAP) is a unit of the Center for International Education (CIE) and works in cooperation with the Department of World Languages and Cultures. Juniata's English for Academic Purposes's mission is to foster and support a diverse international body of students who are enabled to participate fully and successfully in an open and stimulating community of learners at Juniata College. The program offers English as a Second Language (ESL) courses at the High Intermediate and Advanced levels of English proficiency. Content-based courses are offered so that students may practice their language skills while learning about American society and other special topics.

The English for Academic Purposes is open to students who will matriculate at Juniata as degree students, to exchange/sponsored students, and to those students who come to the U.S. with the goal of improving their English. Degree students will be able to earn up to 15 credits for their ESL courses toward their graduation requirements. Also, degree students may take non-ESL courses as appropriate.

As there are no beginning or intermediate levels, all prospective students must have minimum test scores to be considered for admission (e.g., 52 Internet-based TOEFL).

Internships

INTERNSHIPS POLICY

Purpose

An internship is a structured learning situation where a student applies concepts learned in the classroom to the realities of an on-the-job experience. The primary purpose of an internship is to provide an educationally sound platform for the development of the student's human, social, and management skills through a field-based activity. Interns receive practical training

and experience in a variety of settings through cooperatively arranged placements. Interns are placed in preprofessional positions and work side-by-side with other employees or as “management trainees.”

Credit versus Non-Credit Internships

Credit for internships is not given for work per se. Students apply theoretical concepts to the workplace and reassess ideas. Hence, academic credit is given for placing the preprofessional work experience in a conceptual and comparative context. The primary distinction between credit and non-credit internships is the degree to which students are required to reflect on their experiences. This distinction is exhibited in the differences in the academic requirements, the degree of college supervision, the investment of college resources, and the student’s payment for the receipt of credit.

With both credit and non-credit internships placement is a coordinated responsibility of the Career Services staff, faculty members, and the students. In credit internships, the academic department is expected to lead the placement effort, while in non-credit internships the Career Services staff takes the lead. When a department or a program cannot be assigned for a for-credit internship (non-departmental; ND) the POE advisor will lead the placement effort.

In the case of credit internships, students may be compensated for internship work as long as the department and/or faculty sponsor believes that the college can maintain enough control of the internship experience to ensure its academic validity.

Credit Internships

Application Procedure

A student pursuing a credit internship must have a minimum 2.00 cumulative grade point average, have junior or senior status, and be in good academic standing. Individual departments may set additional requirements, such as higher GPA requirements. All faculty sponsors must have faculty status.

In order to apply for a credit internship, the student obtains a Learning Agreement Plan from the Career Services Office, recruits a faculty sponsor from the department or program most closely related to the internship, and secures a placement position. Then the student presents an internship proposal to the appropriate faculty members (the faculty sponsor, both

advisors, and the department chair) for review. For non-departmental (ND) internships, a student’s POE advisor will serve as the faculty sponsor or the student may suggest another faculty member who has expertise in the proposed internship field. A non-departmental internship proposal is reviewed by the POE advisor or the advisor-selected sponsor, and the ND chair. Upon approval of an internship application, the student next submits the proposal to the Director of Career Services and the Registrar for approval. Agency or placement contracts/agreements are developed as needed.

Course Designation and Evaluation

Students must register for an internship and an internship seminar. The seminar need not be a typical classroom experience but is intended to provide time for reflection, analysis, and feedback between the student and faculty sponsor. In both cases the student and faculty sponsor negotiate the amount of credit to be awarded, which in turn determines the intensity of the experience. A semester internship carries a minimum of 4 credits (2 internship credits + 2 seminar credits) and a maximum of 15 credits (normally 9 + 6, except in cases where an outside accrediting agency requires otherwise, such as Social Work and Education in which the division of credits is decided by the appropriate department). Students can earn no more than 15 internship credits towards their graduation requirements during their four years at Juniata. Faculty sponsors should note that a minimum of 12 credits, including the internship credits, must be maintained for students to be eligible to receive their financial aid awards for the semester.

The faculty sponsor awards standard letter grades (A-F) for the internship and the internship seminar.

The internship is designated as course 490 in the appropriate department (“Internship”) and carries 2 to 9 credits. Credit is awarded in proportion to time spent on the job according to the following figures:

2 credits	= 8 hours/week
3 credits	= 12 hours/week
4 credits	= 16 hours/week
5 credits	= 20 hours/week
6 credits	= 24 hours/week
7 credits	= 28 hours/week

8 credits = 32 hours/week

9 credits = 36 hours/week

Grading is based on the following criteria:

Successful completion of the Learning Agreement Plan

Contact with the faculty sponsor with one on-site visit preferred, but allowing alternative communication as appropriate substitutions where an on-site visit is not feasible

A final evaluation conducted by the student, the placement supervisor, and the Juniata faculty sponsor.

The internship seminar is designated as course 495 in the same department ("Internship Seminar") for 2 to 6 credits. Credit for this course is awarded in proportion to time spent with the faculty sponsor as follows:

2 credits = 6 contact or study hours/week

3 credits = 9 contact or study hours/week

4 credits = 12 contact or study hours/week

5 credits = 15 contact or study hours/week

6 credits = 18 contact or study hours/week

Grading for the seminar is based on

Contact with the faculty sponsor

An extensive project, paper, or program as arranged with and periodically reviewed by the faculty sponsor

Completion of other seminar components as designed.

A student presentation is strongly recommended for high credit experiences.

Examples of past seminar requirements are:

2 credits:

Journal of activities, outline of final paper, final paper, talk to student group;

Work journal, portfolio, annotated bibliography, oral presentation;

Journal, public presentation, short assignment, term paper;

Meet with sponsor, submit copies of projects, descriptive analysis of operations at placement.

3 credits:

Log and annotated bibliography, research project and report, self-evaluation of performance, weekly meeting with sponsor;

Read three books, daily journal, 15-20 page research paper.

Journal, abstracts, outline of final paper, final paper, talk to student group.

4 credits:

Daily journal, two book reviews, outline of research paper, major research paper, weekly consultations with sponsor.

5 credits:

Daily journal, weekly consultations with sponsor, book review, 2 major research projects.

6 credits:

Daily journal on significant events, weekly consultations with faculty sponsor, three major research projects.

The intern must fulfill any additional departmental requirements provided these requirements do not conflict with internship policies.

Non-credit Internships

Application

Individuals pursuing non-credit internships must have a minimum cumulative GPA of 2.00.

The student submits a registration card and the non-credit Learning Agreement Plan to the Career Services Office. Agency or placement contracts/agreements are developed as needed.

Course Designation and Evaluation

The Internship Committee oversees non-credit interns, awarding grades of satisfactory ("S") or unsatisfactory ("U"). Evaluation is based on the following elements:

A Learning Agreement Plan

Contact with the Career Services Office

Regular supervision and final evaluation by the placement supervisor;

Final evaluation by the intern

A presentation upon completion of the internship experience.

Upon successful completion of all necessary requirements, a non-credit internship unit appears on the academic transcript as course number XX1 ("Internship" followed by the title as approved by Career Services) in the appropriate department. Students may complete multiple non-credit internships and receive transcript notation each time (course XX2, XX3, etc.).

Interns must fulfill any additional departmental requirements provided these requirements do not conflict with internship policies.

NON-CREDIT SUMMER INTERNSHIPS

Exciting opportunities are available for Juniata students in virtually every academic area, and Career Services is available to assist students in finding academically-meaningful positions. Students must have a minimum GPA of 2.0 and have completed a minimum of 12 credits hours in courses directly related to the internship prior to applying for a transcript notation internship, and must submit a learning agreement plan. With few exceptions, summer internships are not for credit, but can be officially noted on the student's transcript as an academically-valid experience. Approximately 150 students participate in this program each summer. Note: Transcript Notation internships can also take place during the academic year. There is a maximum of two notations in a single summer and one per academic semester.

The College encourages organizations to pay summer interns, and students have earned from minimum wage to \$21.50/hour. To qualify for transcript notation, an internship must last for a minimum of 240 hours and should be directly related to the student's P.O.E. Each intern is evaluated by his/her supervisor, and must make a presentation on the experience. If the Internship is deemed appropriate and successful, the experience will be noted on the student transcript; e.g., ABC Employer, BI XX1 Internship: Biomedical Technician, Harrisburg, PA or EB XX1 Internship: XYZ Employer, Retail Sales/Marketing, Seattle, WA. While most students live and work near home, many students have taken advantage of summer internships as a way to travel and live in other areas. Students have

interned in locations ranging from Hawaii to California and in organizations such as: Abbott, African Wildlife Foundation, Brigham and Women's Hospital, Geisinger Medical Center, Hershey Entertainment & Resorts, Human Rights Campaign, Johns Hopkins University, Long Island Rough Riders, PA Lions Beacon Lodge Camp, Pennsylvania Department of Environmental Protection, Philadelphia Zoo, Penn State College of Medicine, Secular Student Alliance, Tom Steel Clinic, UPMC, Yale School of Medicine.

URBAN SEMESTER EXPERIENCES

Juniata is affiliated with several urban semester internship experience programs including: the Philadelphia Center, the Washington Center, and the Washington Internship Institute. In all these experiences, students typically earn 15 academic credits, but only a limited number (2-3) of individuals may participate annually. Approval by the Internship Committee is on a competitive basis. Program costs vary and students may be responsible for any costs above and beyond tuition and room fees paid to Juniata. Students may plan to participate in these programs during their junior or senior year. One year international students (and other students not seeking a degree at Juniata and/or attending Juniata for one year or less) are not eligible to participate. The application deadline is December 1 of the academic year prior to planned participation and is made through the Director of Career Services. A faculty sponsor is required.

WASHINGTON INTERNSHIP INSTITUTE

Advisor: Director of Career Services

Students participating in WII's internship program work four days per week and attend the fifth day seminar to process their experiences. Students actively create and shape personal and professional learning goals by utilizing the three experiential learning components which guide the program: knowledge, activity and reflection. Past internship placements include: CNN, FAA, American Red Cross, Amnesty International, and others. Housing (excluding board) is provided.

*Participation requires approval by the Internship Committee- Deadline to apply: December 1 of the academic year prior to planned participation.

PHILADELPHIA CENTER

Advisor: Director of Career Services

The Philadelphia Center program is open to students regardless of academic field. Through cooperation with the Great Lakes Colleges Association, students may spend a semester interning in Philadelphia, gaining firsthand insight into potential careers and exposure into the issues and problems confronting our cities. Blending theory and direct experience, each program includes a supervised internship for four days per week in business, industry, social service agencies, medical facilities, political offices, schools and other organizations. Seminars, academic classes and/or research projects provide academic complements. Assistance in locating housing is provided.

*Participation requires approval by the Internship Committee – Deadline to apply: December 1 of the academic year prior to planned participation.

WASHINGTON CENTER

Advisor: Director of Career Services

Under a cooperative arrangement with the Washington Center, Juniata students may participate in internships in Washington, D.C., in nearly every academic field. Internship placement assistance is available to help students secure meaningful, relevant placements. Interns work four days per week and attend seminars, political, and cultural events the fifth day. Internship placements include public administration, congressional offices, lobbying associations, and public interest organizations like Common Cause and the Environmental Policies Center. Housing (excluding board) is provided.

*Participation requires approval by the Internship Committee – Deadline to apply: December 1 of the academic year prior to planned participation.

Student Research and Scholarship 51

Undergraduate Research

In preparation for graduate work, students are encouraged to engage in independent research projects as part of an independent study or internship or as a member of an upper level research-oriented course. All students conducting research are encouraged to present their work in a public forum such as the annual National Conference on Undergraduate Research (NCUR). Funding for instruments, supplies, and travel is available through application to the Scholarship Committee. Interested students should contact any

of the following Scholarship Committee members: Professors Beaky, Biddle, Buonaccorsi, Muth, J. Tuten and Kruse. For more information go to the website address: <https://www.juniata.edu/academics/research/student.html>

Students with strong records of academic achievement are encouraged to consider competing for national fellowship awards such as the Rhodes, Fulbright, Goldwater, and Marshall Scholarships, and the Mellon Fellowship. Students with meritorious records are contacted by members of the Scholarship Committee and mentored through the application process. Most applications are due early in the senior year. Interested students should contact a member of the Scholarship Committee.

Liberal Arts Symposium

The faculty agree to set aside a class day in the spring semester for students to present their research and artistic work to the campus community. No classes will be held on this day to encourage the full participation of faculty and students. The date will be selected, as far as possible, in such a way as to encourage students to apply and present at NCUR. The date of the spring event will be set prior to the end of the fall semester. Faculty agree to attend and to encourage students to participate in and attend these presentations of student work.

Community Engaged Learning

COMMUNITY SERVICE

Over 70% of Juniata students participate in Community Service. Students perform service in many ways: individually, through class, as part of their residence hall, or through the many student service organizations on campus such as Habitat for Humanity, Circle K, Health Occupations Students of America (HOSA), Colleges Against Cancer, and Big Brothers Big Sisters. Registered student organizations are supported with community contacts through the Community Service Office. Throughout the year, Juniata hosts many campus-wide service events including American Red Cross Blood Drives, Special Olympics, Relay for Life and numerous "service days". In addition, the Community Service Office offers service-learning alternative break trips to inspire global action and awareness. In order to recognize the efforts of those students who

consistently perform service, the Community Service Office coordinates transcript notation for those who perform at least 120 hours of non-paid, non-credit volunteer work over their college careers. Students can begin tracking their service hours for service notation the fall semester of freshman year and can count all service until graduation, including summer service. Information and materials to initiate the Community Service Notation are available in the Community Service Office.

COMMUNITY WORK STUDY

The Community Work Study Program places Federal Work Study-eligible students at community agencies across Huntingdon County for part-time employment in service to the community. Students earn minimum wage while aiding organizations. Tutoring programs such as the Huntingdon Community Center After-School Program, the Salvation Army ARC of Learning Program and the Bethel AME After-School program work with Huntingdon County youth. There are also positions available with other agencies. Information, position descriptions, and applications are available in the Community Service Office

Academic Resources

Academic Advising

Faculty advisors are an invaluable source of support for students. At the time of enrollment, first-year students are assigned a program advisor who assists in orienting new students to College academic policies and procedures. By the early part of February of their first year, students choose their second advisor. Students will have a program advisor to assist specifically with POE and career issues, and a liberal arts or general advisor to assist with general academic issues such as fulfilling graduation requirements. The liberal arts or general advisor teaches in a discipline outside of his or her student advisee's Program of Emphasis. Those students who do not choose a general advisor by the appointed deadline will have one assigned to them. For exploratory students, advisors can help identify potential areas of interest. At any time, students may change advisors, subject to approval of the Registrar, as long as one advisor is from the department most prominently represented in the Program of Emphasis (POE). Students pursuing dual fields of

study should select one advisor from each area.

Advising is a crucial form of guidance for all students, especially for those individuals pursuing highly structured academic programs. During summer orientation, incoming freshmen work individually with faculty advisors in their area of academic interest to select and register for fall semester courses. Once the fall semester begins, first-year students meet with their Advisors to review course registration and make adjustments as needed.

Advising Planning Meetings and Program of Emphasis (POE)

During the spring semester, freshmen meet individually with both of their advisors to discuss course selection for the following year and to devise a four-year academic plan. The Advising Planning Sheet is available to assist the student and advisors as they map individual plans of study. The planning sheet contains areas to plan a POE and meet general education requirements, including: the liberal arts distribution (FISHN), Communication Skills (CW and CS), Quantitative Skills (Q), Interdisciplinary Colloquia (IC), Cultural Analysis (CA), College Writing Seminar (CWS), and Information Access (IA). The process of completing the document provides students with the opportunity to consider personal academic and career goals, and to begin to identify those courses that will provide the background, skills, and perspective needed to achieve those goals. In addition, it is an opportunity to consider internships, study abroad and other experiential learning opportunities.

During the spring of the sophomore year, prior to selecting courses for the following year, students must complete the Sophomore POE, which guides in planning their coursework. In addition to enumerating academic and career objectives, students sketch out a complete set of courses totaling 45-63 credits, and to explain how each course or set of courses contributes to the overall goals listed. Advisor-approved POEs are submitted to the Registrar. Failure to submit a POE by the deadline posted by the Registrar will result in a hold for future registration and a late fee of \$50.

In the fall of the senior year, students are asked once again to review the POE they have on file. Again, changes can be made either by drafting an entirely new POE or by completing a minor POE change form. In some instances, the POE completed sophomore year will remain accurate and no changes are needed. The final document, due in the Registrar's Office on or prior to

preregistration for the spring semester, is considered a contract between the student and the College; students who do not complete the courses they have listed or who do not have a POE on file, are considered to have failed to meet degree requirements and will not graduate. A \$50 late fee may be applied.

ACADEMIC ADVISING POLICY

Academic advising is vital at Juniata, as it helps students determine their academic interests, strengths, and weaknesses. Sound advice is essential to students as they elect courses that both develop Programs of Emphasis and explore the liberal arts curriculum. Advisors also play a crucial role in helping students consider options in careers and post-graduate education. Academic advising is often an important factor in aiding in retention and increasing students' satisfaction with their college experiences.

There are three types of academic advisors. Summer Orientation, General, and POE advisors each has their own eligibility requirements, responsibilities and functions.

Advisor Eligibility

Faculty ranked at the Assistant Professor level or higher must serve as academic advisors and may serve as both General and POE advisors. Other faculty ranks, administrators, and staff members of the College may be named General Advisors based on approval of the Provost's Office in conjunction with the Student Academic Development Committee. Their POE advisor status must be further approved by the POE's home department chair. Any active academic advisor is eligible to volunteer as a Summer Orientation Advisor.

Types and Responsibilities of Advisors

The three types of advisors differ by the timing and processes by which they are assigned or chosen, their training schedules, and by their different responsibilities.

Summer Orientation Advisors

Assigning Summer Orientation Advisors to incoming students is the responsibility of the Office of Academic Support. That office will assign students to advisors based on the students' areas of academic interest and/or pre-professional programs when possible.

Summer Orientation Advisors are required to be

trained annually to address the needs of first-year and incoming students. Summer Orientation Advisors will be required to retrieve a file on each advisee from the Office of Academic Support to be used during the orientation session. Following the session, advisors will return the files, and any notes taken during those orientation meetings, to the Office of Academic Support. These files will be distributed to assigned academic advisors at the start of the fall semester.

During Summer Orientation meetings, advisors should cover the following topics with their advisees:

1. course selection for the fall semester
2. process of choosing Program and General Advisors
3. Liberal Arts curriculum
4. development of a POE
5. drop/add process
6. course withdrawal policy

General and Program of Emphasis Advisors

General Advisors are selected by students. Those students who have not chosen their General Advisor before the selection deadline during their second semester will be assigned one. Assigning those advisors is the responsibility of the Office of Academic Support in collaboration with department chairs. A General Advisor may not be from the same department as the advisee's Program of Emphasis advisor.

The initial assignment of Program of Emphasis (POE) Advisors is the shared responsibility of the Office of Academic Support, academic department chairs, and the Provost. Students may choose different POE advisors on their own throughout their academic careers.

Duties of General and POE Advisors include:

1. Maintaining a file of information on each student, which shall be passed on to the new advisor in event of an advisor change.
2. Advising students on course selection.
3. Electronically approving schedules during official registration periods.
4. Assessing how drop/add actions affect credit loads and academic progress.

5. Reviewing degree audits.
6. Referring students to other personnel who can further assist them on academic, career, financial, housing, and personal matters. Use the "Notice of Concern" form to share concerns with appropriate persons.
7. Discussing Mid-term Notices and other academic difficulties as they arise.
8. Consider writing letters of recommendation regarding internships, job placement, graduate schools, study abroad, scholarship applications, etc., when these letters are requested.
9. Meeting with a student on academic probation and approve the advisee's completed Statement of Intent form. Monitor advisee's fulfillment of the Statement of Intent throughout the semester.
10. Knowing and explaining the Student Academic Development Committee's appeals process.
11. Informing students that they may or should change advisors when academic changes or personal factors so warrant. Students will use a "change of advisor" form available in the Registrar's Office for this purpose.
12. Participating in advisor training sessions as required.

Program of Emphasis advisors have the additional responsibilities of:

1. Assisting students in developing a designated or individualized Program of Emphasis.
2. Providing rationale for POE-specific course selections.
3. Monitoring student's progress through the POE over the academic career.
4. Assisting in formulation of plans for career, graduate school, and/or professional school.

Advising Students on Academic Probation

The College has an obligation to give students placed on academic probation additional assistance. As a College we should utilize available resources to help these students maximize their potential and increase our efforts to retain these students if doing so is mutually advantageous to both the student and the College.

As soon as advisors are notified that an advisee has been placed on academic probation, they should review the relevant information about the student's poor academic performance. The advisors should meet with the advisee as early as possible to discuss the student's plan for academic improvement in the current semester. After the student (in collaboration with both advisors and the assigned academic counselor from the Office of Academic Support) writes the official Statement of Intent, the advisors should review the final document and note approval by signing the corresponding form. Advisors are then expected to meet with the student periodically throughout the semester to ensure that the Statement of Intent is being fulfilled.

For assistance in finding resources for students on academic probation, advisors should contact the Office of Academic Support.

Advisor Training

The Office of Academic Support and the Faculty Advising Committee coordinate training for the various types of academic advisors. All faculty who have advising as part of their job responsibilities shall receive both initial and on-going advisor training. Each year there will be one or more training session for Academic Advisors to cover the timetable and content of the advising program.

All new faculty and staff who have advising as part of their job responsibilities shall receive training on best advising practices, the Juniata liberal arts curriculum, and the operation of Juniata's advising technology in the academic year before they begin advising.

Attendance at the Annual Advisor Training, offered each spring, is mandatory for all advisors for their first six years as an advisor. The Provost's Office will monitor attendance.

Advisors with more than six years of experience are required to attend the Annual Advisor Training once every three years. The Provost's Office will administer the tri-annual attendance rotation for this training.

All advisors participating in a summer orientation advising session are required to attend the annual Summer Orientation Advising Training.

Advisor Evaluation

All Academic Advisors are evaluated by their advisees during a three-week interval immediately following the

close of the course registration periods in both the fall and spring semesters. For faculty being reviewed for contract renewal, tenure, or promotion, the Personnel Evaluation Committee uses these evaluations as outlined in section 2.5 Evaluation, 2.5.1.2 Advising.

Academic Support

Juniata students may receive assistance with academic coursework in a number of ways. Through QUEST, students may receive general academic counseling and study skills guidance on topics such as note taking and exam preparation. The campus-wide peer tutoring system offers individualized or group tutoring assistance with material in a particular course. Similarly, by visiting the Writing Center students may receive individual help on written assignments for any class. Students may take advantage of the Baldrige Reading Program, at additional cost, during the fall or spring semester to improve their reading comprehension and rate.

Career Services

The Career Services staff is dedicated to providing students with the fundamental skills and experiential opportunities needed to prepare for the challenges in an ever-changing, global work force.

Career Services provides Juniata students with individual counseling, computerized guidance and information programs (FOCUS II), and workshops on career development and professionalism topics. The office supports a comprehensive website and library of up-to-date career resource materials and graduate/professional school information. Juniata offers a top Career Day, which annually attracts over 100 employers and over 500 students. Additionally, Juniata students are invited to participate with other Pennsylvania colleges in numerous regional job fairs throughout the year. The largest of these include the Western PA Career Services Association (Pittsburgh area) job fair, the Central PA Employment Consortium (Harrisburg area) job fair, and the Pittsburgh Educational Recruiting Consortium.

Career Services also coordinates Student Internship Programs. Juniata encourages students to seek internship placements generally after completion of the freshman or sophomore years. Students receive assistance in the application process from Career Ser-

vices and from Juniata faculty. Information regarding credit and non-credit internships is available online and from the Career Services staff in QUEST, located in Founder's Hall.

Student Accommodations

The College makes reasonable accommodations for students with respect to disabilities, which do not impose an undue hardship on the College. If a student believes he or she requires a reasonable accommodation or has a question regarding educational services, activities, programs, or facilities that are accessible to or usable by students with disabilities, please contact the Director of Student Accessibility Services who serves as the point person and advocate for students with learning challenges.

Documentation

Students requesting reasonable accommodations with respect to disabilities must obtain and provide to the College current (within three years prior to enrollment) documentation of their disability before the start of the session in which they are enrolling and requesting an academic adjustment or services. This documentation must support both that a student has a disability as well as the necessity of the requested academic adjustment or services. The primary purpose of this documentation is to determine a student's eligibility for accommodation and, if eligible, to help the College work interactively with a student to provide appropriate services. The College is not required, however, to provide accommodations that would result in a fundamental alteration to the nature of the program in which the student is enrolled or seeks to be enrolled, would create an undue financial burden on the College, or which would pose a threat to safety and security. General documentation requirements include, but are not limited to:

- Documentation is typically provided by a licensed or otherwise properly credentialed professional/medical specialist who has no personal relationship (i.e., family member or former school teacher or school counselor) with the individual but who is knowledgeable about the individual's disability and/or condition.
- Documentation must be typed or printed, dated, signed and legible with the name, title, and professional credentials of the evaluator on official letterhead and define/explain:

- The clear description of the disability
- The description, name, and scores of the tests and assessments used, as appropriate
- How the condition was diagnosed
- The current existence of the disability and current need for an accommodation
- Functionality of the individual in an educational setting
- Expected progression or stability of the disability
- Rule-out statement that describes which academic and other functions the disability does not affect
- Recommended accommodations related to functional limitations and a rationale for how the requested accommodation remedies the functional limitation
- Date of observation

The above criteria are general guidelines only; the type of documentation will vary according to the disability. For students with learning differences, it is preferable that the student provide a full and recent psycho-educational evaluation. In addition, in some instances, a student may be requested to provide updated or augmented documentation in order to be reviewed more fully before being considered for services. It is possible that in reviewing a student's specific accommodation request or the recommendations of an evaluator, the College may find that while the recommendation is clinically supported, it is not the most appropriate accommodation given the requirements of a particular student's academic program. In addition, the College may also propose accommodations that would be appropriate and useful to the student, but which neither the student nor the evaluator have requested. The College appreciates that student disability records contain personal and confidential information. Such documentation is maintained in a confidential file in the office of Student Accessibility Services and is considered part of a student's education record and will only be disclosed with a student's permission or as permitted by law (e.g., in the event of a health or safety risk). However, at times, in order to evaluate and/or provide requested or recommended services and accommodations, it may be necessary for the College to disclose disability information provided by a student or a student's healthcare provider to appropriate College personnel participating in the accom-

modation process and who have a legitimate need to know more and review the file.

If documentation provided by a student does not support the existence of a disability or the need for an accommodation, the student will be advised and will be provided an opportunity to supplement the initial documentation with further information from a physician, psychologist, or other appropriate specialist. In the event a student's accommodation request is denied, the student may appeal that decision by utilizing the appeal/grievance process found below.

Supporting Students with Disabilities

In its commitment to ensuring that no otherwise qualified student with a disability is subjected to unlawful discrimination in the context of his/her educational experience, the College makes certain that students with disabilities are provided equal access to educational and career development programs and/or student activities. Consequently, as noted above, the College will make, on behalf of qualified students with learning and physical disabilities of which the College is aware, reasonable accommodations that do not impose undue hardships on the College. Students and their families are strongly encouraged to disclose and discuss possible accommodations during the enrollment process.

If a student believes he/she requires a reasonable accommodation or has a question regarding educational services, activities, programs, or facilities that are accessible to or usable by students with disabilities, please contact the Director of Student Accessibility Services, who has responsibility for students with learning challenges. All information associated with a disclosure of this nature is confidential, and the College will communicate this information to others only on a need-to-know basis.

Appeal/Grievance Process

Scope and Application: This appeal/grievance process applies to any student allegedly aggrieved by a denial (in whole or in part) of his/her request for an accommodation/academic adjustment under the College's Policy Regarding Students with Disabilities or who otherwise has an unresolved complaint regarding his/her disability. The College commits that no retaliation will occur at any stage of this process.

Initial Time Period for Filing an Appeal/Grievance: A student alleging a disability and wishing to file an ap-

peal/grievance hereunder, must initiate the procedure described below within thirty (30) calendar days of when the student knew or should have known of the action of which the student complains or is otherwise aggrieved by, including a denial (in whole or in part) of a request for accommodation/academic adjustment.

(A) The student or, any person(s) acting on behalf of the student, may file an appeal/grievance with the Office of Student Accessibility Services. An academic counselor (or his/her designee from Student Accessibility Services) will discuss the student's complaint and attempt to resolve or adjust the dispute on an informal basis. The student may present any facts or circumstances he/she deems relevant to the complaint/dispute. The academic counselor may investigate the matter and gather any relevant facts and circumstances, including conducting interviews. The academic counselor shall render a determination within twenty (20) calendar days after being assigned to handle the student's appeal/grievance. Within seven (7) calendar days from the date of the determination by the academic counselor that the complaint/dispute could not be resolved, the student (or the person acting on his/her behalf) must submit a written request for a further review by the Dean of Students to the Office of Student Accessibility Services and must document the student's attempt to first resolve the appeal/grievance with the academic counselor. The written request must explain the nature of the student's complaint/dispute and/or the accommodation/adjustment sought.

(B) The Dean of Students shall review all matters relating to the complaint/dispute as presented to the Office of Student Accessibility Services and may solicit additional facts and evidence as the Dean may deem necessary. The student may present any further facts or evidence he/she deems relevant. The Dean of Students shall complete the review and render a decision within twenty (20) calendar days after the appeal/grievance is submitted to the Dean of Students. If, after the Dean of Students has had an opportunity to render his/her decision, the student remains unsatisfied with the resolution of the appeal/grievance, the student, or person(s) acting on behalf of the student, may submit an appeal/grievance in writing, within seven (7) calendar days from the date of the decision by the Dean of Students, to the Provost. If no written request is submitted within the seven-day period, the decision of the Dean of Students shall be final.

(C) Upon the submission of the student's written re-

quest for a review of his or her appeal/grievance, the Provost will consider all facts and circumstances, including the investigatory file as developed by the Office of Student Accessibility Services and any medical evidence presented. The Provost may also interview the student or such other witnesses as may be necessary. If, upon such inquiry, the Provost determines that a proper review of the matter was conducted, the decision of the Dean of Students shall be confirmed. The Provost may also amend, alter or revise the decision and, therefore, the Provost is responsible for the final decision. The Provost will render a decision within thirty (30) calendar days after the appeal/grievance has been submitted to the Provost as described above.

Peer Tutoring Program

Juniata offers a popular, campus-wide program of peer tutoring. Peer tutoring is available in any offered course to each student who desires additional help with subject material. Before requesting tutoring assistance for a course, students must discuss their academic performance with the course instructor and ask for his or her verbal permission; some faculty would prefer to work with a student during office hours before tutoring begins. In select courses, tutoring is offered in the form of group review sessions, and there are also small group tutoring opportunities in which two or more students work with a peer tutor.

A reasonable amount of tutoring is available at no charge to the student, but the number of hours of tutoring per week may not exceed the amount of time spent in lecture each week (three to four hours/week would be the maximum).

Request for tutoring is seen as a commitment from the student asking for assistance and is an obligation that requires consideration and motivation. Tutees are expected to arrive at prearranged meetings appropriately prepared and to notify tutors when they are unable to make an appointment. A tutee who fails to show up for prearranged meetings more than two times will have his or her tutoring privileges revoked for the remainder of the semester.

Students/tutees understand that tutoring is a supplement to class preparation, class attendance, and faculty office hours assistance—it is not intended to replace any of these critical academic responsibilities. Students who are motivated to get the most out

of tutoring find that the program is very successful for them.

All tutors have faculty recommendation, must make application for the position, and have an interview with a QUEST staff member. In addition, each tutor must attend one hour of training per semester to maintain the program's integrity and to help tutors maximize their tutoring skills.

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Student Life

Student Life

Athletics and Recreation

The commitment of the Juniata College Athletic Department is explicitly linked to the educational mission of the institution. Juniata athletics emphasizes fair play and sportsmanship co-existing with a high degree of competitiveness in all varsity programs. Such competitiveness applies as well to the academic efforts of Juniata student-athletes. Care is taken to assure the overall health and well-being of students in and outside of the training and competitive arenas. The dynamics of equitable and fair treatment of men and women within Juniata athletics is thoroughly examined and pursued.

The College promotes recreation, physical activity, and athletic programs for all students. Intercollegiate varsity sports offered for men: baseball, basketball, cross country, football, soccer, tennis, track (indoor and outdoor), and volleyball; for women: basketball, cross country, field hockey, soccer, softball, swimming, tennis, track (indoor and outdoor), and volleyball. In addition, clubs compete in a variety of sports largely determined by the interest of the student body. Active clubs include, or have included, men's and women's rugby, ultimate frisbee, men's and women's lacrosse, equestrian, and golf. A variety of recreational clubs ranging from skiing and snowboarding to dance and the martial arts are also available.

Intramural programs include: basketball, indoor soc-

cer, and bowling.

Juniata is a Division III member of the NCAA, the Eastern Collegiate Athletics Conference (ECAC), the Landmark Conference, the Centennial Conference (football only), and the Continental Volleyball Conference (men's volleyball only).

The Kennedy Sports+Recreation Center includes a 25 meter natatorium, a fully equipped 5,500 sq. ft. Fitness Center, two separate gymnasiums for volleyball and basketball, two handball/racquetball courts, and an indoor walking track. Outdoor facilities feature playing fields for football, soccer, field hockey, baseball and softball as well as seven tennis courts and an eight-lane track.

Beyond the facilities explicitly provided by the College, the Huntingdon area is rich with opportunities for fishing, hunting, hiking, boating, canoeing, rafting, swimming, camping, downhill and cross-country skiing and golf.

Campus Ministry

Although Juniata is chartered as an independent college, it was founded by members of the Church of the Brethren and continues to value the importance of a spiritual dimension as a part of individual growth. Through the campus ministry office, located in the college's Unity House, students are encouraged to integrate their faith and vocational direction and offered opportunities to become involved in meaningful religious activities. Campus worship opportunities include weekly Catholic Mass and regular interdenominational services. In addition to worship, there are regular opportunities for students to engage in study of scripture, community service, prayer, observation of Holy days, interfaith dialogue, and informal fellowship. There are also several active religious and faith focused clubs that support the spiritual growth of our students. Juniata's religious programs are guided by the College Chaplain, campus ministry staff, and a variety of student leaders. The Juniata student body reflects a diversity of religious faiths and the local community provides worship opportunities for Jewish, Protestant, Eastern Orthodox, and Roman Catholic students. The Stone Church of the Brethren, which is adjacent to campus, a prayer labyrinth outside the library, and an interfaith meditation room in the Unity House are available for private meditation and prayer.

Co-Curricular Transcript

Students are encouraged to utilize a Co-Curricular Transcript (CCT) to document and validate their out-of-class experience. The CCT process enables students to structure their personal development outside the classroom by matching individual needs and goals with available experiences to stimulate growth and learning in specific areas. The CCT documents a student's leadership and involvement in student programming and provides an opportunity for the student to reflect on his or her development outside the classroom. Information and materials to start a CCT are available in the Career Services Office.

This same document is used to recognize the efforts of those students who perform community service throughout their college career. Students who perform at least 120 hours of non-paid, non-credit volunteer work can receive transcript notation through the Community Services Office.

Dining Services

Baker Refectory, located on the first floor of Ellis Hall, is the main dining hall choice for students on a College meal plan. All residential students are required to select one of the appropriate meal plan options. The dining room is an "all-you-care-to-eat" facility open for breakfast, lunch, and dinner in accordance with the College calendar. Students may select from assorted made-from-scratch entrees, including vegetarian selections at each meal, grill and pizza lines, exhibition cooking station, and more!

Jitters, On the Go! Café, and **Beeghly Library 365 Market** are available for a cup of coffee or a quick snack between classes.

Monies from a spending account (called DCB) associated with all of the meal plan options may be used by students at any of the above dining facilities. Students are required to bring their ID cards with them to all meals, admittance will not be granted to the Baker Refectory without an ID card. The DCB balance at the end of the fall semester carries over to the spring semester; the DCB balance associated with meal plans that is not used by the end of the academic year is forfeited. Additional DCB dollars may be purchased throughout the semester.

Firearms and related items

Illegal and/or dangerous weapons, including but not limited to BB / pellet guns, sling shots, and pneumatic weapons that resemble a real firearm, are not permitted on campus. Violators will be subject to disciplinary action and arrested if appropriate. Legal and approved firearms used for sport, target shooting, or hunting, ammunition, archery equipment, knives and other edged - weapons with blades exceeding three inches, and/or devices that can be considered a danger to the campus community must be registered and stored in the Public Safety Office. Firearms that are being stored at the Raystown Field Station must be registered with college staff designee and kept in the gun safe on site.

Handguns and assault weapon platforms are prohibited from being registered.

Students must complete an application/registration for each firearm.

All firearms being transported to or from campus must be secured and placed within an approved firearms carrying case.

Registered firearms and/or dangerous weapons are not permitted in administrative/ academic buildings or college residence halls. Failure to comply with this regulation may result in expulsion from the college and/ or arrest.

Public Safety or college staff designee reserves the right to not sign out a firearm to a student if he/she appears to be in an altered mental state, under the influence, or the request is not consistent with traditional hunting times.

With proper identification and registration card, students may sign-out their registered items by contacting the Public Safety Office or college staff designee.

Health and Wellness Center

Wellness is important at Juniata. Students are encouraged to optimize their physical and emotional health. Although prevention is the primary focus of the Health & Wellness Center, intervention is also provided through the following services:

Medical Services:

The center is staffed by a nurse and administrative as-

sistant Monday thru Friday and visiting physicians on Wednesdays from 9:00 a.m. to 4:00 p.m; Friday mornings from 9:00 a.m. to noon and Mondays evenings from 6:00 – 8:00 p.m. Treatment is provided for minor injuries and ailments and routine care of chronic illnesses for full-time students. A health fee is assessed each semester for medical and counseling services. The fee is for services and is not a supplemental form of health insurance. For comprehensive and specialized care, students are referred to the local hospital or to other medical facilities in the area. All full-time Juniata students are required to provide proof of insurance. If proof is not provided, full-time students will be charged a premium and enrolled in a student accident insurance program.

For additional information, please visit the Health and Wellness Center site at <https://www.juniata.edu/offices/health/>

Counseling Services:

The Health & Wellness Center also provides personal counseling for all students. Each student may receive up to ten sessions of counseling per year free of charge. These services are provided by master's level therapists who are supervised by the center's consulting psychiatrist. All services are confidential and are not included on the student record. Counseling services also include assessments, screenings, prevention programming, appropriate referrals, workshops/presentations, support groups, drug and alcohol education programs, and when appropriate, referral to the center's consulting psychiatrist.

Identification Cards

The College ID card must be presented for admission to meals and to many of the activities at the College, including home athletic events and various college sponsored programs. It also is used for checking out materials at the library. Used primarily for identification, the card should be carried at all times. Identification cards are non-transferable. If lost or stolen, the ID card can be replaced by request at The Public Safety Office. A fee of **\$20.00** is charged for replacement, **\$10.00** Fee is charged to replace a damaged ID card, the damaged card must be returned.

Failure to show an ID card in response to a request by a college official will result in a **\$10.00** fine.

Inbound Retreats

Inbound Retreats help first-year Juniata students become aware of and engaged in our academic and co-curricular community. New students arrive on campus early and participate in retreat options designed to provide a smooth transition into college.

Each retreat is led by two Peer Leaders who are upper-class Juniata College students and one faculty/staff advisor.

Goals:

Inbound Retreats is a social, transitional program for first-year students. Upon completion of the Inbound program through small and large group activities, students will:

- Establish new social relationships;
- Become acclimated to the campus and surrounding community;
- Experience less anxiety about starting college;
- Become acclimated to collegiate living;
- Learn ways in which to become engaged and involved on campus;
- Become more confident with oneself;
- Gain knowledge about collegiate interests; and
- Meet faculty, staff and/or community members which serve as additional resources to students.

To learn more: <https://www.juniata.edu/offices/dean-of-students/inbound/>

Juniata Activities Board (JAB)

JAB plans and executes a broad range of social, cultural, educational, and recreational programs for Juniata College students and the Juniata community. Through various committees, JAB coordinates many of Juniata's traditions and late night activities. JAB committees typically include: Welcome Week and Finals Blowout, Mountain Day, Tenting and Madrigal, Festifall and Springfest, marketing, and JAB special events.

Mail and Banking Services

The College postal service is located on the ground

floor of Ellis Hall. Students receive one assigned post office box for their entire stay at Juniata. A deposit is required in order to receive a mailbox key. Students should use their post office box number as part of their Juniata address. Stamps are available at the post office and parcels can be mailed there during open hours.

An automatic teller machine is available in Ellis Hall.

Orientation

The Summer Orientation program consists of parallel programs for new students and their parents. The orientation program includes faculty advising for class registration, discussions on residential living, and sessions on various other adjustment concerns. Parents meet in groups with college administrators and faculty to share concerns, discuss services available to both students and parents, and participate in question-and-answer sessions. Students participate in a variety of informational and social activities designed to help them become more familiar with college life and the unique traditions and opportunities at Juniata. Recreational opportunities are also a part of the Summer Orientation program.

Prior to the first day of classes, new students consult with advisors, confirm their course registration, meet with Residence Staff, and participate in planned college activities to inaugurate the new academic year.

The College also provides special orientation programs specifically designed for the following distinct student groups: visiting high school students, and international students.

Parking and Vehicle Registration

All students and employees who bring motor vehicles to the college area, whether to the campus itself or not, must register their cars, motorcycles, motor scooters or motor bikes with the Office of Public Safety. The online vehicle registration form can be accessed by following the link on the home page of the Public Safety's website. Upon approval of the registration form, a display sticker is issued and should be placed on the left side of the rear bumper. Failure to register a vehicle by a student results in a fine. The registration decal is valid for the entire academic year and is non-transferable.

For additional information, go here: <https://www.juniata.edu/offices/security/policies/parking-traffic-regulations.php>

FEES FOR VEHICLE REGISTRATION

The vehicle registration fee is: **\$75.00**

The vehicle registration is billed to the students tuition account, during the processing procedure.

PARKING

A valid vehicle registration permit properly displayed entitles a student to park in student parking areas only; parking in unauthorized areas subjects students to a fine.

TRAFFIC REGULATIONS

In addition to the rules and regulations for operating a motor vehicle in the Commonwealth of Pennsylvania, there are several regulations peculiar to the Juniata campus:

1. Pedestrians shall at all times have the right of way.
2. All Vehicles shall operate at a safe speeds
3. All vehicles shall comply with all traffic devices, stop signs, etc.
4. No vehicles, including two wheel motorized vehicles shall be operated or travel over, or park on, any grass area, concrete walkway,
5. Failure to comply with this regulation will result in a fine and may include loss of on-campus driving privileges.
6. Improper operation of any motor vehicle within the College jurisdiction will result in a citation or revoking of motor vehicle privileges on campus

PUBLIC SAFETY OFFICE

The Public Safety Office is committed to providing a safe and secure environment as essential to the Juniata College community. The Public Safety Office focuses on the protection of college assets, but the primary goal is to assure a safe, secure, and comfortable living environment which promotes learning and personal development. Respect, consideration, and fairness to others are paramount in our daily operations.

For additional information, go here: <https://www.juniata.edu/offices/security/>

REGISTERED STUDENT ORGANIZATIONS (RSO)

Juniata College offers students over 90+ Registered Student Organizations (RSO), which represent an array of student interests. Students can sign-up for RSOs at either our Fall involvement fair (Lobsterfest) or learn about upcoming RSO meetings/events through the Daily Announcements. If students would like to contact a specific organization, a current list of active RSOs, officers and advisors is located on the P: Drive, under StudentActivities, "Registered Student Organizations."

Residence Life

Juniata is a residential campus and, as such, residence hall experiences are designed to complement the formal instructional program. Guidelines for residence hall living are provided in detail through the campus computer network, EagleNet, in the student handbook, *The Pathfinder*; and in its periodic supplement, The Student Services Newsletter.

With a limited number of exceptions, students are expected to live in college-owned facilities. To secure permission for non-campus housing, arrangements must be made in the prior spring and approval is based on the number of spaces available on campus. Students will not be permitted to move off campus during the academic year. Upper-class residential students choose their rooms on class standing and grade point average (GPA).

RESIDENCE HALL STAFF

Juniata seeks to provide the best possible living experience in the residence halls. This begins with qualified, caring, and well-trained staff. Staff members in each building are carefully selected, and trained, and are willing to help students have a successful campus living experience. One of the first people students meet on check-in day is the Resident Assistant, better known as the RA. Resident Assistants are assigned to each residence hall floor to help with the adjustment to community life and are instrumental in planning activities to help students become acquainted with their living environment. In addition, RAs are available throughout the year to assist with academic, personal, and community living concerns. Resident Assistants

are specially trained upper-class students who are able to answer many questions about Juniata and the residence halls. Resident Assistants report to live-in Residence Directors, known as RDs. Residence Directors are professional staff members who manage each residence hall. They supervise the hall staff, coordinate programs and activities, and work with the student judicial process. Residence Directors can answer many questions about policies and procedures and the campus in general.

RESIDENCE HALL PROGRAMS

The residential staff offers a wide variety of activities in which students can participate. These programs are planned and organized by students, (RA) Resident Assistants, and the (RD) Resident Directors. Everyone is encouraged to make their interests known, to become actively involved in planning events, and to participate. The staff assists on the floor to develop programs that enhance a sense of community. These programs generally have a social and/or educational focus.

LIVING OPTIONS

Juniata's residence halls are smoke-free living environments.

Eco House: The everGREEN Eco House encourages students to develop and promote a sustainable and 'green' lifestyle. Living in this coed house provides an opportunity to live and work with other students who are committed to the campus community's goal of becoming more sustainable.

Global Village: the Global Village is a distinct globally-themed living and learning community designed to provide opportunities for intensive, in-depth cultural interaction and community development. The GV combines language and cultures in a living/learning experience. Residents come home to speak and hear the language of their themed housing. The GV welcomes native speakers; non-native students who have lived, traveled extensively, or studied abroad; and students enrolled in language courses. We currently have Spanish, German, French and Chinese housing along with the Intercultural floor in Terrace Hall.

Co-ed: South Hall is available for upper-class students who choose to live in a community in which men and women live on the same floor. These are gender specific by room.

Female only: Leshner Hall an all-female resident hall.

Available to upperclass and freshmen students.

Suites: East Houses apartment style living, housing 8 students. There are 4 bedrooms, a common room and bathroom. Each room is air conditioned.

Student Activities 53

STUDENT GOVERNMENT

Elected by students, members of Student Government represent the interests and the concerns of the student body in a variety of ways. Student Government officers serve as student representatives on faculty and trustee committees and serve as the governing body for the 90+ Registered Student Organizations.

Student Conduct

ALCOHOL

The College maintains that the use of alcohol and other drugs is not necessary for the success of social occasions.

Although students are considered adults for most phases of community life, Pennsylvania State Law prohibits the purchase, possession, or consumption of alcoholic beverages by persons under 21 years of age. Persons who furnish alcoholic beverages to those under 21 are subject to civil liability and criminal prosecution. Local ordinances and state laws also prohibit open containers of alcoholic beverages in public areas and in vehicles. College policy permits only students 21 years of age and older to possess or consume alcoholic beverages on campus.

DRUGS

Juniata considers the possession and/or use of illegal or dangerous drugs a serious violation of College policy. Disciplinary action for involvement could lead to separation from the College. The College will assist the efforts of law enforcement officials who are investigating the involvement of persons with illegal or dangerous drugs.

Since the use of drugs, including alcohol, may be associated with medical and psychological problems, students may be referred, or refer themselves, to the counseling and medical resources of the College and/or the local community.

SEXUAL HARASSMENT

It is Juniata policy to promote and maintain a campus environment free of all forms of discrimination, intimidation, and exploitation, including sexual harassment. The use of one's institutional position or authority to seek or solicit unwanted sexual relations with a member of the Juniata community is incompatible with the mutual trust and respect among members of the College community fundamental to the mission of Juniata. If a student has a supervisor, teacher or coach who has used his or her position to seek or solicit unwanted sexual relations, that student should report the matter to the Director of Human Resources (employment-related problem), the Provost (professor-student incidents), or the Dean of Students (student-student incidents). A copy of the sexual harassment policy is distributed to all students under separate cover. Additional copies are available from residence hall staff, the Dean of Student Office, and the Human Resources Office.

Admissions and Cost

Undergraduate

Guidelines for Entering Freshmen

The Admission Committee encourages students to apply to Juniata if they demonstrate the proper desire, motivation, and maturity needed to benefit from a four-year private college experience. Such qualities are evaluated through the application requirements listed below. The Admission Committee places the most emphasis on a student's high school transcript. In addition, standardized tests, activities, community involvement and all the things that make up the student's life are important in the review. Juniata seeks a broad student population base that includes a wide geographic and cultural representation from a variety of social and economic backgrounds.

The College reserves the right to determine which ap-

plicants will be admitted. The selection of candidates is made without regard to race, sex, religion, creed, national origin, and or handicap.

APPLICATION AND INFORMATION

Students may apply to Juniata using the Common Application any time after completion of their junior year in secondary school. The Common Application begins accepting applications August 1 of the senior year. A complete secondary school transcript indicating courses and grades (including senior year courses and grades to date) must be sent from the applicant's guidance office along with SAT-I and/or ACT scores, an essay, and a letter of recommendation.

Candidates for freshman admission can choose from three application options - Early Decision I, Early Decision II, and Regular Decision:

- **Early Decision – Application Deadline November 15.** The Early Decision option is available for those students who know that Juniata is their number one choice. Early Decision is a binding agreement; applicants agree to apply ED only to Juniata and to enroll if offered admission. ED students receive admission notification by December 15th. Accepted ED students will receive financial aid notification by late January. A non-refundable \$400 deposit is required by February 15th. Please refer to the Early Decision Information section of the Common Application when deciding whether or not to apply as an ED candidate.
- **Early Action – Application Deadline Dec. 1.**
- **Early Action II - Application Deadline Jan. 15th.** The Early Action option is available for those students who decide that Juniata is one of their top choices and would like to submit and hear their admission decision earlier than Regular Decision. Once all required materials are received, EA applicants will typically receive an admission decision by February 15th. If applying for need-based aid, students must complete the FAFSA by February 15th. The EA option is non-binding agreement. Students accepted as an Early Action candidate must submit a non-refundable \$400 deposit by May 1 to reserve a space in the entering class.
- **Regular Decision – Application Deadline March 15*.** Regular Decision Candidates are encouraged to apply in the fall. Decisions are released based on application round, and date of submission. Most Regular Decision candidates will hear back by March

1st. Students who apply before November 1 may receive an admission decision in the fall. Students applying after January 1 will receive a decision 4 to 6 weeks after the application is complete. Students who wish to be considered for all additional competitive scholarships should have their application submitted no later than January 5. Students accepted as a Regular Decision candidate must submit a non-refundable \$400 deposit by May 1 to reserve a space in the entering class.

Note: Students who wish to be considered for all additional competitive scholarships should have their application submitted no later than January 1. Most merit scholarships are not determined based on date of submission, and admission preference is not given to those who apply earlier in the application period.

* - Please call the Enrollment Center (814-641-3420) to inquire whether applications are still being accepted beyond any application deadline.

CONTENTS OF APPLICATION

An application for admission consists of the components listed below. Credentials that are reviewed include: high school academic record, SAT or ACT test results, completed application form including evidence of extracurricular involvement, recommendation letter(s), and a personal essay.

High School Transcript A secondary school program including at least 16 college preparatory courses from an approved public, private, or parochial school must be completed or anticipated. These courses must include a minimum of four years of academic English, two years of a foreign language, and a combination of mathematics, laboratory science courses, social sciences and humanities.

A complete secondary school transcript must be sent from the applicant's guidance office, noting all courses taken and grades received from the freshman year through the junior year. A listing of courses to be taken in the senior year should accompany this transcript and grades from the first marking period and/or the first semester should be sent when they become available. Upon graduation, students must submit a final secondary school transcript noting graduation date and guidance counselor signature or raised seal.

Standardized Test Results Results of the Scholastic Assessment Tests (SAT-I) taken in the junior and/or senior year are required unless the student chooses

to participate in Juniata's Optional Standardized Test Program. The American College Test (ACT), taken in either the junior or senior year, may be substituted for the SAT-I. Applicants whose native language is not English also must provide results of a Test of English as a Foreign Language (TOEFL) or scores from an approved English language program. International applicants who have studied wholly in an English speaking high school are required to submit an SAT/ACT score. All other international students are not required to submit SAT or ACT scores but should still submit TOEFL (or similar) results. SAT-II: Subject Tests are not required but may be submitted for admission consideration. Contact the Admissions Office for more information.

Application Form Juniata uses the "Common Application" and the "Coalition Application". Application forms may be submitted at www.commonapp.org and <http://www.coalitionforcollegeaccess.org/>. Only one application is required. The application requires a listing of extracurricular activities in both school and community, guidance counselor or teacher letter(s) of recommendation, and an essay which answers one of the essay questions listed in the application for admission. The applicant should complete the form and submit it online.

CAMPUS VISITS

Although not generally required for admission, the College strongly recommends that each prospective student make a visit to campus. A campus visit serves as an opportunity to learn more about the College, its students, and faculty, and is a great way for the admission team to meet interested students. During the academic year, the enrollment center has a variety of visit options. Students are encouraged to visit <https://www.juniata.edu/admission/campus-visit/> to select the appropriate visit program to serve their information needs. In general the Enrollment Center is open 9 a.m. to 3 p.m. Mondays through Fridays from September through April, and for selected Saturdays from 10 a.m. to 1PM. Appointments for the summer months can be scheduled for 9 a.m. to 2 p.m. weekdays. Please contact the Office of Admission at 814-641-3428 for more information or to schedule an appointment.

GUIDELINES FOR TRANSFER STUDENTS

Applicants are considered transfer students if they have graduated from an approved secondary school

program and completed the equivalent of one full-time semester of coursework at a regionally accredited community college, junior college, or four-year institution. Student's work will be evaluated on a case-by-case basis. Notification of a transfer admission decision is given within one month upon receipt of all credentials.

Application deadlines for transfer students are July 1 for fall semester entry and December 1 for spring semester entry, though earlier submission is highly encouraged.

First semester freshmen who transfer a semester worth of transfer credits may have to take CWS (College Writing Seminar) even if they have taken English credits. All students must complete the CWS intake essay, and will be evaluated on a case by case basis regarding whether or not they will be required to take CWS.

CONTENTS OF TRANSFER APPLICATION

An application for transfer admission consists of the following components:

Application Juniata uses the "Common Application" Transfer Application. Forms may be obtained at www.commonapp.org. The application requires transfer statement which explains why the student wishes to transfer. The applicant should complete the application and submit online.

High School Transcripts The Office of Admission requires an official, final high school transcript indicating final grades, class rank (if applicable) and date of graduation. The transcript should be sent directly from the school to the Juniata admission office. Students with more than 24 credits are not required to send their high school transcripts.

Standardized Test Scores SAT and or ACT scores should also be submitted. Scores can either be sent directly from the testing agency, or may be indicated on the official high school transcript. Juniata's code number for the SAT is 2341, and for the ACT 3600. SAT/ACT results are often waived for qualified transfer students whose previous institution did not require scores for admission.

College Transcripts Transfer applicants must also submit an official transcript from each college previously attended and a college catalog or course descriptions of classes taken at previous institutions.

The transcript must be sent directly to Juniata from the former institution(s). Catalogs and course descriptions are used to evaluate transfer credit.

Transfer College Report Form The Transfer College Report Form is a required document before your matriculation to Juniata College. It must be completed by a college official who has access to your academic and disciplinary records. The form can also be found at <https://www.juniata.edu/admission/student-info/transferring-credits.php>

FINANCIAL AID

All transfer students offered admission are eligible to apply for financial aid. The application procedure is the same as that for new freshman students and is found under the section "Student Finances." For further information, contact: Molly Thompson, Transfer Coordinator, thompsm@juniata.edu, 814-641-3425.

TRANSFER CREDIT

Juniata does not accept in transfer any coursework below a grade of "C-" nor coursework of a strictly technical or remedial nature, nor physical education coursework. Credit is normally only awarded for courses taken at an accredited institution. Special circumstances may affect the transferability of an individual student record. These cases will be handled on an individual basis and decisions will be based on Juniata's academic policy. An official credit evaluation will be completed by the Office of the Registrar **after** a student has been admitted to Juniata.

Students will have their work evaluated on a course-by-course basis. Courses equivalent to Juniata's curriculum course description will be granted direct course equivalence. Coursework accepted in transfer may be used to meet both liberal arts graduation requirements and Program of Emphasis requirements.

While Juniata will accept credit from any regionally accredited college or university, the college has formal transfer agreements with Harrisburg Area Community College and Penn Highlands Community College. Articulation agreements are in place to facilitate the transfer of credit from one institution to another. Contact the Transfer Coordinator at either institution for more information.

Other Admissions Programs

SUPPORTED ADMISSION

Students who are offered Supported Admission are admitted to Juniata with the belief that they have the potential to succeed in college, but would benefit from extra mentoring and assistance from QUEST staff.

During the fall semester, all freshmen enroll in the required four-credit foundation course - College Writing Seminar - designated to provide first year students with reading, writing, computer, library, time management, and study skills necessary for success in college. For a Supported Admission student, a specially designated Freshman Advisor is the student's CWS instructor or a professor during the first semester. Freshman Advisors work closely with students to monitor their academic performance and address individual needs.

The program for Supported Admission students includes regularly scheduled, required appointments with an academic counselor (at least five such meetings) throughout the fall semester to monitor and assess progress in each class, discuss issues related to transitioning into college, discuss how to prepare for and take tests, give pre-registration advice, assist with selection of a second adviser, and review many other topics appropriate to the individual circumstances of each student.

Supported Admission students also benefit from resources offered through or coordinated by QUEST. These include use of the Writing Center, how to best utilize the faculty and advisors, determining when referral to the counseling center is appropriate, how to build an academic schedule and design a Program of Emphasis, how to go about exploring possible careers, etc. There is a broad network of support and advisors available to all students.

While receiving the additional support described herein, Supported Admission students carry a typical course load of 12-16 credits during the first semester and are in no way distinguishable from their peers in the classroom. Upon completion of one semester in good academic standing, the student is no longer required to have regular appointments with QUEST staff, but is able to utilize the office's continued advocacy and resources.

DEFERRED ADMISSION

Deferred Admission is designed for students who wish to begin their college studies at a time other than the fall semester after graduation from secondary school. Application procedures and requirements are the same as for all other applicants. Candidates should note their interest to be considered under the Deferred Admission Program by contacting the admission office. Students may defer admission for up to one year.

SPRING SEMESTER ADMISSION

Application procedures and requirements are the same as fall admission. The Spring semester application deadline is December 1, though earlier submission is encouraged. Interested persons may contact the Enrollment Center for further information.

EARLY ADMISSION

Juniata encourages applications from students who demonstrates the aptitude, desire and maturity to begin college level work prior to the completion of his/her secondary school program. Students may consider enrolling at Juniata the last year or the last semester of their senior year. A formal application for admission must be completed. In addition students must: 1) Have an admission interview on campus; 2) Provide a written recommendation from their guidance counselor supporting their application for early admission and indicating they will receive a diploma either at the end of their junior year or after they have successfully completed one year of college level work, which includes college level English; and 3) Provide a written statement from their parents indicating approval of early admission. Applicants are expected to meet all other admission requirements.

HOME-SCHOOLED STUDENTS

Juniata welcomes applications from students who are home-schooled and have been approved by their local school district. Students must submit an application for admission and include standardized test results, an application essay, letter(s) of recommendation and portfolio of academic work. Students are also encouraged to interview and submit additional information to support their application. Please contact the Juniata Home School Coordinator in the Enrollment Center for further information.

INTERNATIONAL STUDENTS

International students are strongly encouraged to submit applications. The procedures for admission are the same as for other freshman or transfer applicants. In addition, for applicants whose native language is not English, a TOEFL score of 80 Internet-based (or equivalent IELTS or Pearson PTE Academic) or higher is required for unconditional admission to Juniata.

Minimum section scores are also required. (<https://www.juniata.edu/academics/departments/international/english-for-academic-purposes/courses.php>)

All students who submit a TOEFL score, however may still be tested upon arrival to ensure appropriate course placement, including ESL courses. If you have submitted a score lower than 80 iBT/550 PBT, or you test below that level on arrival, your status will be English-Conditional. Students who have studied in the US or have been taught in a curriculum where the language of instruction is English may be eligible for a TOEFL waiver. Please contact the Admission office for details.

A complete set of original or notarized educational credentials with certified English translations is also necessary for international applicants and is required before eligibility for admission can be determined. In addition, an affidavit of financial responsibility is required (by U.S. law) before an I-20 form (necessary for procuring a student visa from a U.S. Embassy or Consulate) can be issued.

Further information regarding international applications is available from:

Director of International Admission

Enrollment Center

Juniata College

Huntingdon, PA 16652-2196 USA

FAX: (814) 641-3100 E-mail: usastudy@juniata.edu

ENGLISH-CONDITIONAL ADMISSION

International applicants with TOEFL test scores of 52 - 79 Internet-Based (iBT)*/470 – 549 Paper-Based (PBT)* may, if otherwise qualified academically, be granted English-Conditional (EC) Admission, provided they complete the appropriate English as a Second

Language (ESL) coursework in Juniata's English for Academic Purposes (EAP).

The IEP follows all Juniata policies regarding advancement in its courses. Students may earn up to 15 credits in their ESL courses toward graduation requirements. While taking ESL courses the IEP faculty evaluates the students' English proficiency and they may enroll in academic coursework outside the IEP when appropriate.

*Equivalent IELTS and Pearson PTE scores are also accepted.

INTERNATIONAL BACCALAUREATE

International Baccalaureate Diploma recipients are granted credit for one full year (30 credits) toward a degree at Juniata. Students who have an IB Diploma normally enter the College with sophomore standing. IB certificate recipients receive course credit for each higher level examination passed with a score of 5 or higher. To receive this credit the student will meet with the appropriate department chair or designee to consider the advantage or disadvantage of accepting credit. IB credits may be counted toward degree requirements.

NON-DEGREE STUDENTS

Any person who wants to take coursework at Juniata as a non-degree student need not apply for admission consideration, but must provide proof of academic ability. The Registrar enrolls and registers all non-degree candidates.

Non-degree students are required to fill out the registration form located at our Registrar's Office website under Class Schedules: <http://services2.juniata.edu/registrar/jcsa/index.php> Cost of course credit will be the tuition charge of part-time tuition.

Non-Traditional Student Admission Programs

RETURNING ADULT STUDENTS

Qualified students who have been away from the classroom are welcome to attend Juniata. Courses are offered for both degree and non-degree seeking students and may be taken on either a full-time or part-time basis. Students are enrolled in regular Juni-

ata classes; there are currently no evening, weekend, or accelerated programs for returning adult students. Students must meet admission criteria. Degree-seeking students may apply either as transfer or freshman students. Consult the Enrollment Center for further details.

EDUCATION CERTIFICATION PROGRAM

Students with a B.A. or B.S. from an accredited four-year American college or university and who meet Education Department criteria may take courses at Juniata to receive their education certification. Students may take courses on a full-time or part-time basis. A minimum 3.0 cumulative GPA in the student's previous coursework is required. Consult the Enrollment Center or Education Department for further details.

SECOND BACCALAUREATE DEGREE PROGRAM

Students who have earned a bachelor's degree at an accredited, domestic American university or college and desire a second bachelor's degree reflecting in-depth study in a discipline other than that of their first degree may enroll upon completion of application requirements. Courses from a previous degree will be evaluated on a course by course basis and may be used to fulfill graduation requirements. Students must meet all Juniata graduation requirements, fulfill the department requirements within the new discipline, and observe the College residency requirement. International students who desire a second degree will be evaluated individually for their candidacy. For further information, contact the Enrollment Center.

SENIOR CITIZENS PROGRAM

Citizens who are 60 years of age or older may take courses on a part-time basis.

HIGH SCHOOL STUDENT PROGRAM

Juniata continues to support what was previously known as Dual Enrollment for high school students in our non-degree visiting student program for Huntingdon County and the surrounding area. In the interest of promoting a positive post secondary experience, eligible high school juniors and seniors may take one course per semester (maximum of 4) with approval from their high school guidance counselors or instructional supervisor. Student eligibility and readiness for college-level course work is determined by the high school guidance counselor or instructional supervisor.

Course availability and registration is based on open seats and prerequisite and co-requisite requirements. All College policies regarding registration, tuition and fees are applied. Tuition does not include fees for labs, field trips, supplies, books or other incidentals. High school students are not permitted to register for College Writing Seminar (CWS), Internship, Credit by Exam, or Independent Study. Registration is facilitated by submitting the Visiting Student Registration form to the high school guidance counselor, or the student's instructional supervisor, who will forward the approved registration form to the Registrar's Office at Juniata College. Tuition for the High School Student Program is \$100 per credit. Tuition statements are sent directly to the student, not the high school. Students who are eligible for free or reduced lunch at their high school are eligible for free tuition in the High School Student Program.

Graduate

Cost and Financial Aid

STUDENT FINANCIAL PLANNING

Juniata College offers a wide array of student financial planning services, ranging from deferred payment plans to scholarship programs. The Office of Student Financial Planning provides substantial, diverse funding and planning opportunities for all families regardless of means.

Families may have unique circumstances that affect their ability to meet college expenses. While some families may have little interest in traditional forms of financial assistance, others require support from the many resources available from federal, state, and institutional programs. Student Financial Planning staff members are available to help identify sources of financial support, and to discuss funding resources and opportunities.

Sources of Aid

Generally, the resources available to provide assistance fall into three broad categories: scholarship and grant, loans, and work.

Scholarships and grants are commonly termed "gift" assistance and need not be repaid (unless so stipulated as a condition of the award).

GRANTS

Grants are usually provided to meet a student's financial need as established through the submission of the Free Application for Federal Student Aid (FAFSA). Please review the section titled, "APPLYING FOR FINANCIAL AID" for further information.

SCHOLARSHIPS

Scholarships are generally awarded in recognition of academic achievement, talent, or some other characteristic. Financial need may not necessarily be a selection requirement.

Competitive Scholarship programs:

Juniata offers an array of competitive scholarships that recognize the outstanding achievements of incoming students without regard to financial need. Academic **Scholarships at Juniata reward students who do well academically, but also contribute to their school and community by getting involved.** For most scholarships at Juniata, all you have to do is apply to be considered!

The list of possible academic scholarships is listed below:

- **James Quinter Scholarships** – honors the College's first president
- **Calvert Ellis Scholarships** – honors the president who led Juniata in the post-World War II era
- **M.G. Brumbaugh Scholarships** – honors the College's third and fifth president
- **Elizabeth Baker Scholarships** – honors a philanthropist dedicated to the pursuit of peace
- **Juniata College Scholarships** – honors the College's learning philosophy, tradition and alumni
- **Phi Theta Kappa Transfer Scholarships** – Two scholarships are awarded annually to Phi Theta Kappa students who transfer to Juniata. Students who have active PTK membership at their current community college and at least a 3.85 GPA are eligible for consideration
- **Scholarships in Science, Technology, Engineering and Math (S-STEM) for Transfer Students** – In con-

junction with the National Science Foundation, Juniata will award six scholarships worth up to \$10,000 to students who transfer to Juniata in their junior year from a strong two year college. The awards are competitive and are based on academic achievement, financial need, and commitment to student a STEM area. As part of the scholarship, each student will also receive a paid and mentored summer undergraduate research experience at Juniata.

- **Top Scholar's Award**

Other academic scholarships that are not awarded every year include the W. Clay and Kathryn H. Burkholder Scholarship, Ronald L. Cherry Scholarship, Richard M. Simpson Scholarship and Larry Johnson Scholarship.

Juniata College also offers **Heritage and Ray Day Scholarships** to students who show commitment to academic excellence, leadership and community service that culminate in a level of understanding among diverse groups.

"External" Scholarships

Many students receive scholarships that are awarded by agencies other than Juniata (Lion's Club, PTA, Rotary, etc.). Students are encouraged to explore these opportunities that often reduce the family's cost of education.

LOANS

Loans permit students and parents to defer a portion of the cost of education over an extended period of time. The federal government, the College, and private agencies offer programs that seek to provide educational financing at reasonable rates. Further information is available from the Office of Student Financial Planning.

STUDENT EMPLOYMENT

Juniata provides both on and off-campus student employment opportunities to help defray educationally related expenses. While the College cannot guarantee that every eligible student will secure employment, there has been an even balance between available positions and students interested in work. Further information about available positions may be found on the Arch.

COMMUNITY WORK STUDY

The Community Work Study Program places Federal Work Study-eligible students at community agencies across Huntingdon County for part-time employment in service to the community. Students earn minimum wage while aiding organizations, become more efficient with program/event planning and reach out into the community. Tutoring programs such as the Huntingdon Community Center After-School Program, the Salvation Army ARC of Learning Program and the Bethel AME After-School program work with Huntingdon Co. youth and provide tutoring for K-12. There are also positions available with other agencies. Information, position descriptions, and applications will be available in the Office of Service Learning.

Eligibility for Financial Aid

Students must meet the following conditions to be considered eligible for most aid programs.

ENROLLMENT STATUS

Normally students must be enrolled in a degree or certification program to be considered eligible for most College aid. (Exception: Half-Tuition Programs)

SEMESTER COURSE LOAD

Most institutional aid requires the student enroll for twelve or more credits per semester. Students who enroll for half-time (six or more) credits may receive federal and state resources.

CITIZENSHIP

Many aid programs require that recipients be citizens, permanent residents, or certain stipulated refugee statuses. Exceptions include several institutional aid programs and student employment.

OFF-CAMPUS/ STUDY AWAY

Generally, students who participate in College affiliated programs (including internships, student teaching, and study abroad) are fully eligible for most forms of assistance. Participating students apply for aid in the usual manner.

MAXIMUM VALUE FOR INSTITUTIONAL SCHOLARSHIPS, GRANTS, AND BENEFITS

It is College policy that any combination of institutional aid cannot exceed the value of tuition, except in several unique scholarship categories.

Juniata's Conditional Guarantee

A student's commitment to attend Juniata is matched by a corresponding commitment from the College. The Conditional Guarantee assures you that College-sponsored aid will remain unchanged for the student's four year of attendance.* Because of this you can plan and budget for each year with the expectation that College aid will not be reduced.

The following conditions must be met to maintain the provisions of the Conditional Guarantee:

- Students must meet acceptable standards of academic progress (see Catalog).
- Students must file renewal applications for aid by April 1.
- Significant changes to family or financial circumstances may result in changes to financial assistance.

Cost of Education Budget

RESIDENT STUDENTS AND THOSE LIVING IN OFF-CAMPUS COLLEGE HOUSING (2018/19)

Tuition	\$ 44,772
Room-Double	\$ 6,666
Room-Single	\$ 8,334
Board	\$ 5,856
Mandatory Fees	\$ 824
Books & Supplies	\$ 1,000
Personal Expenses	\$ 1,000
Transportation Expenses	\$ 250-900 (*varies by state)
Total (used to determine aid)	\$ 60,368
Total Direct Costs (paid to JC)	\$ 58,118

* Students from states other than Pennsylvania or Maryland will have their travel budgets increased in recognition of the additional transportation costs borne by students whose residence is geographically distant from Juniata. Contact the Office of Student Financial Planning for more information.

COMMUTING STUDENTS

Tuition	\$44,772
Mandatory Fees	\$604
Books & Supplies	\$1,000
Personal Expenses	\$2,650
Transportation Expenses	\$600
Total (used to determine aid)	\$49,626
Total Direct Costs (paid to JC)	\$45,376

Applying for Financial Aid

Requirements and Timing

New students (freshmen and transfers) must be admitted to the College before financial aid can be awarded. New students should file applications for assistance by March 1 to ensure they are considered for all available funding. Non-degree students pursuing teacher certification should contact the Office of Student Financial Planning for additional information.

Continuing need-based aid recipients must reapply each year by April 1. Students who fail to meet the deadline date cannot be guaranteed that their funding will remain at levels consistent with the previous years. The FAFSA is required.

Applications

Students and their families may have to complete several applications to receive consideration for various financial aid programs. Forms generally fall into two categories: applications used to determine eligibility for need-based aid and loan applications.

APPLICATIONS WHICH DETERMINE FINANCIAL NEED

Juniata College uses two forms to determine eligibility for assistance: The Free Application for Federal Student Aid (FAFSA), and the Institutional Data Form. Families should carefully review the following information to decide which application(s) should be filed.

information to decide which application(s) should be filed.

NEW FRESHMAN (NEVER ATTENDED POST-SECONDARY SCHOOLS)

The FAFSA must be submitted no later than Feb 15th. Electronic applications must be filed through the www.fafsa.gov website. Families are strongly encouraged to secure a FSA User ID (username & password) to serve as your login to various U.S. Department of Education Systems, including the FAFSA. Your FSA ID confirms your identity when you access your financial aid information and electronically sign Federal Student Aid documents. You should never share your FSA ID with anyone. The FSA User ID can be created by going to <https://fsaid.ed.gov>.

Each student needs a FSA ID. For dependent students, the parent providing the income information on the Free Application for Federal Student Aid (FAFSA) will also need to register for a FSA ID.

NEW TRANSFER STUDENTS OR FRESHMEN WITH OTHER POST-SECONDARY ATTENDANCE

The FAFSA (Free Application for Federal Student Aid).

RETURNING JUNIATA STUDENTS

Renewal reminders for the FAFSA will be sent to each student's email address beginning in December.

LOAN APPLICATIONS

Students are required to complete the Master Promissory Note (MPN) as the chief application for a Federal Direct Loan. The MPN will be completed only once for the student's entire borrowing history. (In subsequent years the financial aid award letter from the College will serve as the document used to preserve or adjust the loan value). Parents interested in borrowing the Parent Loan for Undergraduate Students (PLUS) follow similar procedures.

Financial Aid Standards of Satisfactory Academic Progress

All students (including international students) enrolled at Juniata College are subject to the academic standards of the College, which are printed in the College catalog. In addition, students receiving financial aid, in order to continue to receive financial aid, must meet

other requirements as described in detail in this statement of Satisfactory Academic Progress.

The Higher Education Act of 1965 (HEA), as amended, mandates institutions of higher education to establish minimum standards of Satisfactory Academic Progress (SAP) for students receiving financial aid. Program Integrity Regulations, modifying these requirements, were issued October 29, 2010, with an effective date of July 1, 2011. In order to comply with these requirements, Juniata College has established the following definition or standard of Satisfactory Academic Progress for undergraduate students.

The federal programs governed by this regulation include Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, Federal Work Study, Federal Perkins Loan, Federal Direct Student Loans and Federal Direct PLUS loans. Specific guidelines for other financial aid programs, including Juniata funded awards are noted throughout the policy and summarized at the end of the document*.

To be considered as maintaining Satisfactory Academic Progress, both full-time and less than full-time students must meet the following standards:

REQUIREMENTS

Pace

Students must successfully complete an average of 67% of their cumulative, attempted credit hours as transcribed by the Registrar's Office.

Qualitative Measure

All students must maintain a cumulative grade point average corresponding with the table below, as transcribed by the Registrar's Office.

Credits Attempted (Including Transfer Credits) Minimum Cumulative Grade Point Average

0-35.99 1.66

36-61.99 1.80

62-89.99 1.95

90 or more 2.00

Grade Level Progression

In order to advance to the next academic grade level for financial aid purposes, the following credit hours must be completed:

To advance to: You must complete:

Grade Level 2 – 24 credit hours

Grade Level 3 – 54 credit hours

Grade Level 4 – 87 credit hours

Special Notes

Generally, it takes 120 credit hours to obtain a Bachelor's Degree. To graduate in four years, a student must enroll for, and earn, an average of 15 credit hours per semester. Earning only 12 credit hours per semester (minimum for full-time) would extend graduation beyond the four year standard. Therefore, students who receive Juniata sponsored Merit scholarships and need-based grants should average at least 12 credits per semester. Also, certain financial aid resources, such as the Pennsylvania Higher Education Assistance Agency and other state grants, require a minimum of 12 credits earned per semester and are only available for 8 semesters.

Maximum Time Frame

Under Federal regulation, the maximum time frame that a student may have to complete an undergraduate program is 150% of the published length of the educational program for a full-time student. Juniata College has chosen to make this measurement on a credit hour basis. In most cases, a student must have earned 120 credit hours to complete an undergraduate degree. Therefore, it is expected that all students will complete all degree requirements by the time the student has earned 180 credit hours. Transfer credits reflected on a student's transcript count as attempted and earned credit hours. Students who do not complete their program within this time frame can continue to attend, but they will not be able to continue to receive financial aid. All Juniata sponsored Merit scholarships and need-based grants are limited to 8 semesters of eligibility, unless the student has experience unusual or mitigating circumstances that prevented degree completion within 8 semesters.

Additional Undergraduate Degrees

Students pursuing a second undergraduate, baccalaureate degree, including Teacher Certification, are limited to 90 attempted credit hours of work between receipt of the first degree and completion of the second. Second degree students may not receive federal financial aid beyond 90 attempted credit hours of enrollment in the second undergraduate degree program.

Frequency of Progress Checks

The Office of Student Financial Planning will conduct the official check of Satisfactory Academic Progress at the conclusion of the academic year, following spring semester, regardless of whether the student received financial aid or not.

If a student fails to achieve Satisfactory Academic Progress, the student will be informed of this via letter or electronic mail from the Office of Student Financial Planning. Included in this communication will be information on the student's status, the effect of this status on the student's financial aid eligibility, and any actions the student must take. The notice will be sent to the student's most current addresses on file. It is the responsibility of the student to inform the College of a correct mailing address at all times. If sent by electronic mail, the student's Juniata College electronic mail address will be used for all such communications.

The Dean of Students Office will be notified of students who failed to achieve Satisfactory Academic Progress.

APPEAL PROCESS

Following the first semester in which the student does not meet the Satisfactory Academic Progress standard, the student will not be able to receive financial aid for the next period of enrollment unless the student successfully appeals.

The requirements of this Satisfactory Academic Progress policy can be appealed based on the following circumstances:

- Death or serious injury or illness of an immediate relative
- Student injury or illness which required medical intervention

- Significant, unanticipated family obligations
- Catastrophic loss (e.g. flood, fire, etc.)
- Other special circumstances.

The student's appeal must include:

- An explanation of why the student failed to make Satisfactory Academic Progress. In other words, explain how the circumstance prevented the student from performing up to his or her normal academic potential.
- A description of what has changed that will allow the student to achieve Satisfactory Academic Progress status in the coming semester.

To appeal the loss of Satisfactory Academic Progress status, the student should submit the information to the Juniata College Office of Student Financial Planning, along with any supporting documentation (e.g. death certificate, doctor's note, letter from academic advisor or other 3rd party). The Director of Student Financial Planning reserves the right to request additional information on a case-by-case basis.

Approvals/Financial Aid Probation

Students who successfully appeal are granted Financial Aid Probation status for one semester. The student will be notified by letter or by electronic mail to their Juniata email account of the results of the SAP appeal.

The student should carefully review the SAP appeal notification, which will outline the unique, individualized SAP requirements the student must meet in order to maintain eligibility for federal financial aid. For example, a student who has failed to meet the 67% pace requirement, may be told in the appeal notification that s/he must maintain a higher minimum pace on a term by term basis, as well as earn a certain minimum GPA each semester, in order to maintain eligibility for federal financial aid. The student must keep the appeal notification for future reference.

Academic Plan/Statement of Intent

A part of the appeal process can be the establishment of an academic plan/statement of intent designed to help the student regain Satisfactory Academic Progress standing. The Academic Plan/Statement of Intent can be part of the student's appeal. The academic plan/statement of intent is worked out between the student, his or her academic advisor, and/or the Reg-

istrars' Office.

The academic plan/statement of intent is not required at the start of the probationary semester. But, if the student fails to regain Satisfactory Academic Progress status at the end of the probationary semester, the student must be successfully following the academic plan/statement of intent in order to continue to receive financial aid.

The academic plan/statement of intent must define how the student can regain Satisfactory Academic Progress status by a specific point in time.

Denials

If a SAP appeal is denied, the decision is final for the enrollment term specified by the student on the appeal form. A student may be able to re-establish eligibility on his/her own, for future semesters, by completing sufficient credit hours and/or improving his/her GPA such that s/he then meets the SAP requirements. Please contact The Office of Student Financial Planning if you have questions about reestablishing eligibility.

Financial Aid Probation

A student is considered to be on Financial Aid Probation during the first semester s/he receives federal financial aid under an approved SAP appeal.

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.

Miscellaneous

REPEATED COURSES

Some students repeat courses they have passed in order to raise their grade point averages (GPA). Be aware that repeating a course for which credit has been earned (a grade of "D-" or higher received), will not result in additional, earned (i.e. new) credit for financial aid/academic progress or degree requirement purposes. When repeating courses for which credit has already been earned, students should plan their class schedules carefully to ensure that they continue to meet SAP requirements.

WITHDRAWALS

Courses for which a student receives a grade of "W" are included in the number of attempted hours, but do not count as earned credit hours for SAP purposes.

TRANSFER CREDITS

Transfer credits reflected on a student's Juniata academic transcript are counted as both attempted and earned credit hours for SAP purposes. This includes college credits earned either as a full or part-time college student at another institution or through dual enrollment.

OTHER GRADES

Courses for which Satisfactory or Unsatisfactory grades are received count as both attempted and earned credit hours for SAP purposes. Courses for which a student receives the grade of "AU" (audit) will not count as attempted or earned for SAP courses.

***RENEWAL OF JUNIATA SCHOLARSHIPS AND GRANTS**

Students receiving Juniata funding must earn an average of 12 credits per semester in order to have the award renewed, unless the student has experience unusual or mitigating circumstances that prevented him/her from completing the credits.

Juniata sponsored Merit scholarships and need-based grants are limited to 8 semesters of eligibility, unless the student has experience unusual or mitigating circumstances that prevented degree completion within 8 semesters.

APPEALS

Students who fail to meet the progress standards noted above have several options. They may supplement credit earned by attending summer school; they may continue without aid; or they may petition for the reinstatement of aid. Appeals must be in writing and based on unusual, mitigating, or extraordinary circumstances which impeded their ability to maintain progress standards. (NOTE: Appeals granted by the Office of Student Financial Planning have no bearing on decisions made by the Student Academic Development Committee.)

EXPENSES

At a time when most higher education institutions' charges continue to outpace the general inflation rate, a Juniata College education remains affordable for students of appropriate academic ability. Despite the continued rise in the costs of services required for education, Juniata has managed to hold inevitable fee increases to moderate levels, often resulting in pricing a Juniata education below that of comparable institutions, increasing the real value of our educational product.

GENERAL FEE

Charges are based on a general fee covering most of the annual costs to a student:

	Resident Students	Non-resident Students
Fall Semester	\$29,059	\$22,688
Spring Semester	\$29,059	\$22,688
Total	\$58,118	\$45,376

The general fee is applied to regular instructional costs: use of Juniata's library and instructional facilities; academic services; personal student services; and maintenance and other operational costs. The general fee for full-time students also covers many extracurricular expenses including: admission to all home athletic events and numerous campus social activities; most of the admission charges to designated, College-sponsored cultural programs; use of all recreational/athletic facilities; and subscriptions to the student newspaper (The Juniatian). A student paying the general fee may take a normal load of 12 to 18 hours per semester. When permission is given to register for work in excess of the normal program, either in a given semester or for the academic year, the overload fee is \$520.00 for the 19th credit hour and \$1,380.00 per credit for the 20th and 21st credit hours.

The yearly general fee for resident students also covers board charges and room rental for regularly announced periods when the dining hall and residence halls are open (see the College calendar). A limited number of students, with approval from the Dean of Students, may live off campus each year, but others are expected to reside on campus unless they live with parents or guardians and commute from home in the immediate area. There are two meal plan options for resident students and one meal plan for non-resident students. Questions about meal plans should be addressed to Student Services.

MATRICULATION

Matriculation: When a student has been accepted for admission as a degree-seeking student, a \$400 matriculation fee is to be paid by May 1. This nonrefundable fee reserves a space in the entering class.

OCCASIONAL ACADEMIC FEES

Auditing: The fee for auditing is \$840 per course, and is waived for students in good standing who are regularly enrolled in a full-time College program.

Overload: Students registering for more than 18 hours per semester are charged \$500 for the 19th credit hour and \$1,380 per credit hour up to 21 credit hours. Courses extending over more than one semester are prorated. If the student withdraws from a course(s) following the drop/add period, this charge must still be paid.

Special Course Charges: Some courses have laboratory, studio, or special field experiences as significant parts of the course. A special fee of \$30 is usually assessed for these courses, with the exception of Biology and Chemistry. The fee for those courses is \$100. Other departments with courses which require a special course

fee include: art, education, geology, music and physics. Some general education courses also require this fee. The fee for students registering for off-campus student teaching is \$50.

Private Instruction in Music: Regularly enrolled students who wish to take private music lessons for academic credit will be charged \$780 for a two-credit, one hour per week lesson, or \$390 for a one-credit, thirty-minute per week lesson.

Private Instruction in Ceramics: Regularly enrolled students who wish to take ceramics lessons for academic credit may do so as part of their normal academic program. If lessons constitute an overload, the normal overload charge applies. Students who do not desire academic credit, or persons not regularly enrolled at the College, may take lessons for \$1,000 per semester (one lesson per week).

SPECIAL SERVICES FEES

Student Activity Fee: This fee provides funding to Student Government and the Juniata Activities Board. These organizations assist with support for student clubs, activities and organizations. This fee is assessed per semester. The Student Activity fee for full-time students is \$105 per semester and for part-time students is \$40 per semester.

Credentials: Fees for academic transcripts, co-curricular transcripts, and placement credentials will be covered by part of the student's matriculation fee. Up to 25 copies of each are free and a fee of \$5.00 each will be charged for subsequent documents.

Health and Wellness Services: All full-time students will be charged a \$112 per semester College Health and Wellness Services fee. This fee entitles the student to unlimited visits to the Health Center and special health and wellness programming on campus. Prescription medications dispensed will be billed to the student at cost.

Medical Insurance Coverage: An Accident and Sickness Insurance plan is available and will be billed automatically to all full-time students. The annual premium for students is \$1,616. Students may waive this charge by completing an online form and providing proof of coverage. Further information on this plan may be obtained by contacting the Business Office.

Technology Fee: All students will be charged a technology fee at the beginning of each semester. Resi-

dent students will be charged \$195 per semester; non-resident students will be charged \$85 per semester. The Technology Fee for summer online courses is \$7 per credit hour. The fee includes access to campus computing resources, including but limited to the Internet, shared file storage for classes, printing, copying, general lab computing, and cable television.

Vehicle Registration: All vehicles brought to campus must be registered with the Security Office. On-campus resident students will be charged \$75 per year, and off-campus resident and non-resident students will be charged \$35 per year.

PART-TIME FEES

Course: Non-resident students who do not participate in the College program and do not use facilities other than classrooms, libraries, or other academic facilities, are charged \$1,765 per semester hour when taking less than 12 semester hours. For persons holding bachelor's degrees, the fee is reduced by one-half.

Summer Session: Students enrolling in summer courses will be charged \$860 per credit hour unless they are participating in a program with special rates. Tuition for summer online courses is \$500 per credit hour.

DEPOSITS

Student Security Deposit: Once a student enrolls at Juniata, \$250 of the previously-paid matriculation fee establishes the student security deposit. Assessments and fines for damages to or loss of College property and other obligations are deducted from the deposit. When the balance of the deposit falls below \$50, students are required to restore the deposit to its full \$250 amount. After graduation or other separation from the College, the unexpended balance is refunded by check and mailed to the student's home address.

PAYMENT OF BILLS

The general fee is due and payable prior to the beginning of each semester. Fall and spring semester bills are due on August 8 and January 2, respectively. Financial settlement is required for all outstanding obligations. Students may be denied registration, room occupancy, and participation in extra-curricular activities without the necessary arrangements. Payment after the due date is subject to the late payment fee. Also, students cannot be granted honorable dismissal,

end-of-term reports, transcripts of grades and credits, or diplomas until all College bills have been paid in full.

Monthly Payment Option: Students who wish to pay College bills on a monthly basis may use Tuition Management Systems. The interest-free, monthly payment option enables families to spread all or part of the annual expenses over equal, monthly payments. A small annual fee is charged. Low-interest monthly payment options, including an unsecured loan, a home equity credit line, and federally-backed loans, are also available. Students can contact Tuition Management Systems at 1-800-356-8329 or online at www.afford.com for more information on these programs. Also, the Office of Student Financial Planning can inform students of alternative financing strategies.

Credit Card/ACH: Students who wish to pay College bills by either credit card or direct ACH Deposits from a bank account may do so by contacting CashNet through the Arch or have the student grant you access to the online payment website. Any fees associated with these types of transactions are passed onto the student.

CREDIT BALANCES

Juniata will pay credit balances to students in a timely manner, usually within two weeks of the determination of the credit balance. Credits are deemed to be applied to bills in the order as indicated in the Student Financial Planning section of the catalog.

LATE FEES

Late Payment: Any student who fails to pay his or her tuition, room, and board bill (or make proper arrangements with the Bursars Office) by the due date on the bill is charged a fee of 1.5% per month on past due balances.

Late Endorsement of Co-payee Checks: The College receives checks for tuition, room, and board made out to both the College and the student. The College may not use these funds until the check is endorsed by both the College and the student. The College will notify the student when such a check is received. Failure to endorse the check in a timely manner (generally within one week of notice date) will result in a charge of \$5 for each subsequent week or part of a week.

Through an agreement with AES and other lender/guarantee agencies and the College, direct depos-

it of loan proceeds into the College's bank account is permitted. Students should authorize this method of disbursement by checking the appropriate box on their loan application or signing an authorization form available in Accounting Services.

Registration Late Fee: Any student who fails to register or submit a (POE) Program of Emphasis plan by the published deadline, may be assessed a late fee of \$50 for each incident.

REFUND POLICY

As the College has expenses of a continuing nature, usually incurred on an annual basis, it assumes that students, once enrolled, will remain for the semester. However, the College recognizes that individual circumstances, including serious illness or other emergency reasons, may dictate a withdrawal. Official notice with an explanation of the reason for withdrawal must be made to the Dean of Student Services. A case-by-case review of the particular circumstances will be made to determine refund eligibility (if any). The College uses a federally mandated refund procedure based on a percentage of semester completed to calculate charges and applicable credits for students separating from the College after the semester begins.

We are required by federal statute to determine how much financial aid was earned by students who withdraw, drop out, are dismissed, or take a leave of absence prior to completing 60% of a payment period or term.

For a student who withdraws after the 60% point-in-time, there are no unearned funds. However, a school must still complete a Return calculation in order to determine whether the student is eligible for a post-withdrawal disbursement.

The calculation is based on the percentage of earned aid using the following Federal Return of Title IV funds formula:

Percentage of payment period or term completed = the number of days completed up to the withdrawal date divided by the total days in the payment period or term. (Any break of five days or more is not counted as part of the days in the term.) This percentage is also the percentage of earned aid.

Funds are returned to the appropriate federal program based on the percentage of unearned aid using the

following formula:

Aid to be returned = (100% of the aid that could be disbursed minus the percentage of earned aid) multiplied by the total amount of aid that could have been disbursed during the payment period or term.

If a student earned less aid than was disbursed, the institution would be required to return a portion of the funds and the student would be required to return a portion of the funds. Keep in mind that when Title IV funds are returned, the student borrower may owe a debit balance to the institution.

If a student earned more aid than was disbursed to him/her, the institution would owe the student a post-withdrawal disbursement which must be paid within 120 days of the student's withdrawal.

The institution must return the amount of Title IV funds for which it is responsible no later than 45 days after the date of the determination of the date of the student's withdrawal.

Tuition and Room Charges & Board Charges: Tuition, room charges, and board charges are pro-rated from the first day of class of each semester and is based on the percentage of the semester which has expired. Tuition, room, and board charges will be assessed up to the 60% point. There will not be a refund after the 60% mark.

All students who separate from the College, after the start of classes, will be assessed an administrative fee of \$100.

The student security deposit will be retained for those students who have only temporarily separated. The deposit will be refunded if the student chooses not to return.

Financial Aid: The crediting of financial aid ceases for withdrawing students in the semester in which separation occurs. Federal regulations require that refunds be made in the same order as credited. Credits are applied to bills in the following order:

- Unsubsidized Federal Direct Loans (other than PLUS loans)
- Subsidized Federal Direct Loans
- Federal Perkins Loans
- Federal Direct PLUS Loans
- Federal Pell Grants for which a Return of funds is

required

- Federal TEACH Grant for which a Return of funds is required
- Federal Supplemental Opportunity Grants for which a Return of funds is required
- Other assistance under this Title for which a Return of funds is required (e.g., LEAP)
- State Grants
- Juniata Grants and Scholarships
- Other payments

Summer Session, Occasional Academic and Part-time Fees: Refunds are calculated proportionately according to the above table.

Procedures for Editing the Catalog

Changes become effective on the first day of the Fall term.

The College: Coordinated by Institutional Research overseen by VP for Academic Affairs

Curriculum: Faculty

Academic Policies: Faculty

Academic Opportunities and Resources: VP for Academic Affairs

Student Life: VP for Student Life

Admissions and Cost: VP for Enrollment

In the event that policies and procedures described herein conflict with other institutional documents, the Catalog shall prevail.