



# University Bulletin

## Undergraduate Degree Programs

### Primary Navigation

## Penn State Altoona

Penn State Altoona, a scenic campus of 157 acres, is just 45 miles from the University Park campus. Enrolling approximately 4,000 students, Penn State Altoona offers a unique residential undergraduate experience by combining a small-college atmosphere within the context of a major research university. Small classes taught by experienced professors in a friendly setting provide students with the opportunity to complete baccalaureate majors at Penn State Altoona. Penn State Altoona also offers the first two years of course work for more than 180 Penn State majors, which can be completed at other Penn State locations.

### RECOMMENDED ACADEMIC PLANS

Recommended Academic Plans provide, in table form, the courses students might schedule semester by semester as they pursue a specific undergraduate degree. Each college or campus maintains Recommended Academic Plans for its own majors/degree programs. Links to these plans are on the Division of Undergraduate Studies website at: <http://www.dus.psu.edu/semplans.htm>. Questions concerning the Recommended Academic Plans should be directed to the college or campus involved or the Division of Undergraduate Studies.

### GENERAL GRADUATION REQUIREMENTS

All baccalaureate degree candidates must follow the graduation requirements as established by the University Faculty Senate:

1. Minimum 2.00 cumulative grade-point average.
2. Completion of minimum total credits for graduation.
3. Completion of all General Education, college, elective, and major requirements. See <http://bulletins.psu.edu/undergrad/generaleducation> for more information on General Education.
4. Grade of at least C in each major course designated by the major as a C-required course.
5. Students in Bachelor of Arts degree programs must complete University-wide bachelor of arts degree requirements, including completion of level 3 of a foreign language with a D or higher. See <http://bulletins.psu.edu/undergrad/barequirements> for courses that meet University-wide bachelor of arts degree requirements.
6. Students in Bachelor of Science degree programs must have either 2 Carnegie Units of foreign language completed prior to admission to Penn State, or a grade of C or higher in college-level 1 or 2 of a foreign language, or a grade of D or higher in college-level 3.

## **PENN STATE ALTOONA ADMINISTRATION**

LORI J. BECHTEL-WHERRY, *Chancellor*

BARBARA A. WIENS-TUERS, *Interim Associate Dean for Academic Affairs*

DARIN T. ZIMMERMAN, *Associate Dean for Research and Sponsored Programs*

## **COLLEGE ACADEMIC ORGANIZATION**

### **DIVISION OF ARTS AND HUMANITIES**

PROFESSOR BRIAN C. BLACK, Head

The division offers a bachelor of arts degree program in Letters, Arts, and Sciences with self-designed curriculum. The division also offers bachelor of arts degrees in Communications, English, History, Integrative Arts, Political Science, and Visual Art Studies. An associate degree in Letters, Arts, and Sciences is also available.

### **DIVISION OF BUSINESS, ENGINEERING, AND INFORMATION SCIENCES AND TECHNOLOGY**

PROFESSOR JUNGWOO RYOO, Head

The division focuses on the needs of undergraduate students who will begin careers in business and industry after graduation. The division offers bachelor of science degrees in Business, Electro-Mechanical Engineering Technology (BSEMET), Rail Transportation Engineering, and Security and Risk Analysis (Information and Cyber Security option). The division offers an associate degree in Business, and also provides the first two years of most bachelor of science degrees offered by Smeal College of Business and the College of Engineering.

### **DIVISION OF EDUCATION, HUMAN DEVELOPMENT, AND SOCIAL SCIENCES**

ASSOCIATE PROFESSOR PETER M. HOPSICKER, Head

The division offers bachelor degrees in Criminal Justice (B.A. and B.S.), Childhood and Early Adolescent Education (Pre-Kindergarten through Fourth Grade option), Human Development and Family Studies (Community Human Services option), Nursing (including Second or Additional Degree option), and Psychology (B.A. and B.S. with Science and Business options). The division also offers associate degrees in Criminal Justice, Human Development and Family Studies, and Nursing. The first one or two years of many programs in the Colleges of Education, Health and Human Development, and the Liberal Arts are supported by the division.

### **DIVISION OF MATHEMATICS AND NATURAL SCIENCES**

ASSOCIATE PROFESSOR EDWARD P. LEVRI, Head

The division offers bachelor degrees in Biology, Environmental Studies, Mathematics, and Science. The division also offers the courses for the first two years of degree programs offered by the Eberly College of Science and the College of Earth and Mineral Sciences, and some degree programs offered by the College of Agricultural Sciences. An associate degree in Science is also available.

### **DIVISION OF UNDERGRADUATE STUDIES**

The Division of Undergraduate Studies (DUS) at Penn State Altoona is an academic unit of enrollment for students who wish to explore the University's academic opportunities before deciding upon a field of study. DUS enrollment is also available to students who encounter changes in interests and career goals and wish to redefine their academic goals. In addition to offering a unit of enrollment, DUS also provides the following services: testing, counseling, and advising for all entering first-year students and their families; academic advising and educational planning for students and prospective students; and a University-wide academic advising and information network available to all Penn State students, faculty, and staff.

## DIVISION OF STUDENT AFFAIRS

SEAN C. KELLY, Director

The Division of Student Affairs at Penn State Altoona provides students with the services, activities, and developmental opportunities that will supplement and enhance their academic experience and the quality of their lives while enrolled at the college.

Departments and services offered by the Division of Student Affairs include Student Life, Residence Life, Career Services, International Student Services, Student Conduct, Institutional Equity and Diversity, Intramural and Recreation Sports, Club Sports, Religious Affairs, Greek Life, Off-Campus Housing, New Student Orientation, Service Learning, Health Services, Counseling and Psychological Services, Health Education, and Student Aid.

## INTERCOLLEGIATE ATHLETICS

BRENT BAIRD, Director of Athletics

Athletics includes intramural and recreational sports and activities, along with varsity athletics. Men's varsity sports are baseball, basketball, cross country, golf, soccer, swimming and diving, and tennis. Women's varsity sports are basketball, bowling, cross country, soccer, softball, swimming and diving, tennis, and volleyball. Penn State Altoona is a member of the National Collegiate Athletic Association (NCAA), Division III in the Allegheny Mountain Collegiate Conference (AMCC). Regionally, Penn State Altoona is a member of the Eastern College Athletic Conference (ECAC).

## Baccalaureate Degrees

# Biology

*Abington College (BIOAB)*

*Altoona College (BIOAL)*

*Berks College (BIOBL)*

*Capital College (BIOCA)*

*University Park, Eberly College of Science (BIOL)*

*University College, Penn State Beaver, Penn State Brandywine, Penn State Schuylkill, Penn State Worthington Scranton, Penn State York (BIOCC)*

Not all options are available at every campus. Contact the campus you are interested in attending to determine which options are offered.

*Carla Hass, Person-In-Charge*

The curriculum in Biology is planned for preparation for professions requiring competence in biological science or for gaining an understanding of the world of living things. The professional group includes students who intend to secure advanced degrees through graduate study, students who are interested in work with various governmental agencies or industries having biological responsibilities, and students who want to prepare for careers in medicine or other health-related professions. Students whose interests are not professional select the curriculum because its broad approach can result in an educated view of the structure and function of living things. Achievement of these goals, including a special interest in a particular area of biology, can be met by selecting one of five options offered by the Department of Biology that will lead to the B.S. degree in Biology. The options and their key areas are 1) Plant Biology--morphology, systematics, and physiology of plants and fungi; 2) Ecology--behavior, and population and community biology of plants and animals; 3) General Biology--all aspects of modern biology; 4) Genetics and Developmental Biology--genetics, genetic engineering, and plant and

animal development; 5) Neuroscience--development, biochemistry, physiology and aging of the central and peripheral nervous system; 6) Vertebrate Physiology--pre-medicine, pre-dentistry, pharmacology, and animal physiology.

In order to be eligible for entrance to the Biology major, a student must have: 1) attained at least a 2.00 cumulative grade point average; 2) completed BIOL 110 GN(4), CHEM 110 GN(3), MATH 140 GQ(4), and earned a grade of C or better in each of these courses; and 3) completed at least one of the following courses with a grade of C or better: BIOL 220W GN(4), BIOL 230W GN(4), or BIOL 240W GN(4).

### **TO VIEW THE Biology Minor (BIOL)**

For the B.S. degree in Biology, a minimum of 124 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

### **GENERAL EDUCATION: 45 credits**

(15 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

### **FIRST-YEAR SEMINAR:**

(Included in GENERAL EDUCATION course selection)

### **UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in GENERAL EDUCATION course selection)

### **WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

### **REQUIREMENTS FOR THE MAJOR: 94 credits**

(This includes 15 credits of General Education courses: 9 credits of GN courses; 6 credits of GQ courses.)

### **COMMON REQUIREMENTS FOR MAJOR (ALL OPTIONS): 40-44 credits**

#### **PRESCRIBED COURSES (32 credits)**

CHEM 110 GN(3)[1], CHEM 111 GN(1), CHEM 112 GN(3)[1], CHEM 113 GN(1), MATH 140 GQ(4)[1], MATH 141 GQ(4) (Sem: 1-2)

BIOL 110 GN(4)[1], BIOL 220W GN(4)[1], BIOL 230W GN(4)[1], BIOL 240W GN(4)[1] (Sem: 1-4)

#### **ADDITIONAL COURSES (8-12 credits)**

PHYS 250 GN(4), PHYS 251 GN(4); or PHYS 211 GN(4), PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2) (Sem: 5-6)

### **REQUIREMENTS FOR THE OPTION: 50-54 credits**

#### **ECOLOGY OPTION: (50-54 credits)**

#### **ADDITIONAL COURSES (30-33 credits)**

CHEM 202(3), CHEM 203(3); or CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-4)

Select 3-4 credits from STAT 200 GQ(4) or STAT 240 GQ(3) or STAT 250 GQ(3) (Sem: 3-4)

Select 3 credits from STAT 462(3) or STAT 464(3) (Sem: 7-8)

Select a minimum of 18 credits of 400-level biology courses, with at least 3 credits from each of the following groups (courses in Group IV--except BIOL 496, SC 295, SC 395, SC 495--may be used to satisfy requirements in other groups) (Sem: 5-8)

Group I: BIOL 412(3), BIOL 419(3), BIOL 435(3), BIOL 436(3), BIOL 444(3), BIOL 450W(3-5), BIOL 463(3), BIOL 482(3-4), BIOL 499A IL(3)

Group II: BIOL 414(3), BIOL 427(3), BIOL 428(3), BIOL 429(3), BIOL 448(3), BIOL 464(3), BIOL 474(3)

Group III: BIOL 406(3), BIOL 415(3), BIOL 417(4), BIOL 446(3), PPEM 425(4)

Group IV: BIOL 414(3), BIOL 417(4), BIOL 419(3), BIOL 444(3), BIOL 448(3), BIOL 450W(3-5), BIOL 482(3-4), BIOL 496(3), BIOL 499A IL(3), PPEM 425(4), SC 295(1-3), SC 395(1-3), SC 495(1-3) (A maximum of 3 credits of BIOL 496 or 4 credits of SC 295, SC 395, SC 495 may be used to fulfill the 18-credit minimum in the 400-level biology course requirement.)

**SUPPORTING COURSES AND RELATED AREAS (17-24 credits)**

Select 17-24 credits from department list (Sem: 1-8)

**GENERAL BIOLOGY OPTION: (50-54 credits)**

**ADDITIONAL COURSES (24-27 credits)**

CHEM 202(3), CHEM 203(3); or CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-4)

Select 3-4 credits from STAT 200 GQ(4), STAT 240 GQ(3), or STAT 250 GQ(3) (Sem: 3-4)

Select a minimum of 18 credits of 400-level biology courses, with at least 3 credits from each of the following groups (each course may be used to satisfy a requirement in only one group) (Sem: 5-8)

Group I -- BIOL 407(3), BIOL 410(3), BIOL 414(3), BIOL 441(3), BIOL 443(3), BIOL 444(3), BIOL 446(3), BIOL 448(3), BIOL 499A IL(3), HORT 407(3), HORT 440W(3), PPEM 416(2-4), PPATH 425(4)

Group II -- BIOL 405(3), BIOL 411(3), BIOL 414(3), BIOL 417(4), BIOL 420(3), BIOL 421(4), BIOL 425(4), BIOL 427(3), BIOL 428(3), BIOL 438(3), BIOL 443(3), BIOL 460(3), BIOL 474(3)

Group III -- AN SC 442(3), B M B 400(2-3), B M B 450(2), BIOL 404(3), BIOL 405(3), BIOL 407(3), BIOL 410(3), BIOL 411(3), BIOL 416(3), BIOL 422(3), BIOL 426(3), BIOL 428(3), BIOL 430(3), BIOL 432(3), BIOL 439(3), BIOL 443(3), BIOL 448(3), BIOL 460(3), BIOL 499A IL(3), HORT 407(3)

Group IV -- BIOL 406(3), BIOL 412(3), BIOL 414(3), BIOL 415(3), BIOL 417(4), BIOL 419(3), BIOL 428(3), BIOL 429(3), BIOL 435(3), BIOL 436(3), BIOL 444(3) BIOL 446(3), BIOL 448(3), BIOL 450W(3-5), BIOL 463(3), BIOL 464(3), BIOL 474(3), BIOL 499A IL(3),

Group V -- BIOL 404(3), BIOL 406(3), BIOL 409(3), BIOL 411(3), BIOL 413(3), BIOL 416(3), BIOL 421(4), BIOL 426(3), BIOL 430(3), BIOL 432(3), BIOL 437(4), BIOL 443(3), BIOL 446(3), BIOL 460(3), BIOL 469(3), BIOL 470(3), BIOL 472(3), BIOL 479(3)

Group VI -- BIOL 400(1-3), BIOL 407(3), BIOL 414(3), BIOL 417(4), BIOL 419(3), BIOL 421(4), BIOL 437(4), BIOL 439(3), BIOL 444(3), BIOL 448(3), BIOL 450W(3-5), BIOL 461(3), BIOL 471(3), BIOL 473(2), BIOL 496(1-3), PPEM 425(4), SC 295(1-3), SC 395(1-3), SC 495(1-3)

**SUPPORTING COURSES AND RELATED AREAS (23-30 credits)**

Select 23-30 credits from department list (Sem: 1-8)

**GENETICS AND DEVELOPMENTAL BIOLOGY OPTION: (50-54 credits)**

**PRESCRIBED COURSES (19 credits)**

CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-4)

BIOL 322(3), BIOL 430(3) (Sem: 5-6)

B M B 401(2), B M B 402(3) (Sem: 5-8)

**ADDITIONAL COURSES** (17-21 credits)

Select 2-5 credits from MATH 220 GQ(2-3), MATH 231(2), MICRB 201(3), MICRB 202(2) (Sem: 3-6)

Select 3-4 credits from STAT 200 GQ(4), STAT 240 GQ(3), STAT 250 GQ(3), or STAT 319(3) (Sem: 5-6)

Select a minimum of 12 credits of 400-level courses, with at least 6 credits from Group I, 3 credits from Group II, and 3 credits from Group III (Sem: 5-8)

Group I -- B M B 400(2-3), B M B 450(2), BIOL 404(3), BIOL 405(3), BIOL 407(3), BIOL 410(3), BIOL 411(3), BIOL 413(3), BIOL 416(3), BIOL 422(3), BIOL 426(3), BIOL 427(3), BIOL 428(3), BIOL 432(3), BIOL 437(4), BIOL 439(3), BIOL 443(3), BIOL 448(3), BIOL 460(3), BIOL 469(3), HORT 407(3), MICRB 410(3)

Group II -- BIOL 405(3), BIOL 411(3), BIOL 414(3), BIOL 417(4), BIOL 420(3), BIOL 421(4), BIOL 425(4), BIOL 427(3), BIOL 428(3), BIOL 438(3), BIOL 443(3), BIOL 460(3), BIOL 474(3)

Group III -- BIOL 400(1-3), BIOL 407(3), BIOL 437(4), BIOL 439(3), BIOL 448(3), BIOL 461(3), BIOL 471(3), BIOL 473(2), BIOL 496(1-3), BIOL 499A IL(3), B M B 442(3), PPEM 425(4), SC 295(1-3), SC 395(1-3), SC 495(1-3)

**SUPPORTING COURSES AND RELATED AREAS** (10-18 credits)

Select 10-18 credits from department list (Sem: 1-8)

**NEUROSCIENCE OPTION:** (50-54 credits)

**PRESCRIBED COURSES** (19 credits)

B M B 401(2), B M B 402(3) (Sem: 5-8)

BIOL 469(3), BIOL 470(3) (Sem: 5-8)

CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-4)

**ADDITIONAL COURSES** (15-16 credits)

Select 3-4 credits from STAT 200 GQ(4), STAT 240 GQ(3), or STAT 250 GQ(3) (Sem: 3-4)

Select a minimum of 12 credits of 400-level biology courses, with at least 6 credits from Group I, 3 credits from Group II, and 3 credits from Group III (Sem: 5-8)

Group I -- B M B 400(2-3), BIOL 404(3), BIOL 409(3), BIOL 411(3), BIOL 413(3), BIOL 421(4), BIOL 426(3), BIOL 430(3), BIOL 437(4), BIOL 443(3), BIOL 460(3), BIOL 471(3), BIOL 472(3), BIOL 473(2), BIOL 479(3) (may select up to 6 credits from department list)

Group II -- BIOL 405(3), BIOL 411(3), BIOL 414(3), BIOL 417(4), BIOL 420(3), BIOL 421(4), BIOL 425(4), BIOL 427(3), BIOL 428(3), BIOL 438(3), BIOL 443(3), BIOL 460(3), BIOL 474(3)

Group III -- BIOL 400(1-3), BIOL 414(3), BIOL 417(4), BIOL 419(3), BIOL 421(4), BIOL 437(4), BIOL 439(3), BIOL 444(3), BIOL 448(3), BIOL 450W(3-5), BIOL 461(3), BIOL 471(3), BIOL 473(2), BIOL 496(1-3), BIOL 499A IL(3), SC 295(1-3), SC 395(1-3), SC 495(1-3)

**SUPPORTING COURSES AND RELATED AREAS** (15-20 credits)

Select 15-20 credits from department list (Sem: 1-8)

**PLANT BIOLOGY OPTION:** (50-54 credits)

**PRESCRIBED COURSES** (22 credits)

CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-4)

B M B 401(2), B M B 402(3), BIOL 407(3), BIOL 414(3), BIOL 441(3) (Sem: 5-8)

**ADDITIONAL COURSES** (12-13 credits)

Select 3-4 credits from STAT 200 GQ(4), STAT 240 GQ(3), STAT 250 GQ(3), or an advanced statistics course (Sem: 3-4)

Select a minimum of 9 credits of 400-level biology courses, with at least 6 credits from Group I and 3 credits from Group II (Sem: 5-8)

Group I -- BIOL 410(3), BIOL 413(3), BIOL 427(3), BIOL 430(3), BIOL 443(3), BIOL 444(3), BIOL 446(3), BIOL 448(3), BIOL 499A IL(3), BIOTC 459(3), HORT 407(3), HORT 440W(3), PPEM 416(2-4), PPEM 425(4)

Group II -- BIOL 400(1-3), BIOL 414(3), BIOL 419(3), BIOL 439(3), BIOL 444(3), BIOL 448(3), BIOL 450W(3-5), BIOL 461(3), BIOL 496(1-3), BIOL 499A IL(3), SC 295(1-3), SC 395(1-3), SC 495(1-3)

**SUPPORTING COURSES AND RELATED AREAS** (15-20 credits)

Select 15-20 credits from department list (Sem: 1-8)

**VERTEBRATE PHYSIOLOGY OPTION:** (50-54 credits)**PRESCRIBED COURSES** (18 credits)

CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-4)

B M B 401(2), B M B 402(3), BIOL 472(3), BIOL 473(2) (Sem: 5-8)

**ADDITIONAL COURSES** (15-16 credits)

Select 3-4 credits from STAT 200 GQ(4), STAT 240 GQ(3), or STAT 250 GQ(3) (Sem: 5-8)

Select a minimum of 12 credits of 400-level courses, with at least 6 credits from Group I, 3 credits from Group II, and 3 credits from Group III (Sem: 5-8)

Group I -- BIOL 404(3), BIOL 406(3), BIOL 409(3), BIOL 411(3), BIOL 412(3), BIOL 413(3), BIOL 416(3), BIOL 421(4), BIOL 426(3), BIOL 430(3), BIOL 432(3), BIOL 437(4), BIOL 443(3), BIOL 446(3), BIOL 460(3), BIOL 469(3), BIOL 470(3), BIOL 471(3), BIOL 479(3) (may select up to 6 credits from department list)

Group II -- BIOL 405(3), BIOL 411(3), BIOL 414(3), BIOL 417(4), BIOL 420(3), BIOL 421(4), BIOL 425(4), BIOL 427(3), BIOL 428(3), BIOL 438(3), BIOL 443(3), BIOL 460(3), BIOL 474(3)

Group III -- BIOL 400(1-3), BIOL 414(3), BIOL 417(4), BIOL 419(3), BIOL 421(4), BIOL 437(4), BIOL 439(3), BIOL 444(3), BIOL 448(3), BIOL 450W(3-5), BIOL 461(3), BIOL 471(3), BIOL 473(2), BIOL 496(2), BIOL 499A IL(3), SC 295(1-3), SC 395(1-3), SC 495(1-3)

**SUPPORTING COURSES AND RELATED AREAS** (16-21 credits)

Select 16-21 credits from department list (Sem: 1-8)

## **Integrated B.S. in Biology/M.Ed. in Curriculum and Instruction**

This Integrated Undergraduate/Graduate (IUG) degree program combines the Bachelor of Science in Biology with the Master of Education in Curriculum and Instruction, Science Education emphasis. The program is designed to be completed in five years. The program enables highly qualified and motivated students to delve deeply into a scientific content area and to pursue graduate level preparation in the theory and practice of teaching. Most students in this option intend to seek Pennsylvania teacher certification, and a semester of student teaching comprises part of their final year of studies. The IUG may also be suitable for a student who does not need to become certified, because they intend to teach in a private secondary school or a non-formal educational setting; in such cases, the second graduate semester will be a program of studies determined through consultation with the graduate advisor and customized for the student's specific needs.

For specific instructions on applying to the program, please consult the "Application Process" section of the IUG description for the Biology B.S. degree in the *Undergraduate Bulletin*. Application materials to be submitted include an undergraduate transcript, statement of purpose, draft plan of study, two letters of recommendation, and concurrent submission of an application for master's study to the graduate program in Curriculum and Instruction, Science Education emphasis area. Additional details about the graduate application procedure can be found above in the section, "Admissions Requirements."

IUG students fulfill all degree requirements for a B.S. in the Eberly College of Science. If a student chooses to leave the program without completing M.Ed. requirements, he or she may still receive the relevant B.S. degree, after all B.S. requirements are completed.

For the M.Ed. degree, students must earn at least 30 credits at the 400/500 level, at least 18 of them at the 500 level. One graduate semester is usually devoted to full time student teaching. Additional graduate coursework is completed in a second semester. Courses required for the M.Ed. degree include a course in learning theory (e.g., SCIED 552(3)), a course in research methods (e.g., SCIED 558(3)), a course in curriculum (e.g., SCIED 550), and a course in research ethics (C I 590(1)).

Students pursuing teacher certification (the usual option) additionally complete a 500-level EDTHP course (3), C I 595(6), and C I 496(6). SCIED 558(3), C I 496(6), and C I 595(6) comprise the student-teaching semester course load. Students who are not pursuing teacher certification substitute 15 credits of other 400 or 500-level coursework for the student-teaching semester; those courses are selected in consultation with their advisors, in order to address the students' specific career aspirations.

124 credits are required for the B.S. degree and 30 credits for the M.Ed. degree. The following courses may be double-counted toward both the B.S. and the M.Ed. degrees, up to a limit of 12 credits: EDTHP 500-level courses (3), SCIED 411(3) & SCIED 412(3), and SCIED 500-level courses. Note that at least 50% of credits proposed for double-counting must be at the 500 level.

There are a number of other requirements for Pennsylvania teacher certification, including state-required tests and clearances, as well as coursework that can be completed at either the undergraduate or graduate level. Some courses, not enumerated above, that are usually required to satisfy teacher certification requirements include C I 280(3), SPLED 400(3), and C I 495C(3). Please note that changes in Pennsylvania certification requirements are common; students should check the Certification FAQ page at the Penn State Science Education website for updates and clarification about the specific requirements that affect them, based on their admission date to the IUG program option. Note also that students in the IUG program option are not required to complete all Penn State teacher certification requirements in order to receive their B.S. and M.Ed. degrees, as long as they have completed the requirements for those degrees, as described in the undergraduate and graduate *Bulletins*. For example, a student who has completed all degree requirements but has not yet received a score for the Pennsylvania-required Biology PRAXIS exam may be awarded both of his or her earned degrees.

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-01-132

Review Date: 8/23/16

UCA Revision #1: 8/2/06

UCA Revision #2: 7/26/07



## Business

*Abington College (BSBAB)*

*Altoona College (BSBAL)*

*Berks College (BSBBL)*

*University College (BSBCC): Penn State Beaver, Penn State Brandywine, Penn State DuBois, Penn State Fayette, Penn State Greater Allegheny, Penn State Hazleton, Penn State Lehigh Valley, Penn State Mont Alto, Penn State New Kensington, Penn State Schuylkill, Penn State Shenango, Penn State Wilkes-Barre, Penn State Worthington Scranton, Penn State York University College (BSBIC) via the World Campus*

The Bachelor of Science in Business (B.S.B.) is a professionally oriented business degree program that combines the theoretical underpinnings of core business disciplines, notably management, marketing, finance, and supply chain management, with applied study in a practical setting. Through the choice of an 18-credit option, students specialize in a key business sector. Students also develop written and oral communication skills throughout the program, acquire contemporary technology skills, and engage in active and collaborative learning. The degree allows students to become familiar with the unique business environments of their local communities, a design that sets the degree apart from other business degrees offered within the University and throughout the Commonwealth.

Not all options are available at every campus. Contact the campus you are interested in attending to determine which options are offered.

**ACCOUNTING OPTION:** This option prepares students to pursue careers in business with an emphasis on the areas of financial and managerial accounting, systems and controls, auditing, and taxation.

**ENTREPRENEURSHIP OPTION:** This option prepares students to pursue entrepreneurial careers with emphasis on idea generation, opportunity analysis, new product creation, and business plan development.

**FINANCIAL SERVICES OPTION:** This option prepares students to pursue careers in financial organizations with emphasis on wealth management, tax planning, risk management, and financial analysis.

**HEALTH SERVICES OPTION:** This option prepares students to pursue careers in the health services sector with emphasis on the financial and administrative aspects of health care enterprises.

**INDIVIDUALIZED BUSINESS OPTION:** This option provides the opportunity for students to pursue an approved business-focused interdisciplinary program of study.

**MANAGEMENT AND MARKETING OPTION:** This option prepares students to pursue careers in business organizations with an emphasis on the skills and knowledge necessary for the business professional to function in community and regional centers of commerce.

**Entrance Requirement:** Completion of MATH 022 or MATH 040, 041, 110, 140.

For the B.S. degree in Business, a minimum of 120 credits is required, 15 of which must be at the 400 level.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(12 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in front of *Bulletin*.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 10 credits

**REQUIREMENTS FOR THE MAJOR:** 77 credits

(This includes 12 credits of General Education courses: 6 credits of GQ courses; 6 credits of GS courses.)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 59 credits

**PRESCRIBED COURSES** (41 credits)

ECON 102 GS(3) (Sem: 1-4)

ACCTG 211(4), ECON 104 GS(3), MIS 204(3) (Sem: 3-4)

BA 321(3)[1], BA 322(3)[1], BA 420(1)[1], FIN 301(3)[1], MGMT 301(3)[1], MKTG 301(3)[1], SCM 301(3)[1] (Sem: 5-6)

IB 303 IL(3)[1] (Sem: 5-8)

BA 421(3)[1], BA 422(3)[1] (Sem: 7-8)

**ADDITIONAL COURSES** (15-18 credits)

MATH 110 GQ(4) or MATH 140 GQ(4) (Sem: 1-4)

SCM 200 GQ(4) or STAT 200 GQ(4) (Sem: 1-4)

BA 243(4) or BA 241(2) and BA 242(2) (Sem: 3-4)

Select 3 or 6 credits from BA 495A(3 or 6)[1], BA 495B(3 or 6)[1] (Sem: 7-8)

**SUPPORTING COURSES AND RELATED AREAS** (0-3 credits)

Select 0-3 credits from 400-level business courses from: ACCTG, BA, ECON, ENTR, FIN, FINSV, HPA, IB, MGMT, MIS, MKTG, RM, or SCM [1] (Sem: 7-8)

**REQUIREMENTS FOR THE OPTION:** 18 credits [1]

**ACCOUNTING OPTION:** (18 credits)

**PRESCRIBED COURSES** (9 credits)

ACCTG 404(3), ACCTG 471(3), ACCTG 472(3) (Sem: 5-6)

**ADDITIONAL COURSES** (6 credits)

ACCTG 403(3) or 403W(3) (Sem: 7-8)

ACCTG 405(3) or FINSV 411(3) (Sem: 7-8)

**SUPPORTING COURSES AND RELATED AREAS** (3 credits)

Select 3 credits of 400-level courses from: ACCTG, BA, ECON, ENTR, FIN, FINSV, HPA, IB, MGMT, MIS, MKTG, RM, or SCM (Sem: 7-8)

**ENTREPRENEURSHIP OPTION:** (18 credits)

**PRESCRIBED COURSES** (9 credits)

ENTR 300(3), ENTR 320(3) (Sem: 5-6)

ENTR 400(3) (Sem: 7-8)

**ADDITIONAL COURSES** (0-3 credits)

Select 0-3 credits in CAS 352(3) or ENGL 419(3) (Sem: 7-8)

**SUPPORTING COURSES AND RELATED AREAS** (6-9 credits)

Select 6 to 9 credits of 400-level ENTR courses in consultation with your advisor (Sem: 5-8)

**FINANCIAL SERVICES OPTION:** (18 credits)

**PRESCRIBED COURSES** (3 credits)

FIN 420(3) (Sem: 5-8)

**ADDITIONAL COURSES** (3 credits)

Select 3 credits from ACCTG 405 or FINSV 411 (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (12 credits)

Select 12 credits in 300 or 400-level (with at least 3 credits at the 400-level) from ACCTG, FIN, FINSV or RM (Sem: 5-8)

**HEALTH SERVICES OPTION:** (18 credits)

(Minimum 6 credits at the 400-level)

**PRESCRIBED COURSES** (6 credits)

HPA 101(3) (Sem: 5-6)

HPA 332(3) (Sem: 5-8)

**ADDITIONAL COURSES** (0-3 credits)

Select 0-3 credits from BBH 302(3), CAS 352(3), CAS 404(3), ENGL 416(3), ENGL 419(3), LER 424(3), LER 472(3), PSYCH 281 GS(3), PSYCH 484(3), or PSYCH 485(3) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (9-12 credits)

Select 3-9 credits from 300 or 400-level HPA courses (Sem: 5-8)

Select 0-6 credits of 300-400-level courses from ACCTG, BA, ECON, ENTR, FIN, FINSV, HPA, IB, MGMT, MKTG, MIS, RM or SCM (Sem: 6-8)

**INDIVIDUALIZED BUSINESS OPTION:** (18 credits)

Select 18 credits of study (with at least 3 credits at the 400-level) as submitted by the student and approved by the campus BSB Program Coordinator (Sem: 5-8)

**MANAGEMENT AND MARKETING OPTION:** (18 credits)

**ADDITIONAL COURSES** (0-6 credits)

Select 0-6 credits from the following: BA 250(3), ENGL 419(3), MKTG 220(3) or one of the following, CAS 250(3), CAS 252(3), CAS 352(3), CAS 404(3) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (12-18 credits)

A minimum of 3 credits of supporting courses must be selected at the 400-level.

Select 3 credits from 300 or 400-level MGMT courses (Sem: 5-8)

Select 3 credits from 300 or 400-level MKTG courses (Sem: 5-8)

Select 6-12 additional credits in 300 or 400-level courses from MGMT or MKTG courses (Sem: 6-8)

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2013

Blue Sheet Item #: 42-04-065

Review Date: 01/14/2014

UCA Revision #1: 8/3/06

## Comments

# Communications

*Altoona College (COMAL)*

The curriculum of this B.A. in Communications provides a general grounding in traditional media forms along with work in the area of media convergence. Students must do coursework at both the practical and theoretical level. On the theory side, coursework will be offered in the areas of media criticism and theory, visual communications, and media history at the introductory and advanced levels. On the applied side, coursework will be offered in video and audio production, news writing and photojournalism, radio and television studio production, and public relations and advertising at the introductory and advanced levels. In the Convergent Media News Service courses, which form the most distinctive component of the program, students will actually produce and deliver a college news service in print, broadcasting (TV and streaming radio), and a multimedia online format. This hands-on experience will provide students an opportunity to create materials suitable for inclusion in a portfolio. Although not required, students will be strongly encouraged to do an internship sometime during their junior or senior years. Finally, the capstone Convergent Media Seminar will bring seniors together to consider the larger, theoretical issues related to the fast-paced changes in communications today and into the future. With a degree in this program, students will be well-positioned to go right into industry, where they will be able to compete in a number of different job markets, or to graduate school for advanced training.

For the B.A. in Communications, a minimum of 123 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(See description of General Education in front of *Bulletin*)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES OR GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 12 credits

**BACHELOR OF ARTS DEGREE REQUIREMENTS:** 24 credits

(3 of these 24 credits are included in the REQUIREMENTS FOR THE MAJOR, GENERAL EDUCATION, or ELECTIVES and 0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)

(See description of Bachelor of Arts Degree Requirements in front of *Bulletin*.)

**REQUIREMENTS FOR THE MAJOR:** 42 credits **[1]**

**PRESCRIBED COURSES** (12 credits)

COMM 100 GS(3), COMM 150 GA(3) (Sem: 1-3)

COMM 260W(3) (Sem: 2-3)

COMM 490(3) (Sem: 7-8)

**ADDITIONAL COURSES** (30 credits)

Select 12 credits from the following, including 6 credits at 400-level: COMM 001(1-3)[2], COMM 002(1-3)[2], COMM 215(3), COMM 241(3), COMM 242(3), COMM 251(3), COMM 269(3), COMM 270(3), COMM 282(3), COMM 296(1-6), COMM 337(3), COMM 338(3), COMM 339(3), COMM 346(3), COMM 360(3), COMM 374(3), COMM 415(3), COMM 421W(3), COMM 438(3 max:6), COMM 439(3 max:6), COMM 448(3), COMM 460(3), COMM 461(3), COMM 462(3), COMM 467(3), COMM 468(3), COMM 469(3), COMM 471(3) (Sem: 5-8)

COMM 436(3), COMM 472(3), COMM 481(3), COMM 495(1-9), COMM 496(1-18) (Sem: 7-8)

Select 12 credits from the following, including 6 credits at 400-level: COMM 110 GH(3), COMM 180 GS(3), COMM 190 GS(3), COMM 205 US(3), COMM 250 GA(3), COMM 251(3), COMM 261 GH(3), COMM 292 GH(3), COMM 294(1-3), COMM 296(1-6), COMM 320(3), COMM 331(3), COMM 370(3) (Sem: 3-6)  
COMM 401(3), COMM 403(3), COMM 408(3), COMM 409(3), COMM 411(3), COMM 412(3), COMM 413W(3), COMM 454(3) (Sem: 5-8)  
COMM 417(3), COMM 451(3), COMM 452(3), COMM 494(1-3), COMM 496(1-18) (Sem: 7-8)

Select 6 credits from COMM 470A(3), COMM 470B(3), COMM 470C(3)

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

[2] A student may apply only 6 credits total of COMM 001 and COMM 002 towards the requirements of the Communications degree.

Last Revised by the Department: Fall Semester 2014

Blue Sheet Item #: 43-02-011

Review Date: 10/7/2014

**Comments**

AL

## Criminal Justice

*Abington College (CJAAB)*

*Altoona College (CJBA)*

*Penn State Berks (CJABL)*

PROFESSOR Peter M. Hopsicker, Division Head, Division of Education, Human Development, and Social Sciences

Students receiving a baccalaureate degree in criminal justice should understand each of the three main components of the criminal justice system and their interrelationships, be able to evaluate critically both current and future crime control policy proposals and criminal justice research, and understand the complexity of the crime phenomenon and its relationship to individual, social, and cultural factors. This major includes study in law

enforcement, courts and corrections individually and as components of a system, plus work in theories of crime causation, and crime control policy. Students should expect reading, writing, and critical thinking skills to be rigorously applied and developed throughout the degree program. The Bachelor of Arts degree in Criminal Justice provides a broadly based liberal arts background for the study of crime, justice and the criminal justice system. The Bachelor of Science degree offers an opportunity for educational enrichment in fields not traditionally considered part of the liberal arts. Either degree is excellent preparation for a career in criminal justice, graduate, or professional study, or informed citizenship.

For the B.A. degree in Criminal Justice, a minimum of 120 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(10-13 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 12-15 credits

**BACHELOR OF ARTS DEGREE REQUIREMENTS:** 24 credits

(3 of these 24 credits are included in the REQUIREMENTS FOR THE MAJOR, GENERAL EDUCATION, or ELECTIVES and 0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)

(See description of Bachelor of Arts Degree Requirements in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 49 credits **[1]**

(This includes 10-13 credits of General Education courses; 0-3 credits of GH courses; 4 credits of GQ courses; 6 credits of GS courses.)

**PRESCRIBED COURSES** (34 credits)

CRIMJ 100(3), SOC 012 GS(3), SOC 119 GS;US(4), STAT 200 GQ(4) (Sem: 1-4)

CRIMJ 210(3), CRIMJ 220(3), CRIMJ 230(3), CRIMJ 290(2)(Sem: 3-6)

CRIMJ 441(3), CRIMJ 450W(3), CRIMJ 495(3) (Sem: 5-8)

**ADDITIONAL COURSES** (15 credits)

PHIL 103 GH(3) or CRIMJ 465(3) (Sem: 1-4)

CRIMJ 250W(3) or SOC 207(3)

Select 9 credits from any 400-level CRIMJ course that does not already fulfill another requirement in the major. (Sem: 5-8)

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-01-016

Review Date: 8/23/16

UCA Revision #1: 8/3/06  
UCA Revision #2: 7/27/07

AL

## Criminal Justice

*Abington College (CJSAB)*  
*Altoona College (CJBS)*  
*Penn State Berks (CJSBL)*

*PROFESSOR Peter M. Hopsicker, Division Head, Division of Education, Human Development, and Social Sciences*

Students receiving a baccalaureate degree in criminal justice should understand each of the three main components of the criminal justice system and their interrelationships, be able to evaluate critically both current and future crime control policy proposals and criminal justice research, and understand the complexity of the crime phenomenon and its relationship to individual, social, and cultural factors. This major includes study in law enforcement, courts and corrections individually and as components of a system, plus work in theories of crime causation, and crime control policy. Students should expect reading, writing, and critical thinking skills to be rigorously applied and developed throughout the degree program. The Bachelor of Arts degree in Criminal Justice provides a broadly based liberal arts background for the study of crime, justice and the criminal justice system. The Bachelor of Science degree offers an opportunity for educational enrichment in fields not traditionally considered part of the liberal arts. Either degree is excellent preparation for a career in criminal justice, graduate, or professional study, or informed citizenship.

For the B.S. degree in Criminal Justice, a minimum of 120 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits  
(10-13 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**  
(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**  
(Included in REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**  
(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 27-30 credits

**REQUIREMENTS FOR THE MAJOR:** 57 credits<sup>[1]</sup>  
(This includes 10-13 credits of General Education courses: 0-3 credits of GH courses; 4 credits of GQ courses; 6 credits of GS courses.)

**PRESCRIBED COURSES** (33 credits)  
CRIMJ 100(3), SOC 012 GS(3), SOC 119 GS;US(4), STAT 200 GQ(4) (Sem: 1-4)  
CRIMJ 210(3), CRIMJ 220(3), CRIMJ 230(3), CRIMJ 290(1)(Sem: 3-6)  
CRIMJ 441(3), CRIMJ 450W(3), CRIMJ 495(3) (Sem: 5-8)<sup>45</sup>

**ADDITIONAL COURSES** (15 credits)

PHIL 103 GH(3) or CRIMJ 465(3) (Sem: 1-4)

CRIMJ 250W(3) or SOC 207(3)

Select 9 credits from any 400-level CRIMJ course that does not already fulfill another requirement in the major. (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (12 credits)

Select 12 credits, in consultation with the adviser, in one or two of the following skill enhancement areas: accounting, computers, composition and rhetoric, counseling, education, law and legal studies, foreign language, management, public speaking, research methods and statistics, science and engineering, biobehavioral health; or in the following topics: adolescence, deviant behavior, drugs, minorities (Sem: 3-6)

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-01-017

Review Date: 8/23/16

UCA Revision #1: 8/3/06

UCA Revision #2: 7/27/07

AL

# Electro-Mechanical Engineering Technology

*Altoona College**Berks College**University College: Penn State New Kensington, Penn State York (EMET)*

PROFESSOR SVEN BILÉN, Head, School of Engineering Design, Technology, and Professional Programs, College of Engineering, University Park

PROFESSOR IVAN E. ESPARRAGOZA, Director of Engineering Technology and Commonwealth Engineering, Penn State Brandywine

PROFESSOR JENNILYN VALLEJERA, Program Coordinator, Penn State Altoona

PROFESSOR TERRY SPEICHER, Program Coordinator, Penn State Berks

PROFESSOR KARL HARRIS, Program Coordinator, Penn State New Kensington

PROFESSOR CHARLES GASTON, Program Coordinator, Penn State York

The Electro-Mechanical Engineering Technology (B.S. EMET) degree program provides the basic undergraduate education required for a career as an electro-mechanical engineering technologist. The program emphasizes a breadth of knowledge in all fields of engineering technology related to typical, highly-automated manufacturing, production, or assembly plant processes. Basic coverage is provided in all major areas to technology involved in the operation and control of manufacturing and production processes, including instrumentation and monitoring methods, principles of machine design, automated control techniques, thermal and fluid sciences, computerized manufacturing systems, principles of electrical and electronic circuit operation, computer-aided drafting and design, economics of production, and statistical analysis and quality control.

The primary aim of the EMET program is to provide graduates with the knowledge and skills necessary to apply current methods and technology to the development, design,



operation, and management of electro-mechanical systems, particularly in those industries where automated systems are prevalent.

### **Program Educational Objectives:**

Specific educational objectives of the program expect that graduates of the program, within five years of graduation will be:

1. Capable of and actively involved in the specification, procurement, or integration of electromechanical systems
2. Capable of and actively involved in the operation, testing, or maintenance of electromechanical systems
3. Capable of and actively participating in project team activities
4. Capable of and actively involved in the preparation and delivery of technical documentation and communication

### **Program Outcomes (Student Outcomes):**

At graduation, EMET students should have:

- a) An ability to select and apply the knowledge, techniques, skills, and modern tools of their disciplines to broadly-defined engineering technology activities,
- b) An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies,
- c) An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes,
- d) An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives,
- e) An ability to function effectively as a member or leader on a technical team,
- f) An ability to identify, analyze, and solve broadly-defined engineering technology problems,
- g) An ability to communicate effectively regarding broadly-defined engineering technology activities,
- h) An understanding of the need for and an ability to engage in self-directed continuing professional development,
- i) An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity,
- j) A knowledge of the impact of engineering technology solutions in a societal and global context, and
- k) A commitment to quality, timeliness, and continuous improvement.

In addition, EMET graduates must demonstrate the knowledge and technical competency to:

- a) Use computer-aided drafting or design tools to prepare graphical representations of electromechanical systems.
- b) Use circuit analysis, analog and digital electronics, basic instrumentation, and computers to aid in the characterization, analysis, and troubleshooting of electromechanical systems.
- c) Use statics, dynamics (or applied mechanics), strength of materials, engineering materials, engineering standards and manufacturing processes to aid in the characterization, analysis, and troubleshooting of electromechanical systems.
- d) Use appropriate computer programming languages for operating electromechanical systems.
- e) Use electrical/electronic devices such as amplifiers, motors, relays, power systems, and computer and instrumentation systems for applied design, operation, or troubleshooting

electromechanical systems.

f) Use advanced topics in engineering mechanics, engineering materials, and fluid mechanics for applied design, operation, or troubleshooting of electromechanical systems.

g) Use basic knowledge of control systems for the applied design, operation, or troubleshooting of electromechanical systems.

h) Use differential and integral calculus, as a minimum, to characterize the static and dynamic performance of electromechanical systems.

i) Use appropriate management techniques in the investigation, analysis, and design of electromechanical systems.

The major is organized as a four-year baccalaureate program with the corresponding Penn State admission requirements. Graduates of an associate degree in either electrical or mechanical engineering technology from Penn State may re-enroll in the EMET program. The College of Engineering ENGR students may enroll through "Change of Major" procedures. Students from an engineering technology program at another institution or community college accredited by TAC of ABET may transfer into the program with advanced standing.

For the B.S. degree in Electro-Mechanical Engineering Technology, a minimum of 130 credits is required. This program is accredited at Penn State Altoona, Penn State Berks, Penn State New Kensington, and Penn State York of the University College by the Engineering Technology Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(24 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR) (See description of General Education in front of Bulletin.)

**FIRST-YEAR EXPERIENCE:**

(Satisfied by the FYE program at the campus at which the student is enrolled in the EMET program)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in GENERAL EDUCATION course selection)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**REQUIREMENTS FOR THE MAJOR:** 109-114 credits

(This includes 24 credits of General Education courses; 6 credits of GQ courses; 9 credits of GN courses; 6 credits of GWS courses; 3 credits of GH or GS courses.)

**PRESCRIBED COURSES** (73 credits)

MCHT 111(3)[1] (Sem: 1-2)

CMPET 117(3)[1], CMPET 120(1)[1], CMPET 211(3), EDSGN 100(3), EET 105(3), EET 114(4)[1], EET 118(1)[1], EET 212(4)[1], EET 275(3), EGT 114(2), EMET 100(1), EMET 215(3), EMET 222(3)[1], EMET 225(2), EMET 230(3)[1], EMET 325(3), EMET 326(3), EMET 330(3)[1], EMET 350(3) EMET 403(1) (Sem: 5-6)

EMET 405(3), EMET 410(4), EMET 440(3), ENGL 202C GWS(3), IET 101(3), IET 333(2) (Sem: 7-8)

**ADDITIONAL COURSES** (27-31 credits)

Select 5-6 credits from MATH 40 GQ(5)[1]; or [MATH 22 GQ(3)[1] and MATH 26 GQ(3)[1]; or [MATH 81 GQ(3)[1] and MATH 82 GQ(3)[1] \* (Sem: 1-2)

Select 3 credits of GH or GS from: ENGR 320Y GS;US;IL;WAC(3), STS 200 GS(3), STS 233 GH(3), or STS 245 GS;IL(3) (Sem: 2-8)

Select 10-11 credits from:

CAS 100A GWS(3); CAS 100B GWS(3) (Sem: 3-4)

MATH 83 GQ(4)[1]\*\* or MATH 140 GQ(4)[1] (Sem: 3-4)

MATH 210 GQ(3) or MATH 141 GQ(4) (Sem: 3-4)

Select 3 credits from MATH 211 GQ(3)[1] or MATH 250(3)\*\*\* (Sem: 4-5)

Select 6-8 credits of GN courses from two of the following groups:

CHEM 110 GN(3) and CHEM 111 GN(1) (Sem: 4-6)

PHYS 150 GN(3) or PHYS 211 GN(4) or PHYS 250 GN(4) (Sem: 4-6)

PHYS 151 GN(3) or PHYS 212 GN(4) or PHYS 251 GN(4) (Sem: 4-6)

### **SUPPORTING COURSES AND RELATED AREAS (9-10 credits)**

Select 3-4 credits of science courses, in consultation with an adviser, from the approved department list (Sem: 4-6)

Select 6 credits of General Technical Elective courses, in consultation with an adviser, from the approved department list (Sem: 7-8)

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

\*students taking MATH 81 GQ(3) and MATH 82 GQ(3) must take MATH 83 GQ(4)

\*\*students taking MATH 83(4) must take MATH 210(3) and MATH 211(3)

\*\*\*Note that MATH 250 does not carry a C-requirement

Last Revised by the Department: Fall Semester 2017

Blue Sheet Item #: 46-01-040

Review Date: 8/22/2017

UCA Revision #1: 8/3/06 UCA Revision #2: 7/27/07

Comments

EN

# **Elementary and Early Childhood Education**

*Penn State Abington*

*Penn State Altoona*

*Penn State Berks*

*Penn State Erie, The Behrend College*

*University Park, College of Education (CEAED)*

PROFESSOR STEPHANIE SERRIERE, *Director*

Not all options are available at every campus. Contact the campus you are interested in attending to determine which options are offered.

**ELEMENTARY & EARLY CHILDHOOD EDUCATION.** The Elementary and Early Childhood Education (ECEE) major prepares candidates to teach all content areas in Pre-Kindergarten through grade 4 (PK-4). Requirements for successful completion of the major include coursework specific to elementary and early childhood learning environments, child development, and field experiences in grades PK-4 classrooms, as well as content and teaching methods courses specific to teaching language and literacy, mathematics, science, and social studies. Students who successfully complete this major

will have met all coursework and field experience requirements for the PK-4 Instructional I Certificate issued by the Pennsylvania Department of Education (PDE). In addition, they will have been prepared for the appropriate PRAXIS exams, which are the standardized assessment required by PDE for this certification.

Students must apply for admission to the major. Students interested in the major should contact their advisor and enroll in a C I 295 field experience, which features participation in the classroom.

Baccalaureate degree candidates must meet the following requirements 1-3 by the end of their third semester:

1. A minimum cumulative grade point average of 3.00.
2. Satisfaction of any basic-skills or entrance testing requirements as specified by the Pennsylvania Department of Education in force at the time of application for entrance to the major.

Requirements 3-8 must be met by the end of the fourth semester when students typically participate in the Entrance to Major process.

3. A grade of "C" or better in all specified courses.
4. Completion of an early field experience specified by the certification program.
5. Completion of a core of Education courses specified by the certification program.
6. Completion of additional credits as specified by the certification program.
7. Completion of at least 48 semester credit hours, including ENGL 015 GWS(3) or ENGL 030 GWS(3), six credits of quantification, and three credits of natural science.
8. Approval from the professional education adviser or the head of the pertinent certification program.

For the B.S. degree in Elementary & Early Childhood Education PK-4, a minimum of 127 credits is required.

**GENERAL EDUCATION:** 45 credits  
(27 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**FIRST YEAR SEMINAR:**  
(Included in GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**  
(Included in ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**  
(Included in REQUIREMENTS FOR THE MAJOR)

**REQUIREMENTS FOR THE MAJOR:** 109-110 credits **[1]**  
(This includes 27 credits of General Education courses: 6 credits of GH courses, 9 credits of GN courses, 6 credits of GQ courses, 6 credits of GS)

**PRESCRIBED COURSES** (76 credits)  
C I 295A(3), HD FS 229 GS(3) (Sem: 1-3)  
C I 280 GH(3), EDPSY 014(3), EDTHP 115 US(3), MATH 200 GQ(3) (Sem: 1-4)  
A ED 303(3), C I 495A(3), C I 495D(12), C I 495F(3), E C E 451(3), E C E 479(3), KINES 126(1.5), KINES 127(1.5), LL ED 400(3), LL ED 401(3), LL ED 402(3), MTHED 420(3), MUSIC 241(3), SCIED 458(3), SPLED 400(4), SPLED 403A(3), SS ED 430W(3) (Sem: 5-8)

**ADDITIONAL COURSES** (6-7 credits)  
Select 3-4 credits from: EDPSY 101 GQ(3); STAT 100 GQ(3); STAT 200 GQ(4) (Sem: 1-4)

AND

Any MATH GQ course (Sem: 1-4)

**SUPPORTING COURSES AND RELATED AREAS (27 credits)**

Select 3 credits in of Economic Geography (GS;US;IL) (Sem: 1-4)

Select 3 credits in literature (GH) (Sem: 1-4)

Select 3 credits of US History (GS;US;IL) (Sem: 1-4)

Select 9 credits: 3 credits each (including one course with a lab) from biological science, earth science, and physical science (GN) (Sem: 1-6)

Select 3 credits on family and relationships from:

E C E 453(3), HD FS 315 US(3), HD FS 415(3), HD FS 418(3), HD FS 424 US(3), HD FS 431(3), HD FS 469U IL(3), SOC 030 GS(3), or WL ED 444(3) (Sem: 1-4)

Select 6 credits of educational selections from:

APLNG 484(3), APLNG 493 IL(3), C I 405(3), CMAS 465(3), DANCE 412(3), E C E 452(3), E C E 454(3), EDLDR 409(3), EDLDR 476(3), EDLDR 480(3), EDPSY 421(3), EDTHP 401 IL(3), EDTHP 411 US(3), EDTHP 412(3), EDTHP 416 US(3), EDTHP 420(3), EDTHP 427(3), EDTHP 430(3), EDTHP 435(3), EDTHP 440(3), EDTHP 441(3), EDTHP 447 US(3), EDUC 302(3), EDUC 466(3), EDUC 467(3), EDUC 468(3), HD FS 301(3), HD FS 311(3), HD FS 315 US(3), HD FS 330(6), HD FS 411(3), HD FS 412(3), HD FS 418(3), HD FS 424 US(3), HD FS 428(3), HD FS 429(3), HD FS 430(6), HD FS 432(3), HD FS 440(3), HD FS 447(3), HD FS 499 IL(1-12), LDT 400(3), LL ED 450(3), LL ED 462(3), LL ED 464(3), SPLED 401(4), SPLED 409A(3), SPLED 409B(3), SPLED 419(3), SPLED 454(4), SPLED 461(3), WL ED 400(3), WL ED 444(3) or WL ED 483(3) (Sem: 5-8)

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-01-054

Review Date: 8/23/2016

R & T: 01/14/2014

ED

**PROGRAM CURRENTLY ON HOLD;  
NOT ACCEPTING NEW STUDENTS  
Begin Date of Enrollment Hold: September 10, 2010**

\*\*Please Note: Individuals interested in earning Pennsylvania teaching credentials for grades PK-8 should refer to the **Childhood and Early Adolescent Education** major.

## **Elementary and Kindergarten Education**

*Altoona College (EEDAL): Elementary Education Teaching Option*

*Berks College (EEDBL)*

*University Park, College of Education (EK ED)*

Not all options are available at every campus. Contact the campus you are interested in attending to determine which options are offered.

PROFESSOR STEPHANIE SERRIERE, *in charge*

This major offers teaching options in Early Childhood Education and in Elementary Education. Students successfully completing this major will have met all of the requirements for the N-3 or K-6 College Instructional I certificate issued by the Pennsylvania Department of Education. Students must indicate their choice of teaching option at the time they make application for admission to a teacher education major. Students who are undecided at this time about which teaching option to select should contact their adviser and enroll in a field experience featuring participation in the classroom.

**EARLY CHILDHOOD TEACHING OPTION:** Students successfully completing this option will have met all of the requirements for the N-3 Instructional I certificate issued by the Pennsylvania Department of Education. Special courses in both human development and education are used to integrate understanding of preschool programs with relevant theories of child development.

**ELEMENTARY EDUCATION TEACHING OPTION:** Students successfully completing this option will have met all of the requirements for the K-6 Instructional I certificate issued by the Pennsylvania Department of Education.

For the B.S. degree in Elementary and Kindergarten Education, a minimum of 129.5 credits is required for the Early Childhood Teaching Option and a minimum of 122 credits is required for the Elementary Education Teaching Option. (See also [Teacher Education Programs](#).)

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits  
(27-30 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**  
(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**  
(Included in ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**  
(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 0-3 credits

**REQUIREMENTS FOR THE MAJOR:** 101-117 credits  
(This includes 27-30 credits of General Education courses: 6 credits of GS, 6 credits of GQ, 6 credits of GH, and 9 credits of GN courses for both options. The Early Childhood Teaching option permits 3 credits of GHA.)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 84.5-85.5 credits<sup>[1]</sup>

**PRESCRIBED COURSES** (57.5 credits)

C I 295(2), EDPSY 014(3), ENGL 100(3), MATH 200 GQ(3) (Sem: 1-4)  
A ED 303(3), C I 495B(3), C I 495D(12), C I 495F(3), KINES 126(1.5), LL ED 400(3), LL ED 401(3), LL ED 402(3), MTHED 420(3), MUSIC 241(3), SCI ED 458(3), SPLED 400(3), SS ED 430W(3) (Sem: 5-8)

**ADDITIONAL COURSES** (15-16 credits)  
EDTHP 115 US(3) or EDTHP 115A GS;US(3) (Sem: 1-3)

HIST 020 GH;US(3) or HIST 021 GH;US(3) (Sem: 1-4)  
STAT 100 GQ(3), STAT 200 GQ(4) or EDPSY 101 GQ(3) (Sem: 1-4)  
ECON 102 GS(3), ECON 104 GS(3) or ECON 014 GS(3) (Sem: 1-8)  
GEOG 020 GS;US;IL(3), GEOG 030 GS;IL(3), GEOG 126 GS;US;IL(3), GEOG 122 GH;US(3),  
GEOG 123 GS;IL(3), GEOG 120 GS;US;IL(3), GEOG 124 GS;IL(3), or GEOG 128 GS;IL(3) (Sem:  
1-8)

**SUPPORTING COURSES AND RELATED AREAS** (12 credits)

Select 3 credits in literature GH (Sem: 1-4)

Select 9 credits: 3 credits each (including one course with a lab) from the following GN  
biological science, earth science and physical science (Sem: 1-6)

**REQUIREMENTS FOR THE OPTION:** 16.5-30 credits

**EARLY CHILDHOOD TEACHING OPTION:** (27-30 credits)**[1]**

**PRESCRIBED COURSES** (15 credits)

E C E 451(3), E C E 452(3), E C E 453(2), E C E 454(3), E C E 479(3), C I 495A(1) (Sem: 5-8)

**ADDITIONAL COURSES** (12-15 credits)

H P A 101(3) or NUTR 251 GHA(3) (Sem: 1-2)

HD FS 315 US(3) or SOC 030 GS(3) (Sem: 1-4)

HD FS 229 GS(3) or PSYCH 100 GS(3) and PSYCH 212 GS(3) (Sem: 1-4)

HD FS 428(3) or HD FS 429(3) (Sem: 5-8)

**ELEMENTARY EDUCATION TEACHING OPTION:** (16.5-19.5 credits)**[1]**

**PRESCRIBED COURSES** (1.5 credit)

KINES 127(1.5) (Sem: 5-8)

**ADDITIONAL COURSES** (3-6 credits)

HD FS 229 GS(3) or EDPSY 010 GS(3) or PSYCH 100 GS(3) and PSYCH 212 GS(3) (Sem: 1-4)

**SUPPORTING COURSES AND RELATED AREAS** (12 credits)

Select 3 credits in MATH or MTHED (Sem: 1-8)

Select 6 credits from EDTHP at the 400 level, ECE at the 400 level, SPLED at the 400 level,  
EDLDR 405(3), EDLDR 497(1-9), LL ED 497(1-9) (Sem: 5-8)

Select 3 credits in U.S. History (Sem:1-8)

**[1]** A grade of C or better per course is required for teacher certification.

Last Revised by the Department: Summer Session 2005

Blue Sheet Item #: 33-06-097

Review Date: 2/12/08

UCA Revision #1: 8/3/06

ED

## English

*Abington College (ENGAB)*

*Altoona College (ENGAL)*

*University College (ENGCC): Penn State Brandywine, Penn State Greater Allegheny, Penn  
State Wilkes-Barre, Penn State Worthington Scranton, Penn State York*

University Park, College of the Liberal Arts (ENGL)

PROFESSOR Mark Morrisson, *Department Head*

Majors explore the imaginative and practical uses of English through courses in literature, writing, rhetoric, and language. They develop perspectives on human nature and cultural values through American, British, and other English literatures; they learn how to gather, analyze, synthesize, and communicate information; they gain mastery over their language. These skills help English majors find careers in such fields as publishing, business, industry, government, and teaching. English majors often go on to postgraduate study not only in English but in such areas as law, business, education, or other liberal disciplines.

Majors can emphasize writing, literature, or rhetoric, or a mix of literature, writing, and rhetoric. All provide a liberal education and all develop analytic and writing skills. Qualified students may participate in the career internship and in the English honors program.

Students interested in earning certification in secondary education should contact the College of Education, Department of Curriculum and Instruction. (See also Teacher Education Programs.)

For the B.A. degree in English, a minimum of 123 credits is required.

Per Senate Policy 83-80.5, the college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. For more information, check the Recommended Academic Plan for your intended program.

Scheduling Recommendation by Semester Standing given like (Sem: 1-2)

**GENERAL EDUCATION:** 45 credits  
(See description of General Education in front of *Bulletin*.)

**FIRST-YEAR SEMINAR:**  
(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**  
(Included in ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**  
(Included in ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 18 credits

**BACHELOR OF ARTS DEGREE REQUIREMENTS:** 24 credits  
(3 of these 24 credits are included in the REQUIREMENTS FOR THE MAJOR, GENERAL EDUCATION, or ELECTIVES and 0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)  
(See description of Bachelor of Arts Degree Requirements in front of *Bulletin*.)

**REQUIREMENTS FOR THE MAJOR:** 36 credits **[1]**

**ADDITIONAL COURSES** (18 credits)  
Select 3 credits from ENGL 200(3) or ENGL 201 GH(3) (Sem: 1-6)  
Select 3 credits of a 300/400-level course in each of the following areas:  
Medieval through Sixteenth Century (Sem: 1-8)



Sixteenth Century through Eighteenth Century (Sem: 1-8)  
The Nineteenth Century (Sem: 1-8)  
Twentieth Century to the Present (Sem: 1-8)  
Select 3 credits from ENGL 494H(3) or ENGL 487W(3) (Sem: 5-8)

### **SUPPORTING COURSES AND RELATED AREAS (18 credits)**

In consultation with adviser, select 18 credits in literature, writing, or rhetoric (Sem: 1-8)  
(At least 9 credits must be at the 300/400 level)

At least 3 of the 300/400 level credits must fulfill a departmental diversity requirement for a course related to race, gender, sexuality, disability, ethnicity, and/or postcolonial issues).

## **Integrated B.A./M.A. Program in English**

The BA in English requires a minimum of 123 credits, with 36 of those credits required for the English major-3 credits of English 200, 3 credits of English 201, 3 credits of English 221, 18 credits of English 300 level or above, 3 credits of pre-1800 300 level or above, 3 credits of post-1800 race, ethnic, or minority literatures 300 level or above, 3 credits of English 487W, senior seminar.

The B.A./M.A. consists of these 36 English credits of the B.A., plus an additional 24 English credits of M.A. work distributed as follows: 12 credits of English 512, 513, or 515. English 512, 513, and 515 can be repeated for credit. In addition, students will take 6 credits of a graduate-level literature and 6 credits of M.A. Master's paper, 596, to support work on a major project that will be the centerpiece of each student's culminating Master's paper. In the Master's paper, students receiving an M.A. in English with a creative writing concentration will append their Master's paper with a bibliographic essay referencing primary and/or secondary sources generated by their research for the paper. The essay can discuss the range of research modalities, including contextual background in the work itself as well as contemporary and historic literature that has influenced the style and form of the Master's paper. Sources consulted for contextual background can include library and database materials, historical research, oral history, interviews, and other bibliographic tools. 12 credits, 6 at the 400 level (412/413/415) and 6 at the 500 level (512/513/515), will be double counted between the B.A. and the M.A. The IUG B.A./M.A. consists of a total of 60 English credits.

A minimum of 141 credits are required to complete the IUG B.A./M.A. in English.

### **Time of Admission to the Program**

Students shall be admitted to the English IUG program no earlier than the beginning of the third semester of undergraduate study at Penn State (regardless of transfer or AP credits accumulated prior to enrollment) and no later than the end of the second week of the semester preceding the semester of expected conferral of the undergraduate degree, as specified in the proposed IUG plan of study.

Application to the English IUG would typically occur in the junior year after a student has completed 60 credits, enrolled in the English major, and completed two English courses in creative writing.

### **Admission Requirements**

Admission to the integrated B.A./M.A. program will be based on the submission of a portfolio of creative work and a plan of study to the department's Director of Graduate Studies and the Director of the B.A./M.A. program. Applications typically will be filed during the 5th or 6th semesters of study, and applicants must have achieved a minimum of 60 credits and a 3.3 overall GPA and 3.6 GPA in English to begin the program. The

English Director of Graduate Studies will ensure that the applicant meets the minimum credit and GPA requirements for the program. The Director of the B.A./M.A. program will evaluate the quality of the student's creative work and the applicant's plan for fulfilling the requirements of the M.A. in English. The Director of the B.A./M.A. program, in consultation with the Creative Writing faculty, will have final approval for what constitutes an acceptable level of creative work and an acceptable plan for the completion of the M.A.

The application procedure requires submission of the following:

- A. Support Letters from Faculty and Administrators (addressed to the department's Director of Graduate Studies and the Director of the B.A./M.A. program)
- B. A Personal Statement
- C. Portfolio of Creative Work
- D. A Plan of Study
- E. A transcript and degree audit printed from e-Lion
- F. A current resume or curriculum vita
- G. A copy of the completed on-line Graduate School Application (GRE scores are not required).

### **Plan of Study and Advising**

Prior to the application process, students should communicate their intent to enroll in the IUG to the English B.A. adviser and the Director of the B.A./M.A. program. The Director of the B.A./M.A. will help each student identify an appropriate series of English courses to properly prepare each student for the 500-level M.A. workshops and 500-level literature courses.

Students will be expected to maintain a minimum overall GPA of 3.3 for all undergraduate coursework and a GPA of 3.6 in English (ENGL) courses throughout the IUG program of study. Failure to do so will result in the student being advised that he/she must regain a GPA of 3.3 within one semester. If the GPA is not 3.3 or higher in general undergraduate coursework and 3.6 or higher in English coursework after that term, the student will be dropped from the IUG.

Each student enrolled in the B.A./M.A. will meet at the beginning of each term with the Director of the B.A./M.A. to discuss his or her progress through the M.A. degree and to make sure that he or she is following the plan established upon his or her admission to the B.A./M.A. program.

If the student decides not to continue on in the IUG, the student may, contingent on fulfilling all other requirements for the BA in English, graduate with a B.A. in English.

### **Sequence of Courses**

The IUG B.A./M.A. consists of a total of 60 English credits. A minimum of 141 credits are required to complete the IUG B.A./M.A. in English.

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-01-106

Review Date: 8/23/2016

### **Comments**

# Environmental Studies

*Altoona College (ENVBA)*

PROFESSOR DARIN ZIMMERMAN, *Head*

This interdisciplinary major is designed to provide students with an integrated and critical knowledge of the natural environment and human interactions with it. Students will receive a strong foundation in the natural sciences but will extend their studies across several disciplines, emphasizing both public policy issues and the role of the natural environment in history and culture. The goal of the program is "ecological literacy," which means that students will develop a broad-based understanding and awareness of environments and environmental issues, and they will develop the problem-solving skills to address those issues. Program requirements include interdisciplinary courses in environmental studies and a broad array of courses in biology, geology, chemistry, geography, economics, political science, English, history, and philosophy. By selecting appropriate electives to supplement the "additional courses" requirement of the major, students may develop an emphasis in either a specific field (i.e., biology, English) or in a general area of study (natural science, social science, and humanities). Graduates are equipped for employment as environmental consultants in business or with governmental agencies and public interest groups. Many may go on to postgraduate study in environmental science, public policy, or the humanities, or to law school.

A student wishing to transfer into the Environmental Studies program must have completed the following course ENVST 100(3) and have received a grade of C or better in the course.

For the B.A. degree in Environmental Studies, a minimum of 120 credits is required.

*Scheduling Recommendations by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(21 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES, GENERAL EDUCATION course selections or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 10-11 credits

**BACHELOR OF ARTS DEGREE REQUIREMENTS:** 24 credits

(3 of these 24 credits are included in the REQUIREMENTS FOR THE MAJOR, GENERAL EDUCATION, or ELECTIVES and 0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)

(See description of Bachelor of Arts Degree Requirements in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 64-65 credits **[1]**

(This includes 21 credits of General Education courses as follows: 3 credits of GH courses; 9 credits of GN courses; 3 credits of GQ courses; 6 credits of GS courses.)

**PRESCRIBED COURSES** (39 credits)

BIOL 110 GN(4), BIOL 220W GN(4), ENVST 100(3), ENGL 180 GH(3), GEOSC 1(3) (Sem: 1-2)  
CHEM 20(3), CHEM 21(1), ENVST 200(3), GEOG 115 GN(3) (Sem: 3-4)  
ECON 428(3), GEOG 160 GS(3), PHIL 403(3) (Sem: 5-6)  
ENVST 400(3) (Sem: 7-8)

**ADDITIONAL COURSES** (16-17 credits)

ECON 102 GS(3) or ECON 104 GS(3) (Sem: 1-2)  
PLSC 135 GS(3) or PLSC 425(3) (Sem: 5-6)  
STAT 200 GQ(4) or STAT 250 GQ(3) (Sem: 5-8)  
GEOG 407(3) or HIST 453(3) (Sem: 7-8)  
Select ENVST 395(1-18) and INTSP 370(1); or ENVST 496(4); or ENVST 296(1) and ENVST 496(3) (Sem: 7-8)

**SUPPORTING COURSES AND RELATED AREAS** (9 credits)

Select 9 credits (3 in each departmental list) in consultation with an academic adviser.  
At least six credits must be at the 400-level. (Sem: 3-8)

- a. Natural Sciences
- b. Social Sciences
- c. Arts and Humanities

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Spring Semester 2012

Blue Sheet Item #: 40-06-006

Review Date: 04/10/2012

UCA Revision #1: 8/4/06

UCA Revision #2: 7/27/07

AL

Publications updated head: 3/21/11

## **Environmental Studies**

*Altoona College (ENVBS)*

Professor Darin Zimmerman, *Head*

This interdisciplinary major is designed to provide students with an integrated and critical knowledge of the natural environment and human interactions with it. Students will receive a strong foundation in the natural and physical sciences, but will extend their studies across several disciplines, emphasizing both public policy issues and the role of the natural environment in literature, history, and culture. The goal of the program is "ecological literacy," which means that students will develop a broad-based understanding and awareness of environments and environmental issues, and they will develop the problem-solving and technical skills to address those issues. Program requirements include interdisciplinary courses in environmental studies and a broad array of courses in biology, geology, chemistry, physics, geography, economics, political science, English, history, and philosophy. By selecting appropriate electives to supplement the "additional courses" requirement of the major, students may develop an emphasis in either a specific field (i.e., biology) or in a general area of study (natural science, social science, and humanities).

The B.S. in Environmental Studies will better prepare our graduates for graduate studies and/or employment in the sciences (e.g., ecology, geosciences, environmental sciences, and physical geography). Many graduate programs require at least one semester of calculus, chemistry, and physics. Furthermore, the requirements of additional 400-level courses in the sciences will permit students to target their undergraduate studies in a particular area of science so that they are best prepared for graduate work in their area of choice and/or employment.

**Entrance to Major Requirements:**

For entrance into the Environmental Studies B.S. program, students must have completed the following course ENVST 100(3) and have received a grade of C or better in the course.

For the B.S. degree in Environmental Studies, a minimum of 121 credits is required.

*Scheduling Recommendations by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(24 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES, GENERAL EDUCATION course selections or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 12 credits

**REQUIREMENTS FOR THE MAJOR:** 88-90 credits

(This includes 24 credits of General Education courses as follows: 3 credits of GH courses; 9 credits of GN courses; 6 credits of GQ courses; 6 credits of GS courses.)

**PRESCRIBED COURSES** (56 credits)**[1]**

BIOL 110 GN(4)**[1]**, BIOL 220W GN(4)**[1]**, CHEM 20(3)**[1]**, CHEM 21(1)**[1]**, ENGL 180 GH(3)**[1]**, ENVST 100 GS(3)**[1]** (Sem: 1-2)  
CHEM 110 GN(3)**[1]**, CHEM 111 GN(1)**[1]**, ENVST 200(3)**[1]**, GEOSC 1(3)**[1]**, PHYS 250 GN(4)**[1]**, SOILS 101 GN(3)**[1]** (Sem: 3-4)  
CHEM 202(3)**[1]**, ECON 428(3)**[1]**, GEOG 115 GN(3)**[1]**, GEOG 160 GS(3)**[1]**, HIST 453(3)**[1]**, PHIL 403(3)**[1]** (Sem: 5-6)  
ENVST 400(3)**[1]** (Sem: 7-8)

**ADDITIONAL COURSES** (20-22 credits)

ECON 102 GS(3)**[1]** or ECON 104 GS(3)**[1]** (Sem: 1-2)  
MATH 110 GQ(4)**[1]** or MATH 140 GQ(4)**[1]** (Sem: 3-4)  
BIOL 222(3)**[1]** or BIOL 230W GN(4)**[1]** or BIOL 240W GN(4)**[1]** (Sem: 3-4)  
PLSC 135 GS(3)**[1]** or PLSC 425(3)**[1]** (Sem: 5-6)  
STAT 200 GQ(4)**[1]** or STAT 250 GQ(3)**[1]** (Sem: 3-6)  
Select ENVST 395(3)**[1]** and INTSP 370(1)**[1]**; or ENVST 496(4)**[1]**; or ENVST 296(1)**[1]** and ENVST 496(3)**[1]**(Sem: 7-8)

**SUPPORTING COURSES AND RELATED AREAS** (12 credits)

Select 12 credits from the three departmental lists (6 in natural science department list, 3 in social science department list, and 3 in arts and humanities department list in consultation with an academic adviser.)

At least nine credits must be at the 400-level.

**[1]**A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Spring Semester 2013

Blue Sheet Item #: 41-06-014

Review Date: 04/09/2013

## History

*Altoona College (HISAL)*

This major provides a broad introduction to the history of the great civilizations of the world and specific areas of historical inquiry. Centered in one of the basic, traditional disciplines, the History major offers invaluable preparation for students interested in a career in government, international relations, law, or librarianship, as well as essential training for those interested in a professional career as an academic or public historian, archivist, or secondary school teacher. Along with the perspective on the present that a study of the past engenders, the program develops skills in research, analysis, and synthesis that have proved useful in commerce and industry. The History major combines easily with minors or even multiple majors, providing flexibility in one's career choice.

For a B.A. degree in History, a minimum of 124 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits  
(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**  
(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**  
(Included in ELECTIVES or GENERAL EDUCATION course selection)

**WRITING ACROSS THE CURRICULUM:**  
(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 18 credits

**BACHELOR OF ARTS DEGREE REQUIREMENTS:** 24 credits  
(3 of these 24 credits are included in the REQUIREMENTS FOR THE MAJOR, GENERAL EDUCATION, or ELECTIVES and 0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)  
(See description of Bachelor of Arts Degree Requirements in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 37 credits**[1]**

**PRESCRIBED COURSES** (3 credits)  
HIST 302(3) (Sem: 5-6)

**ADDITIONAL COURSES** (16 credits)  
Select 12 credits in two of the three focus areas: HIST 1 GH;IL(3) and HIST 2 GH;IL(3); HIST 10 GH;IL(3) and HIST 11 GH;IL(3); HIST 20 GH;US(3) and HIST 21GH(3) (Sem: 1-8)  
HIST 494(4) or HIST 495(4) (Sem: 7-8)

## **SUPPORTING COURSES AND RELATED AREAS (18 credits)**

*At least 8 credits must be at the 400-level*

Select 12 credits in history (Sem: 1-8)

Select 6 credits in non-Western history (Sem: 1-8)

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2005

Blue Sheet Item #: 33-01-010

Review Date: 2/26/07

AL

## **Human Development and Family Studies**

*Penn State Altoona (HFSAL)*

*Penn State Harrisburg (HFSCA)*

*University College (HFSCC): Penn State Brandywine, Penn State DuBois, Penn State Fayette, Penn State Mont Alto, Penn State Shenango, Penn State Worthington-Scranton, Penn State York*

*College of Health and Human Development (HD FS)*

*World Campus*

Not all options are available at every campus. Contact the campus you are interested in attending to determine which options are offered.

PROFESSOR DOUGLAS M. TETI, *Head of the Department*

This major is a multidisciplinary program that examines the development of individuals and families across the life span. It enables students to prepare for professional, managerial, or scientific roles in health and human services professions, in public and nonprofit agencies, and in business and industry, as well as for advanced professional or graduate study. Students obtain a broad background in individual and family development across the life span. Courses emphasize biological, psychological, social/cultural, and economic aspects of development. Through course work and undergraduate internships or research projects, students develop skills relevant to career objectives, such as counseling, human assessment, program planning and evaluation, and research.

Two options are available within the major: (1) Life Span Human Services option and (2) Life Span Developmental Science option. The introductory paragraph to each of the options includes a brief list of career opportunities. More extensive descriptions of career opportunities in both public and private sectors are available for the program.

**LIFE SPAN HUMAN SERVICES OPTION:** This option focuses on the acquisition and application of scientific knowledge about development and family functioning across the life span for the purposes of enhancing personal and family development. Courses emphasize: (1) understanding the biological, psychological, and social development across the life span, and the structuring and functioning of families; (2) understanding basic theoretical and methodological issues; and (3) the development of applied skills in intervention and evaluation, prevention, and in the formulation of social policy. An approved field experience in a setting that serves children, youth, adults, or the aged is required for this option. Typical employment settings include preschools, daycare centers, hospital programs for children, youth, and families, institutional and community mental

health programs for individuals and families, programs for abused or neglected children and adolescents, women's resource centers, human resources programs, employee assistance programs, nursing homes, area agencies on aging and other community settings for older adults, and public welfare and family service agencies. Typical postgraduate pursuits of students completing this option include graduate study in human development, family studies, psychology, or sociology, or advanced professional training in psychology, law, behavioral health, counseling or social work.

**LIFE SPAN DEVELOPMENTAL SCIENCE OPTION:** This option focuses on the understanding of contemporary methodological approaches to the acquisition of scientific knowledge about individual development over the life span and about family development. This option provides preparation for advanced training in careers in developmental or family research, teaching at a college or university, or for professional careers that require graduate training. Courses within this option emphasize a thorough understanding of the theory and methods of developmental and family theory and research. An approved, multi-semester research practicum is an integral component of this option. Typical postgraduate pursuits of students completing this option include graduate study in human development, family studies, psychology, or sociology, or advanced professional training in psychology, law, behavioral health, social work, or in other programs related to services for individuals and families.

For the B.S. degree in Human Development and Family Studies, a minimum of 120 credits is required.

Per Senate Policy 83.80.5, the college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. HD FS requires students to complete 24 credits for the major through courses taken at University Park. Courses taken at other Penn State campuses may not be counted toward this 24 credit minimum. For more information, check the Recommended Academic Plan for this major.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits  
(3-4 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**  
(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**  
(Included in ELECTIVES, GENERAL EDUCATION course selections, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**  
(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 3-5 credits

**REQUIREMENTS FOR THE MAJOR:** 73-76 credits  
(This includes 3-4 credits of General Education GQ courses.)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 30-31 credits

**PRESCRIBED COURSES** (18 credits)[\[1\]](#)  
HDFS 129 GS(3), HDFS 301(3), HDFS 311(3), HDFS 312(3), HDFS 315 US(3)[\[93\]](#), HDFS 418(3) (Sem: 3-6)

**ADDITIONAL COURSES** (12-13 credits)[\[1\]](#)



Select 6 credits from HDFS 229 GS(3), HDFS 239 GS(3), HDFS 249 GS(3) (Sem: 1-4)  
STAT 200 GQ(4) or EDPSY 101 GQ(3) (Sem: 1-4)  
Select 3 credits of United States Cultures (US)**[92]** (Sem: 4-8)

**REQUIREMENTS FOR THE OPTION:** 43-45 credits

**LIFE SPAN HUMAN SERVICES OPTION:** (43-45 credits)

**PRESCRIBED COURSES** (9 credits)**[1]**

HDFS 411(3), HDFS 414(3), HDFS 455(3) (Sem: 5-8)

**ADDITIONAL COURSES** (22-24 credits)**[1]**

Select 3 credits from HDFS 428(3), HDFS 429(3), HDFS 433(3) or HDFS 445(3) (Sem: 5-8)

Select 6 credits from 300- or 400-level HDFS courses (Sem: 5-8)

Select 13-15 credits from (a) or (b)

(a) Approved field practice in a human service setting: HDFS 490(2), HDFS 495A(9), HDFS 495B(3) (Sem: 5-8)

(b) Approved group project or field practice in human service setting: HDFS 401(3), HDFS 402(4), HDFS 495C(6-8) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (12 credits)

Select 12 credits (minimum of 6 credits at the 400 level) in consultation with adviser from University-wide offerings that develop competency in the option (a grade of C or better is required in any HDFS course taken to satisfy this requirement) (Sem: 5-8)

**LIFE SPAN DEVELOPMENTAL SCIENCE OPTION:** 45 credits

**PRESCRIBED COURSES** (6 credits)**[1]**

HDFS 494(6) or HDFS 494H(6) (Sem: 5-8)

**ADDITIONAL COURSES** (21 credits)**[1]**

Select 6 credits from HDFS 428(3), HDFS 429(3), HDFS 433(3), HDFS 445(3) (Sem: 5-8)

Select 15 credits (minimum of 9 credits at the 400-level) from HDFS courses (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (18 credits)

Select 18 credits (minimum of 9 credits at the 400 level) in consultation with adviser from University-wide offerings that develop competency in option (a grade of C or better is required in any HD FS course taken to satisfy this requirement) (Sem: 5-8)

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

**[92]** This course is in addition to the 6 credits of United States Cultures and International Cultures.

**[93]** This course fulfills the University's United States Cultures requirement.

Last Revised by the Department: Summer Session 2006

Blue Sheet Item #: 34-02-111

Review Date: 10/11/05

HH

## **Integrative Arts**

*Abington College (IARAB)*

*Altoona College (IARAL)*

*University Park, College of Arts and Architecture (INART)*

PROFESSOR JANET HARTRANFT, *Ph.D., Program Coordinator, University Park*

Integrative Arts is an interdisciplinary major available to students who desire a curriculum that crosses over traditional single discipline lines. The Integrative Arts student initially establishes an academic plan with the assistance of an approved adviser. The plan must contain a core component of 42 credits and an elective component of 15 credits. The two components combined must clearly illustrate that the plan has clarity, purpose, and cohesion. All Integrative Arts students must complete 6 credits of history of the arts. These credits may be counted as a part of the major or, if outside the major, may be counted under General Education and/or Bachelor of Arts degree requirements. Consult with advisor for course selection.

For the B.A. degree in Integrative Arts, a minimum of 120 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(6 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 15 credits

**BACHELOR OF ARTS DEGREE REQUIREMENTS:** 24 credits

(3 of these 24 credits are included in the REQUIREMENTS FOR THE MAJOR, GENERAL EDUCATION, or ELECTIVES and 0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)

(See description of Bachelor of Arts Degree Requirements in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 42 credits

(This includes 6 credits of General Education courses: 6 credits of GA)

**SUPPORTING COURSES AND RELATED AREAS:** 42 credits<sup>[1]</sup>

(Must include at least 15 credits at the 400 or equivalent level)

(Must include 6 credits in History of the Arts)\_

Select 24 credits from an arts area (Sem: 1-8)

Select 12 credits from other arts areas (Sem: 1-8)

Select 6 credits of GA (Sem: 1-8)\_

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2012

Blue Sheet Item #: 41-03-010

Review Date: 11/13/2012

# Letters, Arts, and Sciences

*Abington College (LASAB)*

*Altoona College (LASAL)*

*University College (LASCC): Penn State Brandywine, Penn State DuBois, Penn State Greater Allegheny, Penn State Hazleton, Penn State Mont Alto, Penn State Shenango, Penn State Worthington Scranton*

*University Park, College of the Liberal Arts (LAS)*

*World Campus*

Letters, Arts, and Sciences is a multi-disciplinary, theme-oriented, and student-designed major leading to a bachelor of arts degree. The major consists of 36 credits, divided into two sections. The core (12 credits) consists of 3 credits each in the following: research methods/projects; communication skills; theory/application; and critical analysis. The additional courses (24 credits) consist of courses directed toward the student's theme, 15 credits of which must be at the 400 level.

In order to be eligible for entrance to the major, the student must submit a proposal. In consultation with an LAS adviser, the student formulates a proposal designing a program that investigates a theme from the viewpoint of at least three different subject areas. Students may not duplicate existing majors from any academic area. An important standard for entrance to the Letters, Arts, and Sciences major is the student's ability to design a program with academic integrity worthy of a bachelor of arts degree.

For the B.A. degree in Letters, Arts, and Sciences, a minimum of 120 credits is required.

Per Senate Policy 83-80.5, the college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. For more information, check the Recommended Academic Plan for your intended program.

***Early Admission Program for Professional Schools:*** If a student is accepted and enrolled as a degree candidate in a professional postgraduate degree program requiring three years or more to complete (such as medical school, dental school, law school, theological seminary, etc.) and if that student completes 94 undergraduate credits at Penn State including General Education, B.A. requirements, and the LAS 12-credit core requirements, that student may use up to 30 credits from the professional school to complete the B.A. in LAS.

It must be emphasized that only top students are accepted into professional school programs on such an early admission basis and that not every professional school has such a policy. Students must have enrolled in LAS prior to attending the professional school to request graduation in LAS.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**WRITING ACROSS THE CURRICULUM:**

(Included in ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 15 credits

**BACHELOR OF ARTS DEGREE REQUIREMENTS:** 24 credits

(3 of these 24 credits are included in the REQUIREMENTS FOR THE MAJOR, GENERAL EDUCATION, or ELECTIVES and 0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)

(See description of Bachelor of Arts Degree Requirements in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 36 credits[1]

**ADDITIONAL COURSES** (24 credits)

In consultation with adviser, select 24 credits from University-wide offerings to include:

- a) 12 credits at the 400 level representing at least three different subject areas;
- b) a 3 credit 400-level capstone course (to be selected in consultation with adviser);
- c) at least 9 credits (of the 24 total) from the humanities and social sciences. (Sem: 1-8)

**SUPPORTING COURSES AND RELATED AREAS** (12 credits)

In consultation with adviser, select 3 credits in research methods/projects from courses that involve research methodology or that focus on a research project; select 3 credits in communication skills from courses that focus on expression including those in verbal, symbolic, and written skills; select 3 credits in theory/application from courses that focus on theory, principle, central concepts, or fundamental issues; select 3 credits in critical analysis from courses that focus on evaluation, synthesis, and analysis. (Sem: 1-8)

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Summer Session 2008

Blue Sheet Item #: 36-04-042

Review Date: 1/15/08

Reviewed by Publications: 06/23/06

LA

## Mathematics

*Altoona College (MTAAL)*

*University Park, Eberly College of Science (MTHBA)*

PROFESSOR YUXI ZHENG, *Chair, Department of Mathematics*

Two degrees are offered in mathematics: the Bachelor of Arts and the Bachelor of Science. Both programs have a common core of mathematics courses; both programs prepare students for graduate work in mathematics. In addition, the Bachelor of Arts degree is oriented toward applications of mathematics in the arts and the humanities. The Bachelor of Science degree has a number of options. These options are oriented toward actuarial science, applied and industrial mathematics, computational mathematics, graduate study and systems analysis.

Many of the options are designed for students who want to use mathematics in industry, commerce, or government. In short, the degree requirements have the flexibility to fit

many individual interests. The student, with the assistance of a faculty adviser, should select an option by the end of the sophomore year.

In order to be eligible for entrance to the Mathematics major, a student must have: 1) attained at least a 2.00 cumulative grade point average; and 2) completed MATH 140 GQ(4) and MATH 141 GQ(4) and earned a grade of C or better in each of these courses.

For the B.A. degree in Mathematics, a minimum of 120 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(6 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selections)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in GENERAL EDUCATION or BACHELOR OF ARTS DEGREE REQUIREMENTS course selections)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 0-1 credit

**BACHELOR OF ARTS DEGREE REQUIREMENTS:** 24 credits

(3 of these 24 credits are included in the REQUIREMENTS FOR THE MAJOR, GENERAL EDUCATION, or ELECTIVES and 0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)

(See description of Bachelor of Arts Degree Requirements in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 56 credits

(This includes 6 credits of General Education GQ courses.)

**PRESCRIBED COURSES** (27-29 credits)

MATH 140 GQ(4)[1], MATH 141 GQ(4)[1], MATH 220 GQ(2-3)[1], MATH 230(4)[1], MATH 311W(3-4)[1], MATH 312(3)[1], STAT 200 GQ(4) (Sem: 1-4)

MATH 403(3)[1] (Sem: 5-8)

**ADDITIONAL COURSES** (18-19 credits)

CMPSC 101 GQ(3) or CMPSC 121 GQ(3) or CMPSC 201 GQ(3) (Sem: 1-2)

MATH 250(3)[1] or MATH 251(4)[1] (Sem: 3-4)

MATH 435(3)[1] or MATH 436(3)[1] (Sem: 5-8)

Select 3 credits[1] from MATH 411(3), MATH 412(3), MATH 417(3), MATH 419(3), or MATH 421(3) (Sem: 5-8)

Select 6 credits[1] of 400-level MATH courses except MATH 401(3), MATH 405(3), MATH 406(3), MATH 441(3), MATH 470(3), MATH 471(4) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (8-11 credits)

Select 8-11 credits from department list (Sem: 3-8)

**Integrated B.A. in Mathematics and Master of Applied Statistics (M.A.S.)**

The Integrated Undergraduate-Graduate (IUG) degree with B.A. in Mathematics and Master of Applied Statistics (M.A.S.) is designed to be completed in five years. This integrated degree will enable a select number of highly qualified and career oriented students to obtain training in statistics focused on developing data analysis skills, and exploration of core areas of applied statistics at the graduate levels in addition to an

undergraduate degree in Mathematics. The M.A.S. degree is a professional masters degree that emphasizes applications. The degree prepares students with interests in mathematics, computation, and the quantitative aspects of science for careers in industry and government as statistical analysts. Research divisions in the pharmaceutical industry, quality control, and quality engineering divisions in manufacturing companies, clinical research units, corporate planning and research units, and other data intensive positions require persons with training in mathematics, computation, database management, and statistical analysis, which this program will provide.

## **Application Process**

The number of openings in the integrated B.A. in Mathematics and M.A.S. program is limited. Admission will be based on specific criteria and the recommendation of faculty. Applicants to the integrated program:

Must be enrolled in the Mathematics B.A. program.

Must have completed at least 60 credits of the undergraduate degree program including the two courses: STAT 414 and STAT 415 and the students must apply to the integrated program prior to completing 110 credits.

Must submit a transcript and a statement of purpose.

Must present a departmental approved plan of study in the application process in consultation with the M.A.S. program director.

Must be recommended by the chair of Mathematics Department's undergraduate program committee. Two additional recommendation letters must be sent to the M.A.S. admissions committee.

Must submit the GRE to the M.A.S. admissions committee.

Must apply to the M.A.S. program in Statistics.

For the IUG B.A. in Mathematics and M.A.S. degree, 120 credits are required for the B.A. and 30 credits for the M.A.S. The following twelve graduate level credits (number of credits in parentheses) can apply to both B.A. and M.A.S. degrees, six of these are at the 500 level: STAT 414(3), STAT 415(3), STAT 501(3), STAT 502(3).

Assuming all requirements for the B.A. in Mathematics are completed, students in the program can complete the B.A. degree and not advance to the M.A.S. degree if they desire.

## **Degree Requirements**

IUG Math B.A. students must fulfill the Math B.A. requirement while counting these prescribed Statistics courses (15 credits)

STAT 220(3)\*, STAT 414(3), STAT 415(3), STAT 501(3), STAT 502(3)

**IUG M.A.S. Requirements** (30 credits)

STAT 414(3), STAT 415(3), STAT 501(3), STAT 502(3), STAT 580(2) and STAT 581(1)\*\*

**Electives:** (15 credits)

Select from STAT 464(3), STAT 503(3), STAT 504(3), STAT 505(3), STAT 506(3), STAT 507(3), STAT 508(3), STAT 509(3), STAT 510(3) and the departmental list of additional courses for the M.A.S. program with the approval of the adviser.

For the IUG B.A. in Mathematics and M.A.S. degree, the four courses: STAT 414(3), STAT 415(3), STAT 501(3) and STAT 502(3) can apply to both the B.A. and M.A.S. degrees.

\*Can be waived for students with an equivalent course, e.g. STAT 250 GQ(3) or STAT 301 GQ(3).

\*\* For all students in the M.A.S. program, the STAT 581(1) course will have a comprehensive written project report required as part of the course, which serves as the culminating experience.

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2011

Blue Sheet Item #: 40-04-097

Review Date: 01/10/2012

UCA Revision #1: 8/18/06

UCA Revision #2: 7/30/07

SC

## Mathematics

*Altoona College (MTSAL)*

*University Park, Eberly College of Science (MTHBS)*

Not all options are available at every campus. Contact the campus you are interested in attending to determine which options are offered.

PROFESSOR YUXI ZHENG, *Chair, Department of Mathematics*

Two degrees are offered in mathematics: the Bachelor of Arts and the Bachelor of Science. Both programs have a common core of mathematics courses; both programs prepare students for graduate work in mathematics. In addition, the Bachelor of Arts degree is oriented toward applications of mathematics in the arts and the humanities. The Bachelor of Science degree has a number of options. These options are oriented toward actuarial science, applied and industrial, computational mathematics, graduate study and systems analysis.

Many of the options are designed for students who want to use mathematics in industry, commerce, or government. In short, the degree requirements have the flexibility to fit many individual interests. The student, with the assistance of a faculty adviser, should select an option by the end of the sophomore year.

In order to be eligible for entrance to the Mathematics major, a student must have: 1) attained at least a 2.00 cumulative grade point average; and 2) completed MATH 140 GQ(4) and MATH 141 GQ(4) and earned a grade of C or better in each of these courses.

For the B.S. degree in Mathematics, a minimum of 120 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(6 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selections)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in GENERAL EDUCATION course selection)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 0-1 credit

**REQUIREMENTS FOR THE MAJOR:** 80-83 credits

(This includes 6 General Education GQ courses)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 30-32 credits

**PRESCRIBED COURSES** (24-25 credits)

MATH 140 GQ(4)[1], MATH 141 GQ(4)[1], STAT 200 GQ(4) (Sem: 1-4)

MATH 220 GQ(2)[1], MATH 230(4)[1], MATH 311W(3-4)[1], MATH 312(3)[1] (Sem: 3-4)

**ADDITIONAL COURSES** (6-7 credits)

CMPSC 101 GQ(3) or CMPSC 121 GQ(3) or CMPSC 201 GQ(3)(Sem: 1-2)

MATH 250(3)[1] or MATH 251(4)[1] (Sem: 3-4)

**REQUIREMENTS FOR THE OPTION:** 50-51 credits

**ACTUARIAL MATHEMATICS OPTION:** (50-51 credits)

**PRESCRIBED COURSES** (30 credits)[1]

I E 425(3), MATH 414(3), MATH 415(3), MATH 416(3), MATH 484(3), R M 302(3), R M 410(3), R M 411(3), R M 412(3), STAT 462(3) (Sem: 5-8)

**ADDITIONAL COURSES** (6 credits)[1]

MATH 451(3) or MATH 486(3) (Sem: 5-8)

Select 3 credits from STAT 463 or 400-level MATH courses except MATH 401(3), MATH 405(3), MATH 406(3), MATH 441(3), MATH 470(3), MATH 471(4) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (14-15 credits)

Select 14-15 credits from department list (Sem: 1-8)

**APPLIED AND INDUSTRIAL MATHEMATICS OPTION:** (50-51 credits)

**PRESCRIBED COURSES** (21 credits)[1]

MATH 403(3), MATH 412(3), MATH 414(3), MATH 415(3), MATH 436(3), MATH 450(3), MATH 455(3) (Sem: 5-8)

**ADDITIONAL COURSES** (12 credits)[1]

Select 12 credits from MATH 411(3), MATH 416(3), MATH 417(3), MATH 419(3), MATH 421(3), MATH 456(3), MATH 461(3), MATH 467(3), MATH 468(3), MATH 479(3), MATH 484(3), MATH 485(3), MATH 486(3) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (17-18 credits)

Select 17-18 credits from department list (Sem: 1-8)

**COMPUTATIONAL MATHEMATICS OPTION:** (50-51 credits)

**PRESCRIBED COURSES** (24 credits)

CMPSC 122(3) (Sem: 3-4)



CMPSC 465(3), MATH 414(3)[1], MATH 415(3)[1], MATH 455(3)[1], MATH 456(3)[1],  
MATH 467(3)[1], MATH 484(3)[1] (Sem: 5-8)

**ADDITIONAL COURSES** (9 credits)[1]

Select 3 credits from MATH 411(3), MATH 412(3), or MATH 417(3) (Sem: 5-8)

Select 6 credits from CMPSC 468(3), MATH 310(3), MATH 468(3), or MATH 485(3) (Sem:  
5-8)

**SUPPORTING COURSES AND RELATED AREAS** (17-18 credits)

Select 17-18 credits from department list (Sem: 1-8)

**GENERAL MATHEMATICS OPTION:** (50-51 credits)

**PRESCRIBED COURSE** (9 credits)[1]

MATH 403(3), MATH 414(3), MATH 415(3) (Sem: 5-8)

**ADDITIONAL COURSES** (12 credits)[1]

MATH 435(3) or MATH 436(3) (Sem: 5-8)

Select 3 credits from MATH 411(3), MATH 412(3), MATH 417(3), MATH 419(3), or MATH  
421(3) (Sem: 5-8)

Select 6 credits of 400-level MATH courses except MATH 401(3), MATH 405(3), MATH  
406(3), MATH 441(3), MATH 470(3), MATH 471(4) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (29-30 credits)

Select an approved sequence of 12 credits in MATH or a related area or an area of  
application (Sem: 1-8)

Select 17-18 credits from department list (Sem: 1-8)

**GRADUATE STUDY OPTION:** (50-51 credits)

**PRESCRIBED COURSES** (24 credits)[1]

MATH 403(3), MATH 404(3), MATH 414(3), MATH 415(3), MATH 421(3), MATH 429(3),  
MATH 435(3), MATH 436(3) (Sem: 5-8)

**ADDITIONAL COURSES** (9 credits)[1]

Select 9 credits of 400-level MATH courses except MATH 401(3), MATH 405(3), MATH  
406(3), MATH 441(3), MATH 470(3), MATH 471(4) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (17-18 credits)

Select 17-18 credits from department list (Sem: 1-8)

**SYSTEMS ANALYSIS OPTION:** (50-51 credits)

**PRESCRIBED COURSES** (12 credits)[1]

MATH 414(3), MATH 415(3), MATH 436(3), MATH 484(3) (Sem: 5-8)

**ADDITIONAL COURSES** (9 credits)[1]

Select 6 credits from MATH 310(3), MATH 451(3), MATH 485(3), or MATH 486(3) (Sem:  
5-8)

Select 3 credits from 400-level MATH courses except MATH 401(3), MATH 405(3), MATH  
406(3), MATH 441(3), MATH 470(3), MATH 471(4) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (29-30 credits)

Select an approved sequence of 12 credits in an area of application; possible areas  
include business, economics, industrial engineering, social sciences (Sem: 1-8)

Select 17-18 credits from department list (Sem: 1-8)

**Integrated B.S. in Mathematics and Master of Applied Statistics (M.A.S.)**

The Integrated Undergraduate-Graduate (IUG) degree with B.S. in Mathematics and Master

of Applied Statistics (M.A.S.) is designed to be completed in five years. This integrated degree will enable a select number of highly qualified and career oriented students to obtain training in statistics focused on developing data analysis skills, and exploration of core areas of applied statistics at the graduate levels in addition to an undergraduate degree in Mathematics. The M.A.S. degree is a professional masters degree that emphasizes applications. The degree prepares students with interests in mathematics, computation, and the quantitative aspects of science for careers in industry and government as statistical analysts. Research divisions in the pharmaceutical industry, quality control, and quality engineering divisions in manufacturing companies, clinical research units, corporate planning and research units, and other data intensive positions require persons with training in mathematics, computation, database management, and statistical analysis, which this program will provide.

### **Application Process**

The number of openings in the integrated B.S. in Mathematics and M.A.S. program is limited. Admission will be based on specific criteria and the recommendation of faculty. Applicants to the integrated program:

Must be enrolled in the Mathematics B.S. program.

Must have completed at least 60 credits of the undergraduate degree program including the two courses: STAT 414 and STAT 415 and the students must apply to the integrated program prior to completing 110 credits.

Must submit a transcript and a statement of purpose.

Must present a departmental approved plan of study in the application process in consultation with the M.A.S. program director.

Must be recommended by the chair of Mathematics Department's undergraduate program committee. Two additional recommendation letters must be sent to the M.A.S. admissions committee.

Must submit the GRE to the M.A.S. admissions committee.

Must apply to the M.A.S. program in Statistics.

For the IUG B.S. in Mathematics and M.A.S. degree, 120 credits are required for the B.S. and 30 credits for the M.A.S. The following twelve graduate level credits (number of credits in parentheses) can apply to both B.S. and M.A.S. degrees, six of these are at the 500 level: STAT 414(3), STAT 415(3), STAT 501(3), STAT 502(3).

Assuming all requirements for the B.S. in Mathematics are completed, students in the program can complete the B.S. degree and not advance to the M.A.S. degree if they desire.

### **Degree Requirements**

IUG Math B.S. students must fulfill the Math B.S. requirement while counting these prescribed Statistics courses (15 credits)

STAT 220(3)\*, STAT 414(3), STAT 415(3), STAT 501(3), STAT 502(3)

**IUG M.A.S. Requirements** (30 credits)

STAT 414(3), STAT 415(3), STAT 501(3), STAT 502(3), STAT 580(2) and STAT 581(1)\*\*

**Electives:** (15 credits)

Select from STAT 464(3), STAT 503(3), STAT 504(3), STAT 505(3), STAT 506(3), STAT

507(3), STAT 508(3), STAT 509(3), STAT 510(3) and the departmental list of additional courses for the M.A.S. program with the approval of the adviser.

For the IUG B.S. in Mathematics and M.A.S. degree, the four courses: STAT 414(3), STAT 415(3), STAT 501(3) and STAT 502(3) can apply to both the B.S. and M.A.S. degrees.

## **Integrated B.S. in Mathematics/M.Ed. in Curriculum and Instruction**

The Mathematics and Curriculum and Instruction with emphasis in Mathematics Education Integrated Undergraduate-Graduate (MATH/CI-MTHED IUG) leading to teacher certification in Mathematics Grades 7-12.

The Mathematics and Curriculum Instruction with Emphasis in Mathematics Education Integrated Undergraduate-Graduate (MATH/CI-MTHED IUG) Degree Program consists of the integration of required courses for a B.S. in Mathematics Systems Analysis Option, a M.Ed. in Curriculum and Instruction with emphasis in Mathematics Education (MTHED), and Pennsylvania certification for Mathematics Grades 7-12.

The MATH/CI-MTHED IUG is a five-year program for highly qualified students seeking to teach mathematics at the secondary level. A hallmark of the program is its strong statistics strand in addition to its mathematics core. In addition to developing advanced understanding of mathematics and statistics, students will learn how to develop and implement lessons and to incorporate technology and research in instruction designed to reach all students.

Students are expected to complete courses required for the certification program integrated with their undergraduate and graduate experiences and will likely complete one summer in residence. Completion of the IUG (along with earning a passing score on the Pennsylvania Department of Education required PRAXIS test) leads to a B.S. in Mathematics, certification in Mathematics Grades 7-12, and a M.Ed. in Curriculum and Instruction.

Admission to the MATH/CI-MTHED IUG Mathematics Grades 7-12 program will be based upon having attained a minimum GPA of 3.5 after completing at least 60 credits of the program, with a grade of C or better in all courses. Admission will be based on a recommendation by the Mathematics Department in consultation with the Mathematics Education faculty in the Department of Curriculum and Instruction.

For the B.S./M.Ed. Degree in integrated Mathematics B.S. and Curriculum and Instruction M.Ed., 129 credits are required for the B.S. degree, 30 credits are required for the M.Ed., and 41 credits are required for field experiences and additional courses required for secondary mathematics certification in Pennsylvania. The following courses can be used in both the B.S. and the M.Ed. degrees: MATH 400-level electives, STAT 501, STAT 502. Students can complete the B.S. in Mathematics and not advance to the M.Ed. Curriculum and Instruction degree if they desire.

## **Master of Education**

CURRICULUM AND INSTRUCTION M.Ed. (31 credits)  
(IUG in Mathematics/Curriculum and Instruction)

Core Areas (9 credits - choose one course from each area): ?Curriculum: C I 550 or equivalent;

Research: STAT 500 or equivalent; ?Learning: EDPSY 421 or equivalent

Emphasis in Mathematics Education (\* denotes required courses)? includes \*C I 590; \*STAT 501; MATH 485, MATH 486, or MATH/CMPSC 451; \*MTHED 511 or equivalent; \*MTHED 520; at least one additional 400-level MATH course other than 401, 405, 406, 441, 470, or 471; at least one additional 400- or 500-level MTHED course.

Note: A Master's paper is required for completion of the M.Ed.

A passing score on the PRAXIS Mathematics Content Exam is required for Mathematics Grades 7-12 certification.

\*Can be waived for students with an equivalent course, e.g. STAT 250 GQ(3) or STAT 301 GQ(3).

\*\* For all students in the M.A.S. program, the STAT 581(1) course will have a comprehensive written project report required as part of the course, which serves as the culminating experience.

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-01-135

Review Date: 08/23/2016

UCA Revision #1: 8/16/06

UCA Revision #2: 7/30/07

SC

## Nursing

*Altoona College*

*Penn State Abington*

*Penn State Erie, The Behrend College*

*Penn State Harrisburg*

*University College: Penn State Fayette, Penn State Mont Alto, Penn State New Kensington,*

*Penn State Schuylkill, Penn State Shenango, Penn State Worthington Scranton*

*University Park, School of Nursing (NURN)*

*World Campus*

PROFESSOR PAULA MILONE-NUZZO, *Dean, College of Nursing*

This major prepares registered nurse students as professional practitioners in areas of health promotion and maintenance, illness care, and rehabilitation. The major in Nursing is accredited by the Commission on Collegiate Nursing Education (CCNE), One DuPont Circle, NW Suite 530, Washington, DC 20036 (202-463-6930). Part-time or full-time study is available at any of the campus sites. The University Park site is a blended program, which includes resident instruction and online nursing courses. The World Campus site is completely online.

Senate legislation 42-97 *Credit by Portfolio Assessment* enables students to receive credit for certain prescribed nursing courses based on their RN licensure.

Students must meet all requirements of the clinical institutions that provide preceptors and clinical experiences. These requirements may include CPR certification, professional liability insurance, health examination, drug testing, criminal background check (State and Federal) and child abuse history clearances. Students also are responsible for their own transportation to and from clinical settings and may need the use of a car.

Graduates of this major may qualify for admission to a graduate nursing program.

For the B.S.N. degree in Nursing, a minimum of 120 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(21 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 3-5 credits

**REQUIREMENTS FOR THE MAJOR:** 91-93 credits[1]

(This includes 21 credits of General Education courses; 3 credits of GHA courses; 9 credits of GN courses; 3 credits of GQ courses; 6 credits of GS courses.)

**PRESCRIBED COURSES** (76 credits)

BIOL 129 GN(4), BIOL 141 GN(3), BIOL 142(1), HDFS 129 GS(3), MICRB 106 GN(3), MICRB 107 GN(1), NUTR 251 GHA(3), PSYCH 100 GS(3) (Sem: 1-4)

NURS 200W(3)[38], NURS 357(3)[38], NURS 390 US(3)[38] (Sem: 3-4)

NURS 225(3)[37], NURS 230(4)[37], NURS 250 US(2)[37], NURS 301(4)[37], NURS 305(3)[37], NURS 306(3)[37],

NURS 310(3)[37], NURS 320(3)[37], NURS 405B(4)[37], NURS 420(4)[37], (Sem: 5-6)

NURS 417 US;IL(4)[38], NURS 465(3)[38], NURS 475(3)[38] (Sem: 7-8)

**ADDITIONAL COURSES** (9-11 credits)

Select 3-4 credits from: CHEM 101 GN(3); or CHEM 110 GN(3) and CHEM 111 GN(1) (Sem: 1-4)

Select 3 credits from: SOC 1 GS(3) or SOC 5 GS(3) (Sem: 1-4)

Select 3-4 credits from: STAT 200 GQ(4) or STAT 250 GQ(3) (Sem: 1-4)

Select 3 credits from: NURS 251(3)[38] or NURS 352(3)[38] (Sem: 3-4)

**SUPPORTING COURSES AND RELATED AREAS** (6 credits)

Select 6 credits from courses on school-approved list in consultation with adviser (3 credits of which must be at the 400 level)

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

[37] Credit by Portfolio Assessment

[38] Due to restricted enrollment, the School of Nursing assigns the semester in which students enroll in these courses and all course prerequisites must be successfully completed.

Last Revised by the Department: Fall Semester 2017

Blue Sheet Item #: 46-02-078

Review Date: 10/3/2017

UCA Revision #1: 8/9/06

HH

Updated contact info for ACEN accrediting agency: 7/31/13

## Nursing

*Penn State Altoona (General Nursing and Second Degree)*

*Penn State Erie, Behrend Campus (General Nursing)*

*Penn State Harrisburg (Second Degree)*

*University Park (General Nursing)*

*University College: Penn State Fayette, Penn State Mont Alto, Penn State Worthington*

*Scranton (General Nursing)*

PROFESSOR JANICE PENROD, *Interim Dean, College of Nursing*

The Bachelor of Science Degree in Nursing prepares students to become professional practitioners in areas of health promotion and maintenance, illness care, and rehabilitation. After earning this degree in Nursing, students are qualified to take the registered nurse examination for licensure by the State Board of Nursing. The Nursing major is accredited by the Commission on Collegiate Nursing Education (CCNE), One DuPont Circle, NW Suite 530, Washington, DC 20036 (202-463-6930); and approved by the Pennsylvania State Board of Nursing.

### **B.S.N. Nursing majors will choose one of the following options:**

**General Nursing Option (NURS GNURS):** This option admits students directly to the major as first year students and at the time of admission only. Nursing students will start and remain at the campus of admission all 4 years. Non-nursing students may not transfer or change major into the 4-year nursing program at University Park, but will be considered through a competitive review process for admission at the 5 other campuses offering the General Nursing program. Clinical experiences occur at clinical facilities within a 50-mile radius of campus; University Park students will spend 1-2 years at Penn State Hershey Medical Center, which requires students to reside at that location.

**Second or Additional Degree Option (NURS SCND):** This option admits students, who have successfully completed a bachelor's degree in another discipline, to the major through a review process. All students must have met all general education and prerequisite course requirements. This option is available at Penn State Altoona and Penn State Harrisburg. Clinical experiences occur at facilities surrounding Altoona and Harrisburg.

**For Both Options:** All transportation and expenses related to clinical are the responsibility of the student. All students must carry professional liability insurance; complete an annual health examination, criminal background and child abuse history clearance; drug testing; maintain CPR certification and adhere to any additional requirements of the clinical facilities. A laptop computer is required.

### **Undergraduate Academic Progression Policy**

The Academic Progression policy delineates the academic standards for pre-licensure students (students without an RN license). Failure of two nursing courses results in dismissal from the Nursing major. Details of the academic progression policy are

available in the student handbook. (<http://www.nursing.psu.edu/undergrad/handbooks/>).

For the B.S.N. degree in Nursing, a minimum of 120 credits is required. The Second or Additional Degree Option requires the completion of 60 credits of general education and prerequisite courses in the first degree program (prior to admission) and 60 credits of nursing courses completed after admission.

Scheduling Recommendation by Semester Standing given like (Sem: 1-2)

**GENERAL EDUCATION:** 45 credits

(21 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in front of *Bulletin*.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

(Second or Additional Degree Option: First-Year Seminar not required since students accepted into this program are required to have earned a bachelor's degree in another discipline)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 4-9 credits

**REQUIREMENTS FOR THE MAJOR:** 87-92 credits [\[1\]](#) [\[2\]](#)

(This includes 21 credits of General Education courses: 3 credits of GHA courses; 9 credits of GN courses; 3 credits of GQ courses; 6 credits of GS courses.)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 30-32 credits

**PRESCRIBED COURSES** (21 credits)

BIOL 129 GN(4), BIOL 141 GN(3), BIOL 142(1), HDFS 129 GS(3), MICRB 106 GN(3), MICRB 107 GN(1), NUTR 251 GHA(3), PSYCH 100 GS(3) (Sem: 1-4)

**ADDITIONAL COURSES** (9-11 credits)

CHEM 101(3); or CHEM 110 GN(3) and CHEM 111 GN(1) (Sem: 1-4)  
SOC 1 GS(3) or SOC 5 GS(3) (Sem: 1-4)  
STAT 200 GQ(4) or STAT 250 GQ(3) (Sem: 1-4)

**REQUIREMENTS FOR THE OPTION:** 57-60 credits

**GENERAL NURSING OPTION:** (57 credits)

**PRESCRIBED COURSES** (54 credits)

NURS 225(3)[\[38\]](#), NURS 230(4)[\[38\]](#), NURS 250 US(2)[\[38\]](#), NURS 251(3)[\[38\]](#) (Sem: 3-4)  
NURS 200W(3)[\[38\]](#), NURS 301(4)[\[38\]](#), NURS 305(3)[\[38\]](#), NURS 306(3)[\[38\]](#), NURS 310(3)[\[38\]](#), NURS 320(3)[\[38\]](#), NURS 350(2)[\[38\]](#) (Sem: 5-6)  
NURS 405A(4)[\[38\]](#), NURS 405B(4)[\[38\]](#), NURS 415 US;IL(4)[\[38\]](#), NURS 420(4)[\[38\]](#), NURS 450A(2)[\[38\]](#), NURS 450B(3)[\[38\]](#) (Sem: 7-8)

**SUPPORTING COURSES AND RELATED AREAS** (3 credits)

Select 3 credits at the 400 level from School-approved list in consultation with adviser (Sem: 7-8)

**SECOND OR ADDITIONAL DEGREE OPTION:** (60 credits)

## **PRESCRIBED COURSES** (60 credits)

NURS 225(3)[38], NURS 230(4)[38], NURS 250 US(2)[38], NURS 251(3)[38] (Sem: 1)  
NURS 200W(3)[38], NURS 301(4)[38], NURS 305(3)[38], NURS 310(3)[38], NURS  
350(2)[38] (Sem: 2)  
NURS 306(3)[38], NURS 320(3)[38], NURS 415 US;IL(4)[38], NURS 420(4)[38] (Sem: 3)  
NURS 405A(4)[38], NURS 405B(4)[38], NURS 450A(2)[38], NURS 450B(3)[38], NURS  
495(6)[38] (Sem: 4)

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

[2] Completed prior to admission for students taking the Second or Additional Degree Option.

[38] Due to restricted enrollment, the School of Nursing assigns the semester in which students enroll in these courses and all course prerequisites must be successfully completed.

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-03-056

Review Date: 11/15/2016

(R&T 2/28/06)

UCA Revision #1: 8/9/06

Update to accrediting agency contact info: 7/31/13

### **Comments**

HH

## **Political Science**

*Altoona College (PLSAL)*

*Capital College (PLSCA)*

*University Park, College of the Liberal Arts (PL SC)*

*World Campus*

PROFESSOR LEE ANN BANASZAK, *Head, University Park*

PROFESSOR MATTHEW EVANS, *Penn State Altoona*

PROFESSOR ALEXANDER SIEDSCHLAG, *Capital College*

The Political Science major offers the student an opportunity to understand not only American federal, state, and local governments, but also the political systems of other nations and the philosophies that underlie them. Courses are offered in American, comparative, and international politics, and in political theory and methodology. Internship opportunities are available.

For the B.A. degree in Political Science, a minimum of 123 credits is required.

Per Senate Policy 83-80.5, the college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. For more information, check the Recommended Academic Plan for your intended program.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*



**GENERAL EDUCATION:** 45 credits  
(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**  
(Included in ELECTIVES or GENERAL EDUCATION course selections)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**  
(Included in ELECTIVES, GENERAL EDUCATION course selections, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**  
(Included in ELECTIVES, GENERAL EDUCATION course selections, or REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 18 credits

**BACHELOR OF ARTS DEGREE REQUIREMENTS:** 24 credits  
(3 of these 24 credits are included in the REQUIREMENTS FOR THE MAJOR, GENERAL EDUCATION, or ELECTIVES and 0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)  
(See description of Bachelor of Arts Degree Requirements in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 36 credits<sup>[1]</sup>

**SUPPORTING COURSES AND RELATED AREAS** (36 credits)  
(In meeting these requirements, students must take at least one course at any level from the four fields offered in the department: Political Theory/Methodology, American Politics/Public Administration, Comparative Politics, and International Relations)  
Select 12 credits from below the 400 level (Sem: 1-6)  
Select 15 credits from the 400 level and above in political science (Sem: 3-8)  
Select 9 credits in political science or in related disciplines from departmental list of approved courses. Substitutions may be made with the written permission of the faculty adviser. (Sem: 3-8)

## **Integrated Undergraduate/Graduate (IUG) Degree Program B.A. in Political Science and Master's in International Affairs (M.I.A.)**

The integrated undergraduate-graduate (IUG) degree program (B.A. in Political Science/M.I.A. in International Affairs) will provide an opportunity for strong students in Political Science to complete a Master's degree with 5 total years of study.

An increasingly globalized economy is likely to escalate the demand for graduate training in international affairs. The career choices for graduates with this training will also expand sharply. The integrated degree program would prepare students for a variety of careers requiring an interdisciplinary background in politics and international affairs. Examples of types of entities hiring in these areas are federal, state, and local governments, international organizations, multinational corporations, international banking and financial institutions, media organizations and journalism, consulting firms, policy research centers, and development assistance programs and foundations. The School of International Affairs (SIA) Master's in International Affairs (M.I.A.) represents a professional degree designed to prepare students to thrive in these increasingly global career paths.

The IUG degree in International Affairs and Political Science is both timely and consistent with the tradition of interdisciplinary studies at other schools of international affairs. It will also strengthen the School of International Affairs' existing collaborations and interactions with the College of the Liberal Arts.

## Admission Requirements

The number of openings in the integrated B.A./M.I.A. program is limited. Admission will be selective based on specific criteria set by the School of International Affairs. Students shall be admitted to an IUG program no earlier than the beginning of the third semester of undergraduate study at Penn State (regardless of transfer or AP credits accumulated prior to enrollment) and no later than the end of the second week of the semester preceding the semester of expected conferral of the undergraduate degree, as specified in the proposed IUG plan of study. Specific requirements:

1. Must be enrolled in the Political Science B.A. program.
2. Must apply to and be accepted into The Graduate School and the M.I.A. program in the School of International Affairs. Students must complete the **Graduate School application**. All applicants will submit GRE scores, two letters of recommendation and a personal statement addressing their reasons for pursuing a graduate degree in international affairs and discussing their plans and goals.
3. Although the program has no fixed minimum grade-point average, an applicant is generally expected to have a minimum overall GPA of 3.5 (on a 4.0 scale) in undergraduate coursework and a minimum GPA of 3.5 in all coursework completed for the major.
4. Must include a plan of study identifying undergraduate credits to be applied to the M.I.A. degree elective requirements.
5. Must provide written endorsement from the head of Political Science.

### **M.I.A. Requirements for the Integrated B.A./M.I.A.**

M.I.A. portion of the integrated B.A./M.I.A. will require the completion of a **minimum of 42 credits at the 400 level or higher**, at least 18 of which are from six core courses consisting of INTAF 801(3), 802(3), 803(3), 804(3), 805(3) and INTAF 590(3). The remaining credits are attained through completion of the approved elective courses.

In addition to the core curriculum and elective courses, M.I.A. degree candidates must complete either: (i) a master's paper; or (ii) a supervised internship placement. If the first option is chosen and the candidate opts to complete a paper, he/she must complete 3 credits of INTAF 594. The master's paper will involve integrating and showing mastery of the subject matter of the student's curricular emphasis, and may also involve original research. If the second option is chosen, the candidate will complete 3 credits of INTAF 595. The student will participate in a supervised internship of sufficient depth and professionalism that will allow the student to experience the integration of his/her curricular studies in an actual professional environment. A reflective paper will be submitted as a part of this credit requirement.

In order to graduate, M.I.A. degree students also will need to demonstrate proficiency in a language other than English. Proficiency will be defined as follows: (i) four semesters of a Penn State language sequence or its equivalent (15 credits with a quality grade of C or better using a 4.0 scale); (ii) native acquisition, as shown by the candidate's personal history and approved by the SIA faculty; or (iii) performance on a proficiency evaluation sufficient to equal four semesters of language learning: for this purpose, either Penn State's proficiency certification process or another pre-approved proficiency assessment may be used. Language study does not provide credits towards the degree.

M.I.A Degree Core Courses (18) INTAF 801(3), INTAF 802(3), INTAF 803(3), INTAF 804(3), INTAF 805(3), INTAF 590(3) Electives (21) Course choices are from a pre-approved list in the SIA, or by SIA faculty approved substitution  Capstone (3) Master's Paper (INTAF 594) or Internship (INTAF 595) Total Degree Credits (42)	Integrated B.A./M.I.A. Degree Core Courses (18) INTAF 801(3), INTAF 802(3), INTAF 803(3), INTAF 804(3), INTAF 805(3), INTAF 590(3) Electives (21) The following 12 credits may be double counted toward the B.A. and the M.I.A.: PLSC 415(3), PLSC 441(3), PLSC 550(3), PLSC 554(3). Capstone (3) Master's Paper (INTAF 594) or Internship (INTAF 595) Total Degree Credits (42)
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### Sample Program of Study

A typical sequence of coursework for a student in the IUG program would appear as follows:

<b>Year One:</b>	Political Science	PLSC 1; PLSC 14 or PLSC 3
<b>Year Two:</b>	Political Science	PLSC 3 or PLSC 20; 400-level course
<b>Year Three:</b>	Political Science	400 level PLSC class; PLSC 7 or PLSC 17; related course
<b>Year Four:</b>	Fall Semester	INTAF 801, INTAF 802 and INTAF 803 are required. Additional 400-level PLSC, related course(s), or HIST/GEOG/Economics course(s) may be taken.
	Spring Semester	INTAF 804, INTAF 805 and INTAF 590 are required. Additional 400-level PLSC, related course(s), or HIST/GEOG/Economics course(s) may also be taken.
<b>Year Five:</b>	24 credits	The following 12 credits may be double counted toward the B.A. and the M.I.A.: PLSC 415(3), PLSC 441(3), PLSC 550(3), PLSC 554(3).

### Tuition Charges, Grant-in-Aid and Assistantships

Students admitted to the School of International Affairs through the IUG with Political Science may be considered to receive financial assistance.

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2013

Blue Sheet Item #: 42-03-079

Review Date: 11/19/2013

LA

Date department head updated by Publications: 4/20/10

## Psychology

*Altoona College (PSCBA)*

*University College (PYACC) - Penn State Beaver, Penn State Brandywine, Penn State Fayette, Penn State Greater Allegheny, Penn State Hazleton, Penn State Lehigh Valley, Penn State Mont Alto, Penn State New Kensington, Penn State Schuylkill, Penn State Worthington Scranton; Penn State York*

The Psychology major will combine the knowledge, skills, and values of psychology with a liberal arts foundation. Students should develop a knowledge base consisting of concepts, theory, empirical findings, and trends within psychology; understand and apply basic research methods in psychology; use critical thinking and the scientific approach to solve problems related to behavior and mental processes; apply psychological principles to personal and social issues; and be able to understand the gender, sexual orientation, race, ethnicity, culture, and class issues in psychological theory, research, and practice. Students should also develop information and computer competence, communication skills, and develop realistic ideas about how to implement their psychology education in occupational pursuits in a variety of settings. The major may lead to either a Bachelor of Arts or a Bachelor of Science degree. The B.A. degree incorporates a broad exposure to the many facets of the field of psychology, in addition to the B.A. requirements. The B.S. degree provides the same exposure to the field of psychology and adds options in Science and Business to prepare students for more specific career directions. Students in both degree programs may also prepare for graduate school; research experience with faculty members is encouraged for such students.

For the B.A. degree in Psychology, a minimum of 124 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(0-4 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 14-18 credits

**BACHELOR OF ARTS DEGREE REQUIREMENTS:** 24 credits

(3 of these 24 credits are included in the REQUIREMENTS FOR THE MAJOR, GENERAL EDUCATION, or ELECTIVES and 0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)

(See description of Bachelor of Arts Degree Requirements in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 41 credits[1]  
(This includes 0-4 credits of General Education GQ courses.)

**PRESCRIBED COURSES** (7 credits)

PSYCH 100 GS(3) (Sem: 1-4)

PSYCH 301(4) (Sem: 3-6)

**ADDITIONAL COURSES** (34 credits)

*(Must include 15 credits at 400-level.)*

Select 4 credits from PSYCH 200 GQ(4) or STAT 200 GQ(4) (Sem: 3-4)

Select 18 credits--a minimum of 3 credits from each of the following six categories

1. Learning and Cognition: PSYCH 256 GS(3), PSYCH 261 GS(3), PSYCH 268(3), PSYCH 426(3), PSYCH 427(3), PSYCH 452(3), PSYCH 456(3), PSYCH 457(3), PSYCH 458(3), PSYCH 459(3), PSYCH 461(3) (Sem: 2-8)
2. Social and Personality Psychology: PSYCH 221 GS(3), PSYCH 231 GS;US(3), PSYCH 232 GS;US;IL(3), PSYCH 238 GS(3), PSYCH 419(3), PSYCH 420(3), PSYCH 421(3), PSYCH 423(3), PSYCH 424(3), PSYCH 432 US(3), PSYCH 438(3), PSYCH 479 US(3) (Sem: 2-8)
3. Biological Bases of Behavior: PSYCH 253 GS(3), PSYCH 260(3), PSYCH 269(3), PSYCH 441(3), PSYCH 460(3), PSYCH 462(3), PSYCH 463(3), PSYCH 464(3), PSYCH 475(3), PSYCH 478(3) (Sem: 2-8)
4. Developmental Psychology: PSYCH 212 GS(3), PSYCH 410(3), PSYCH 412(3), PSYCH 413(3), PSYCH 414(3), PSYCH 415(3), PSYCH 416(3)/HDFS 445(3), PSYCH 474(3) (Sem: 2-8)
5. Applied and Clinical Psychology: PSYCH 243 GS(3), PSYCH 244 GS(3), PSYCH 270(3), PSYCH 281 GS(3), PSYCH 370 US(3), PSYCH 404(3), PSYCH 408(3), PSYCH 443(3), PSYCH 444(3), PSYCH 445(3), PSYCH 470(3), PSYCH 471(3), PSYCH 473(3), PSYCH 476(3), PSYCH 477(3), PSYCH 481(3), PSYCH 482(3), PSYCH 484(3), PSYCH 485(3) (Sem: 2-8)
6. Capstone Experience: PSYCH 439(3), PSYCH 490(3), PSYCH 493(3-6), PSYCH 494(3-18), PSYCH 495(6-15), PSYCH 496(3-18) (Sem: 7-8)

Select 12 credits of additional Psychology courses from any offered for a total of 30 credits of Psychology courses beyond PSYCH 100 and PSYCH 301 (Sem: 2-8)

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Spring Semester 2012

Blue Sheet Item #: 40-05-071

Review Date: 02/21/2012

UCA Revision #1: 9/1/06

AL

## Psychology

*Altoona College (PSCBS)*

*University College (PYSCC) - Penn State Beaver, Penn State Brandywine, Penn State Fayette, Penn State Greater Allegheny, Penn State Hazleton, Penn State Lehigh Valley, Penn State Mont Alto, Penn State New Kensington, Penn State Schuylkill, Penn State Worthington Scranton, Penn State York*

The Psychology major will combine the knowledge, skills, and values of psychology with a liberal arts foundation. Students should develop a knowledge base consisting of concepts, theory, empirical findings, and trends within psychology; understand and apply basic research methods in psychology; use critical thinking and the scientific approach to solve problems related to behavior and mental processes; apply psychological principles to personal and social issues; and be able to understand the gender, sexual orientation, race, ethnicity, culture, and class issues in psychological theory, research, and practice. Students should also develop information and computer competence, communication skills, and develop realistic ideas about how to implement their psychology education in occupational pursuits in a variety of settings. The major may lead to either a Bachelor of Arts or a Bachelor of Science degree. The B.A. degree incorporates a broad exposure to the many facets of the field of psychology, in addition to the B.A. requirements. The B.S. degree provides the same exposure to the field of psychology and adds options in Science and Business to prepare students for more specific career directions. Students in both degree programs may also prepare for graduate school; research experience with faculty members is encouraged for such students.

For the B.S. degree in Psychology, a minimum of 124 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(0-4 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 14-18 credits

**REQUIREMENTS FOR THE MAJOR:** 65 credits **[1]**

(This includes 0-4 credits of General Education GQ courses.)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 41 credits

**PRESCRIBED COURSES** (7 credits)

PSYCH 100 GS(3) (Sem: 1-4)

PSYCH 301(4) (Sem: 3-6)

**ADDITIONAL COURSES** (34 credits)

*(Must include 15 credits at the 400-level.)*

Select 4 credits from PSYCH 200 GQ(4) or STAT 200 GQ(4) (Sem: 3-4)

Select 18 credits--a minimum of 3 credits from each of the following six categories:

1. Learning and Cognition: PSYCH 256 GS(3), PSYCH 261 GS(3), PSYCH 268(3), PSYCH 426(3), PSYCH 427(3), PSYCH 452(3), PSYCH 456(3), PSYCH 457(3), PSYCH 458(3), PSYCH 459(3), PSYCH 461(3) (Sem: 2-8)
2. Social and Personality Psychology: PSYCH 221 GS(3), PSYCH 231 GS;US(3), PSYCH 232 GS;US;IL(3), PSYCH 238 GS(3), PSYCH 419(3), PSYCH 420(3), PSYCH 421(3), PSYCH 423(3), PSYCH 424(3), PSYCH 432 US(3), PSYCH 438(3), PSYCH 479 US(3) (Sem: 2-8)
3. Biological Bases of Behavior: PSYCH 253 GS(3), PSYCH 260(3), PSYCH 269(3), PSYCH

- 441(3), PSYCH 460(3), PSYCH 462(3), PSYCH 463(3). PSYCH 464(3), PSYCH 475(3), PSYCH 478(3) (Sem: 2-8)
4. Developmental Psychology: PSYCH 212 GS(3), PSYCH 410(3), PSYCH 412(3), PSYCH 413(3), PSYCH 414(3), PSYCH 415(3), PSYCH 416(3)/HDFS 445(3), PSYCH 474(3) (Sem: 2-8)
  5. Applied and Clinical Psychology: PSYCH 243 GS(3), PSYCH 244 GS(3), PSYCH 270(3), PSYCH 281 GS(3), PSYCH 370 US(3), PSYCH 404(3), PSYCH 408(3), PSYCH 443(3), PSYCH 444(3), PSYCH 445(3), PSYCH 470(3), PSYCH 471(3), PSYCH 473(3), PSYCH 476(3), PSYCH 477(3), PSYCH 481(3), PSYCH 482(3), PSYCH 484(3), PSYCH 485(3) (Sem: 2-8)
  6. Capstone Experience: PSYCH 439(3), PSYCH 490(3), PSYCH 493(3-6), PSYCH 494(3-18), PSYCH 495(6-15), PSYCH 496(3-18) (Sem: 7-8)

Select 12 credits of additional Psychology courses from any offered for a total of 30 credits of Psychology courses beyond PSYCH 100 and PSYCH 301 (Sem: 2-8)

**REQUIREMENTS FOR THE OPTION: 24 credits**

**SCIENCE OPTION: (24 credits)**

**ADDITIONAL COURSES (15 credits)**

Select 15 credits from: ANTH 21 GN(3); ANTH 22 GN(3); BBH 101 GHA(3) any BIOL course; any CHEM course; any MICRB course; any PHYS course (Sem: 2-8)

**SUPPORTING COURSES (9 credits)**

Select 6 credits in natural sciences/quantification from department list (Sem: 2-8)

Select 3 credits in social and behavioral sciences from department list (Sem: 2-8)

**BUSINESS OPTION: (24 credits)**

**ADDITIONAL COURSES (15 credits)**

Select 15 credits from: Any ACCTG course; BA 100 GS(3); BA 241(2), BA 242(2) or BA 243(4); Any ECON course; any FIN course; any HPA courses; any IB course; any MGMT course; any MKTG course; any SCM except 200 (Sem: 2-8)

**SUPPORTING COURSES (9 credits)**

Select 6 credits in natural sciences/quantification from department list (MATH 22 or MATH 110 recommended) (Sem: 2-8)

Select 3 credits in social and behavioral sciences from department list (Sem: 2-8)

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Spring Semester 2012

Blue Sheet Item #: 40-05-072

Review Date: 02/21/2012

UCA Revision #1: 8/31/06

AL

## **Rail Transportation Engineering**

*Altoona College (RTEAL)*

The Bachelor of Science in Rail Transportation Engineering (RTEAL) will provide students

with the necessary skills for careers in the rail freight and passenger transportation industries. The RTEAL degree provides a solid background in engineering design, but also focuses on the maintenance and management skills required by the rail industry. The program provides a breadth of knowledge in the major areas associated with the design, operation, and maintenance of rail systems, including the engineering of rail and track structures, basic rail operating practices and safety, wheel/track dynamics, construction and maintenance of railroad infrastructure, and basic railroad communications and signals. Laboratories are used throughout the RTEAL curriculum to provide students with experiences in the field with actual rail equipment, and extensive team-based laboratory activities are used to develop the leadership qualities that are essential of rail professionals. In order to prepare students for the occupational challenges associated with careers in the rail industry, careful and candid discussions of career possibilities and working environments typical of railway professionals are provided throughout the RTEAL program.

### **Entrance to Major Requirements:**

All students applying for entrance to the RTEAL major must have at least a 2.0 cumulative GPA by the end of the semester prior to applying for entrance to the major and have completed, with a minimum grade of C: CHEM 110 GN(3), MATH 140 GQ(4), MATH 141 GQ(4), and PHYS 211 GN(4). These courses must be completed by the end of the semester during which the admission to major process is carried out.

For the B.S. degree in Rail Transportation Engineering, a minimum of 130 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem:1-2)*

### **GENERAL EDUCATION:** 45 credits

(27 of these credits are included in the REQUIREMENTS FOR THE MAJOR) (See description of General Education in this bulletin.)

### **UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

### **WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

### **REQUIREMENTS FOR THE MAJOR:** 112 credits

(This includes 27 credits of General Education courses: 9 credits of GWS, 6 credits of GQ, 9 credits of GN, 3 credits of GS.)

### **PRESCRIBED COURSES** (100 credits)

CHEM 110 GN(3)[1], ECON 102 GS(3), EDSGN 100(3), MATH 140 GQ(4)[1], MATH 141 GQ(4)[1], PHYS 211 GN(4)[1](Sem: 1-2)

CE 310(3), EMCH 211(3)[1], EMCH 212(3)[1], EMCH 213(3)[1], ENGL 202C GWS(3), GEOSC 1(3), MATH 220(2), MATH 251(4), PHYS 212 GN(4), STAT 401(3) (Sem: 3-4)

CE 335(3)[1], CE 336(4)[1], CE 360(3), RTE 301(3), RTE 302(3)[1], RTE 303(3)[1], RTE 305(3)[1], RTE 402(3) (Sem: 5-6)

ACCTG 211(4), CE 332(3)[1], CE 333(3)[1], CE 340(3)[1], RTE 403(3), RTE 404(3), RTE 406(4) (Sem: 7-8)

### **ADDITIONAL COURSES** (12 credits)

ENGL 15 GWS(3) or ENGL 30 GWS(3) (Sem: 1-2)

CAS 100A GWS(3) or CAS 100B GWS(3) (Sem: 1-2)

Select 3 credits from CMPSC 201(3) or CMPSC 202(3) (Sem: 3-4)

Select 3 credits of technical electives from departmental list in consultation with



advisor(Sem: 7-8)

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2010

Blue Sheet Item #: 39-03-002

Review Date: 11/9/2010

## Science

*Abington College (SCIAB)*

*Altoona College (SCIAL)*

*Berks College (SCIBL)*

*Capital College (SCICA)*

*University College (SCICC): Penn State Worthington-Scranton, Penn State York*

*University Park, Eberly College of Science (SC BS)*

*Integrated Five-Year Science/Business M.B.A. Program (SCBUS)*

Not all options are available at every campus. Contact the campus you are interested in attending to determine which options are offered.

PROFESSOR RONALD MARKLE, *in charge*

The Science major is an interdisciplinary degree that aims to provide a broad, general education in science. The bachelor of science (B.S.) curriculum is designed specifically for students who have education goals relating to scientific theory and practice and who require a high degree of flexibility to obtain their educational objectives. After completing foundation courses in calculus, chemistry, physics, and the life sciences, students will select additional science courses from designated areas. A large number of supporting credits permit students to readily include significant breadth or specialization into their undergraduate curriculum. Some examples include minors in business, computer and information science, education, kinesiology, or other fields. The degree allows students throughout the Commonwealth to become familiar with both the theory and the practice of science. It can help prepare students for various careers in pharmaceutical, biotechnical, chemical, medical, and agricultural industries. The degree can also be tailored to meet the specific requirements of professional programs such as medical, dental, or pharmacy schools. The General Science option of the B.S. Science degree allows for the most flexibility. Achievement in a more specialized set of goals can be met by selecting one of the other B.S. options offered: the Biological Sciences and Health Professions option, the Legal Studies, Government Service, Public Policy option, the Life Sciences option, the Mathematical Sciences option, or the Physical Sciences option. Not all of these options are available at all locations, and there are minor distinctions of the core curriculum at some locations, so see the Science program director at your College for further details.

In order to be eligible for entrance to the Science major, a student at any location must have: 1) attained at least a 2.00 cumulative grade-point average; 2) completed MATH 140 GQ(4) with a grade of C or better; 3) completed at least two of the following courses, BIOL 110 GN(4); CHEM 110 GN(3); PHYS 211 GN(4) or PHYS 250 GN(4), with a grade of C or

better.

For the B.S. degree in Science, a minimum of 124 credits is required, with at least 15 credits at the 400 level.

**TWO-YEAR PREPROFESSIONAL PREPARATION:** The first two years of the Science major (62 credits) can meet the pre professional needs of those interested in admission to some schools of pharmacy, physical therapy, optometry, nursing, and physician assistant training. Successful students can then transfer after two years of undergraduate study to the professional school to which they are admitted. Note, however, that no Penn State degree can be awarded after only two years (62 credits) of study in the Science major. Also, note that the abbreviated two-year curriculum alone does not prepare students for admission to professional schools of general medicine, veterinary medicine, or dental medicine. Consult with your college's health sciences professional adviser for additional information.

**ACCELERATED SCIENCE B.S./M.B.A. PROGRAM:** Students admitted to this special cooperative program between the Eberly College of Science and The Smeal College of Business will be able to combine a Bachelor of Science degree in the Science major, with a Master of Business Administration degree. Highly motivated students, who enter the University with a sufficient number and proper distribution of AP credits, will have the opportunity to complete the requirements for both programs within five years. The B.S. degree in the Science major General Science option, will be conferred upon satisfactory completion of:

1. A minimum of 112 acceptable undergraduate credits, which must include:
  1. (24 credits) The University's General Education requirements in the areas of Writing and Speaking (9), Health and Physical Activity (3), Arts (6), Humanities (6). The University's General Education requirements in the areas of Quantification, Natural Sciences, and Social and Behavioral Sciences will be satisfied by course work listed under headings "c" and "f".)
  2. The University's First-Year Seminar, United States Cultures, International Cultures, and Writing Across the Curriculum requirements. (Note: These requirements may be double counted in order to satisfy other requirements in the program.)
  3. (52-57 credits) BIOL 110 GN(4), CHEM 110 GN(3), CHEM 111(1), CHEM 112 GN(3), CHEM 113 GN(1), CMPSC 203 GQ(4), MATH 140 GQ(4), MATH 141 GQ(4); 3-4 credits from STAT 200 GQ(4), or STAT 250 GQ(3) or STAT 301(3) or STAT 401(3); 8-12 credits from PHYS 211 GN(4), PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2), or PHYS 250 GN(4), PHYS 251 GN(4); 3 additional life science credits from B M B 211(3), B M B 251(3), or MICRB 201(3); and 14 additional credits of course work from the Eberly College of Science, with at least nine credits at the 400 level.
  4. (0-8 credits) Demonstration of second semester proficiency in a single foreign language.
  5. (3-9 credits) SC 295(1-3), SC 395(1-3), SC 495(1-3) (Note: Students must complete three Eberly College of Science Cooperative Education experiences, including at least one experience which is a full semester in length.)
  6. (10 credits) ECON 102 GS(3), ECON 104 GS(3), ACCTG 211(4)
  7. (4-23 credits) Supporting courses and related areas selected from the program list.
2. The first semester of course work in The Smeal College of Business M.B.A. program (i.e., a minimum of 12 graduate credits).

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits  
(15 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in GENERAL EDUCATION course selection or SUPPORTING COURSES AND RELATED AREAS)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in GENERAL EDUCATION course selection or SUPPORTING COURSES AND RELATED AREAS)

**WRITING ACROSS THE CURRICULUM:**

(Included in GENERAL EDUCATION course selection or REQUIREMENTS FOR THE MAJOR or SUPPORTING COURSES AND RELATED AREAS)

**REQUIREMENTS FOR THE MAJOR: 94 credits**

(This includes 15 credits of General Education courses: 9 credits of GN courses; 6 credits of GQ courses.)

**COMMON REQUIREMENTS FOR MAJOR (All options)**

**PRESCRIBED COURSES (20 credits)**

CHEM 110 GN(3)[1], CHEM 111 GN(1), CHEM 112 GN(3), CHEM 113 GN(1), MATH 140 GQ(4)[1], MATH 141 GQ(4) (Sem: 1-2)  
BIOL 110 GN(4)[1] (Sem: 1-4)

**REQUIREMENTS FOR THE OPTIONS: 74 credits**

**GENERAL SCIENCE OPTION: (74 credits)**

**ADDITIONAL COURSES (15-20 credits)**

Select 4 credits from BIOL 129 GN(4), BIOL 220W(4), BIOL 230W(4), BIOL 240W(4) or BIOL 141 GN(3) and BIOL 142(1) (Sem: 3-4)

Select 3-4 credits from STAT 200 GQ(4), or STAT 250 GQ(3) or STAT 301(3) or STAT 401(3) (Sem: 3-4)

Select 8-12 credits from PHYS 211 GN(4)[1], PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 GN(4)[1], PHYS 251 GN(4) (Sem: 3-6)

**SUPPORTING COURSES AND RELATED AREAS (54-59 credits)**

(A maximum of 12 credits of Independent Study [296, 496] may be applied toward credits for graduation.)

Select 21-26 credits from program list (Students may apply 6 credits of ROTC.) (Sem: 1-8)

Select 3 credits from earth and mineral sciences (Sem: 3-8)

Select 18 credits in life, mathematical, or physical sciences, with at least 9 credits[1] at the 400 level[60] (Sem: 3-8)

Select 3 credits in Global, Social and Personal Awareness from department approved course list in consultation with adviser (Sem: 3-8)

Select 3 credits in Teamwork and Interpersonal Communication from department approved course list in consultation with adviser (Sem: 3-8)

Select 6 credits of 400-level courses (Sem: 5-8)

**BIOLOGICAL SCIENCES AND HEALTH PROFESSIONS OPTION: (74 credits)**

**PRESCRIBED COURSES (3 credits)**

H P A 101(3) (Sem: 3-6)

**ADDITIONAL COURSES (24-31 credits)**

Select 4 credits from BIOL 129 GN(4), BIOL 220W(4), BIOL 230W(4), BIOL 240W(4) or BIOL 141 GN(3) and BIOL 142(1) (Sem: 3-4)

Select 3-4 credits from STAT 200 GQ(4), or STAT 250 GQ(3) or STAT 301(3) or STAT

401(3) (Sem: 3-4)

Select 6-8 credits from CHEM 210(3), CHEM 212(3), CHEM 213(2) or CHEM 202(3), CHEM 203(3) (Sem: 3-6)

Select 3 credits from B M B 211(3), B M B 251(3), MICRB 201(3), BIOL 222(3), or BIOL 322(3) (Sem: 3-6)

Select 8-12 credits from PHYS 211 GN(4)[1], PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 GN(4)[1], PHYS 251 GN(4) (Sem: 3-6)

### **SUPPORTING COURSES AND RELATED AREAS (40-47 credits)**

(A maximum of 12 credits of Independent Study [296, 496] may be applied toward credits for graduation.)

Select 15 credits from program list for Healthcare/ Medicine/Ethical Competencies; 6 credits must be at the 400-level (Sem: 3-8) Select from department approved course list in consultation with adviser.

Select 10-17 credits from program list (Students may apply 6 credits of ROTC. (Sem: 1-8)

Select 3 credits in Global, Social and Personal Awareness from department approved course list in consultation with adviser (Sem: 3-8)

Select 3 credits in Teamwork and Interpersonal Communication from department approved course list in consultation with adviser (Sem: 3-8)

Select 9 credits[1] of 400-level B M B, BIOL, BIOTC, or MICRB courses (Sem: 5-8)

### **LEGAL STUDIES, GOVERNMENT SERVICE, PUBLIC POLICY OPTION (74 credits)**

#### **ADDITIONAL COURSES (15-20 credits)**

Select 4 credits from BIOL 129 GN(4), BIOL 220W(4), BIOL 230W(4), BIOL 240W(4) or BIOL 141 GN(3) and BIOL 142(1) (Sem: 3-4)

Select 3-4 credits from STAT 200 GQ(4), or STAT 250 GQ(3) or STAT 301(3) or STAT 401(3) (Sem: 3-4)

Select 8-12 credits from PHYS 211 GN(4)[1], PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 GN(4)[1], PHYS 251 GN(4) (Sem: 3-6)

#### **SUPPORTING COURSES AND RELATED AREAS (54-59 credits)**

Select 12-17 credits from program list (Students may apply 6 credits of ROTC. (Sem: 1-8)

Select 18 credits in life, mathematical, or physical sciences, with at least 9 credits[1] at the 400 level[60] (Sem: 3-8)

Select 18 credits from program list for Legal Studies, Government Service, Public Policy; 6 credits must be at the 400-level (Sem: 3-8) Select from department approved course list in consultation with adviser.

Select 3 credits in Global, Social and Personal Awareness from department approved course list in consultation with adviser (Sem: 3-8)

Select 3 credits in Teamwork and Interpersonal Communication from department approved course list in consultation with adviser (Sem: 3-8)

### **LIFE SCIENCE OPTION: (74 credits)**

#### **ADDITIONAL COURSES (24-30 credits)**

Select 4 credits from BIOL 220W GN(4), BIOL 230W GN(4), BIOL 240W GN(4) (Sem: 3-4)

Select 3 credits from CMPSC 101 GQ(3), MATH 250(3), or STAT 250 GQ(3) (Sem: 3-4)

Select 3 credits from B M B 211(3), B M B 251(3), or MICRB 201(3) (Sem: 3-4)

CHEM 202(3), CHEM 203(3); or CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-6)

PHYS 211 GN(4)[1], PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 GN(4)[1], PHYS 251 GN(4) (Sem: 3-6)

#### **SUPPORTING COURSES AND RELATED AREAS (44-50 credits)**

(A maximum of 12 credits of Independent Study [296, 496] may be applied toward credits for graduation.)

Select 23-29 credits from program list (Students may apply 6 credits of ROTC.) (Sem: 1-8)

Select 3 credits in Global Social and Personal Awareness  
Select 3 credits in Teamwork and Interpersonal Communication  
Select 6 credits of 400-level courses (Sem: 5-8)  
Select 9 credits[1] of 400-level B M B, BIOL, BIOTC, or MICRB courses (Sem: 5-8)

**MATHEMATICAL SCIENCE OPTION:** (74 credits)

**PRESCRIBED COURSES** (5-6 credits)

CMPSC 122(3), MATH 220 GQ(2-3) (Sem: 3-6)

**ADDITIONAL COURSES** (24-29 credits)

Select 3 credits from B M B 211(3), B M B 251(3), or MICRB 201(3) (Sem: 3-4)  
CMPSC 121 GQ(3), CMPSC 201 GQ(3), or CMPSC 202 GQ(3) (Sem: 3-6)  
MATH 230(4) or MATH 251(4) (Sem: 3-6)  
CMPSC 360(3) or MATH 311W(3-4); STAT 301 GQ(3) or STAT 318(3) (Sem: 3-8)  
PHYS 211 GN(4)[1], PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250  
GN(4)[1], PHYS 251 GN(4) (Sem: 3-8)

**SUPPORTING COURSES AND RELATED AREAS** (39-45 credits)

(A maximum of 12 credits of Independent Study [296, 496] may be applied toward credits for graduation.)

Select 18-24 credits from program list (Students may apply 6 credits of ROTC.) (Sem: 1-8)  
Select 9 credits[1] of 400-level CMPSC, CSE, MATH, or STAT courses (Sem: 5-8)  
Select 6 credits of 400-level courses (Sem: 5-8)  
Select 3 credits in Global, Social & Personal Awareness  
Select 3 credits in Teamwork & Interpersonal Communication

**PHYSICAL SCIENCE OPTION:** (74 credits)

**PRESCRIBED COURSES** (15 credits)

ASTRO 291 GN(3), PHYS 211 GN(4)[1], PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2)  
(Sem: 3-6)

**ADDITIONAL COURSES** (16-18 credits)

Select 3 credits from B M B 211(3), B M B 251(3), or MICRB 201(3) (Sem: 3-4)  
CHEM 202(3), CHEM 203(3); or CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-6)  
MATH 230(4) or MATH 251(4) (Sem: 3-6)  
Select 3 credits from ASTRO 292 GN(3); E MCH 211(3); M E 300(3); or PHYS 237(3) (Sem:  
3-8)

**SUPPORTING COURSES AND RELATED AREAS** (41-43 credits)

(A maximum of 12 credits of Independent Study [296, 496] may be applied toward credits for graduation.)

Select 20-22 credits from program list (Students may apply 6 credits of ROTC.) (Sem: 1-8)

Select 6 credits of 400-level courses (Sem: 5-8)  
Select 9 credits[1] of 400-level ASTRO, CHEM, or PHYS courses (Sem: 5-8)  
Select 3 credits in Global, Social & Personal Awareness  
Select 3 credits in Teamwork & Interpersonal Communication

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

**[60]** Physical sciences include ASTRO, CHEM, PHYS; mathematical sciences include CMPSC, MATH, STAT; life sciences include BIOL, BIOTC, B M B, MICRB.

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-01-001

Review Date: 08/23/2016

UCA Revision #1: 9/1/06

UCA Revision #2: 7/730/07

SC

## Security and Risk Analysis

*Penn State Altoona (SRAAL)*

*Penn State Berks (SRABL)*

*Penn State Harrisburg (SRACA)*

*University Park, College of Information Sciences and Technology (SRA)*

*World Campus (SRAWC\_BS)*

*Mary Beth Rosson, Associate Dean for Graduate and Undergraduate Studies, College of IST*

Not all options are available at every campus. Contact the campus you are interested in attending to determine which options are offered.

The Bachelor of Science in Security and Risk Analysis (SRA) in the College of Information Sciences and Technology is intended to familiarize students with the general frameworks and multidisciplinary theories that define the area of security and related risk analyses. Courses in the major will engage students in the challenges and problems associated with assuring information confidentiality and integrity (e.g., social, economic, technology-related, and policy issues), as well as the strengths and weaknesses of various methods for assessing and mitigating associated risk.

The major provides a grounding in the analysis and modeling efforts used in information search, visualization, and creative problem solving. This knowledge is supplemented through an examination of the legal, ethical, and regulatory issues related to security that includes analyzing privacy laws, internal control and regulatory policies, as well as basic investigative processes and principles. Such understanding is applied to venues that include transnational terrorism, cyber crimes, financial fraud, risk mitigation, and security and crisis management. It also includes overviews of the information technology that plays a critical role in identifying, preventing and responding to security-related events.

Advisory groups from within and outside the University involved in the design of the major have agreed that graduates who can understand the cognitive, social, economic, and policy issues involved in security and risk management as well as the basics of the information technology and analytics that are included in the security/risk arena will be very successful. These observations drove the design and objectives of the SRA major.

SRA majors will choose one of the following options:

**INTELLIGENCE ANALYSIS AND MODELING OPTION.** This option focuses on developing a more thorough knowledge of the strategic and tactical levels of intelligence collection, analysis, and decision-making. This includes examining the foundations of decision analysis, economic theory, statistics, data mining, and knowledge management, as well as the security-specific contexts in which such knowledge is applied.

**INFORMATION AND CYBER SECURITY OPTION.** This option includes a set of courses that provides an understanding of the theories, skills, and technologies associated with network security, cyber threat defense, information warfare, and critical infrastructure protection across multiple venues.

**Entrance Requirements:** To be eligible for entrance to the Security and Risk Analysis

(SRA) major, students must:

1. have completed the following entrance-to-major requirements with grades of C or better in each: IST 140(3) (or equivalent CMPSC 101 GQ(3) or CMPSC 121 GQ(3)), IST 210(3), SRA 111(3); and SRA 211(3).
2. have achieved a minimum cumulative grade point average of 2.00 prior to and through the end of the semester during which the entrance-to-major procedure is carried out.

The Integrated Undergraduate Graduate (IUG) program is available for strong undergraduate students who wish to pursue a bachelor's and master's degree in a shorter period of time than would be necessary if the degrees were pursued separately. Security and Risk Analysis undergraduates may apply for admission to the SRABS/ISTMS IUG program as early as the end of their sophomore year but no later than the end of their junior year after completing a minimum of 60 credits, if they meet the following admission requirements:

1. Must be enrolled in the SRABS undergraduate degree program.
2. Must have completed 60 credits of an SRABS undergraduate degree program.
3. Must apply to the IUG program by the end of their junior year.
4. Must apply to and be accepted without reservation into the Graduate School and M.S. program in IST. Students must complete the **Graduate School application**.
5. Must have an overall GPA of 3.5 (on a 4.0 scale) in undergraduate coursework and a minimum GPA of 3.5 in all coursework completed for the major.
6. Must present an approved plan of study. The plan should cover the entire time period of the integrated program, and it should be reviewed periodically with an adviser.
7. Must present two letters of recommendation from faculty members. (Note: For Schreyer Honors College students, these can be the same two letters required by the Schreyer Honors College.)
8. Must meet with both the Director of Undergraduate Academic Affairs and the Graduate Program Coordinator to declare interest and receive information about the IUG program.

For Schreyer Honors College students, students admitted to the IUG program may double-count a maximum of 12 credits toward their graduate and undergraduate degrees in Information Sciences and Technology. Thesis or scholarly paper credits may not double-count.

For the B.S. degree in Security and Risk Analysis, a minimum of 120 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 45 credits

(21 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in front of the *Bulletin*.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 4 credits

**REQUIREMENTS FOR THE MAJOR:** 92 credits

(This includes 21 credits of General Education courses: 6 credits of GQ courses; 6 credits of GS courses; 3 credits of GWS courses, 3 credits of GH, and 3 credits of GN courses)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS): 71 credits**

**PRESCRIBED COURSES (35 credits)**

CMPSC 101 GQ(3)[1], SRA 111 GS(3)[1] (Sem: 1-2)

IST 110 GS(3)[1] (Sem: 1-3)

IST 210(3)[1] (Sem: 1-4)

SRA 211(3)[1], SRA 221(3)[1], SRA 231(3)[1] (Sem: 2-4)

STAT 200 GQ(4) (Sem: 3-6)

IST 495(1)[1] (Sem: 3-8)

IST 432(3)[1], SRA 311(3)[1], IST 440(3)[1] (Sem: 7-8)

**ADDITIONAL COURSES (15 credits)**

AGBM 101 GS(3) or ECON 102 GS(3) (Sem: 1-4)

PLSC 1 GS(3), PLSC 14 GS;IL(3), or GEOG 40 GS;IL(3) (Sem: 1-4)

PSYCH 100 GS(3) or SOC 5 GS(3) (Sem: 1-6)

ENGL 202C GWS(3) or ENGL 202D GWS(3) (Sem: 5-8)

SRA 365(3)[1]; STAT 460(3)[1] (Sem: 5-6)

**SUPPORTING COURSES AND RELATED AREAS (21 credits)**

Attainment of third-level proficiency in a single foreign language (12 credits). Proficiency must be demonstrated by either examination or course work. See the admission section of the general information in this *Bulletin* for the placement policy for Penn State foreign language courses. (Sem: 1-4)

Select 3 credits of INatural Sciences (GN) in consultation with adviser (Sem: 1-6)

Select 6 credits of international courses from College-approved list or other courses approved by adviser. (Sem: 5-8)

**REQUIREMENTS FOR THE OPTION: 21 credits**

**INTELLIGENCE ANALYSIS AND MODELING OPTION: (21 credits)**

**PRESCRIBED COURSES (12 credits)[1]**

ECON 302 GS(3), SRA 421(3) (Sem: 3-6)

SRA 433(3), SRA 468(3) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS (9 credits)**

Select 9 credits from College-approved list (at least 3 credits must be at the 400-level) (Sem: 5-8)

**INFORMATION AND CYBER SECURITY OPTION: (21 credits)**

**PRESCRIBED COURSES (12 credits)[1]**

IST 220(3) (Sem: 1-6)

IST 451(3), IST 454(3), IST 456(3) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS (9 credits)**

Select 9 credits from College-approved list (at least 3 credits must be at the 400-level) (Sem: 5-8)

## **Integrated B.S. in Security and Risk Analysis / M.S. in Information Sciences and Technology**

The College of Information Sciences and Technology offers an integrated B.S./M.S. (IUG) program designed to allow academically superior students in the Security and Risk Analysis major to obtain both the Bachelor's in Security and Risk Analysis and the M.S.



degree in Information Sciences and Technology in a shorter period of time than would be necessary if the degrees were pursued separately. The first two to three years of undergraduate coursework follow the same undergraduate curriculum that other students follow in the Security and Risk Analysis major. Interested students may apply for admission to the IUG program as early as the end of their sophomore year but no later than the end of their junior year after completing a minimum of 60 credits. If admitted to the IUG, the final years of study include two graduate courses, Foundations of Theories and Methods of Information Sciences and Technology Research (IST 504) in the fall and Foundations of Research Design in Information Sciences and Technology (IST 505) in the spring, plus six credits of research methods courses, twelve credits of graduate specialty courses, and six credits of graduate thesis (IST 600) or scholarly paper (IST 594).

(Note: For Schreyer Honors College students, those who complete the graduate thesis for the Master's requirement may use the graduate thesis, itself, to fulfill the undergraduate honors thesis requirement, as well. Honors students who opt for the Master's scholarly paper must also complete an undergraduate honors thesis.)

The integrated B.S. in Security and Risk Analysis / M.S. in Information Sciences and Technology (IUG) degree meets the needs of the most academically talented students in the Security and Risk Analysis undergraduate major. A proportion of these successful students wish to pursue graduate studies sometime after graduation. Offering the IUG benefits these students by offering an accelerated path to a graduate degree. Additionally, the IUG program can provide these students with a more cohesive program of study with opportunities to engage in more comprehensive research leading to both the bachelor's and master's degree.

For the B.S. in Security and Risk Analysis / M.S. in Information Sciences and Technology IUG program, a minimum of 120 credits is required for the bachelor's degree and 30 credits for the M.S. degree. Students admitted to the IUG program may double-count a maximum of 12 credits to their graduate and undergraduate degrees. The required 6 credits of IST 504 and IST 505 will apply to both the graduate program and the undergraduate program. Students may choose an additional 6 credits to double-count for both the undergraduate and graduate degrees from the following: SRA 433, SRA 468, SRA 471, IST 451, IST 452, IST 454, IST 456. Graduate thesis or scholarly paper credits may not double-count.

The objectives of the Integrated Undergraduate Graduate Program include:

1. To offer highly qualified students the opportunity to earn two degrees in less time than it would take to do two sequential degrees. In particular, IUG students may count up to 12 credits towards both their B.S. and M.S. degree requirements.
2. To permit coherent planning of studies through the graduate degree, with advising informed by not only the requirements of the baccalaureate program, but also the longer-range goals of the graduate degree.
3. To introduce undergraduate students to the rigors of both graduate study and graduate faculty.
4. To make the resources of the Graduate School available to IUG students.
5. To allow students with IUG status to benefit from their association with graduate students whose level of work and whose intensity of interest and commitment parallel their own.

## **Admission Requirements**

To initiate the application process, students must submit an *Integrated Undergraduate-Graduate (IUG) Degree in Security and Risk Analysis Form*, a transcript, and two letters of recommendation (both from faculty members) to the IST Graduate Programs Office. The Director of Undergraduate Academic Affairs, in consultation with the Graduate Programs Coordinator, will help undergraduate candidates determine a proposed sequence of courses that will prepare them for acceptance into the Integrated Undergraduate-Graduate (IUG) degree program. Acceptance into the IST IUG program will be determined by the Graduate Recruitment Committee.

Security and Risk Analysis undergraduate majors may apply for admission no earlier than February 15th of their sophomore year and no later than February 15th of their junior year after completing a minimum of 60 credits, if they meet the following admission requirements:

1. Must be enrolled in the SRA (BS) undergraduate degree program.
2. Must have completed 60 credits of an SRABS undergraduate degree program.
3. Must apply to the IUG program by the end of their junior year.
4. Must apply to and be accepted without reservation into the Graduate School and M.S. program in IST. Students must complete the **Graduate School application**.
5. Must have an overall GPA of 3.5 (on a 4.0 scale) in undergraduate coursework and a minimum GPA of 3.5 in all coursework completed for the major.
6. Must present an approved plan of study. The plan should cover the entire time period of the integrated program, and it should be reviewed periodically with an adviser.
7. Must present two letters of recommendation from faculty members. (Note: For Schreyer Honors College students, these can be the same two letters required by the Schreyer Honors College.)
8. Must meet with both the Director of Undergraduate Academic Affairs and the Graduate Program Coordinator to declare interest and receive information about the IUG program.

For Schreyer Honors College students, students must also follow guidelines and procedures for applying for IUG in the Schreyer Honors College:

**<http://www.shc.psu.edu/students/iug/program/>**

In addition, applicants must apply to and be admitted to the Graduate School of the Pennsylvania State University at the time of their application to the IUG degree program.

These admission standards are high, as it is thought the program will only be appropriate for students with high levels of academic skills. The program area does have discretion in admitting Security and Risk Analysis majors into the integrated program, and extenuating circumstances can always be considered in terms of possible admission. Individuals who are unable to be admitted into the integrated program of study can apply for regular admission to the graduate program when they complete their undergraduate program of study.

#### Sample Sequence of Graduate Coursework in Addition to Undergraduate Courses

Year	Fall	Spring	MS Credits
Year 1 (Senior)	IST 504: Foundations (3)	IST 505: Research Design (3)	

Undergraduate Year)	Methods course (3)**	Methods course (3)**	30*
Year 2 (Super Senior Undergraduate Year)	IST 600 or IST 594	IST 600 or IST 594	
	Thesis Research (3)	Thesis Research (3)	
	Grad Specialty Course (3)***	Grad Specialty Course (3)***	
	Grad Specialty Course (3)***	Grad Specialty Course (3)***	

\* Students admitted to the IUG program may double-count a maximum of 12 credits toward their graduate and undergraduate degrees in Information Sciences and Technology. In their senior year, IUG students will take 6 credits of specified graduate work, courses IST 504 and IST 505, and 6 credits of methods courses. These 6 credits of IST 504 and IST 505 will apply to both the graduate program and the undergraduate IST/SRA support option requirement. In their super senior year, students may choose an additional 6 credits to double-count for both the undergraduate and graduate degrees. These courses must be at the 400-level or above. Students may choose any 400-level undergraduate Option course (SRA 433, SRA 468, SRA 471, IST 451, IST 452, IST 454, IST 456) that they are using to fulfill an undergraduate option requirement and apply the credits to both the undergraduate option requirement and the graduate specialty course requirement. Credits associated with the thesis or culminating scholarly paper, i.e., IST 600 and IST 594, may not be double-counted. However, for Schreyer Honors College students, the Master's thesis deliverable, itself, may double-count for the undergraduate thesis deliverable requirement.

\*\* Choose graduate level methods course after consultation in advance with the student's faculty adviser.

\*\*\* Choose any 400 or 500 level course that contributes to the student's chosen area of specialty with a maximum of six credits at the 400 level.

The total resulting credits will be a minimum of 150 credits, with 120 credits completed for the undergraduate SRA degree. Twelve graduate credits will be completed in the senior year, and the remaining 18 graduate credits will be completed in the super senior year.

If for any reason a student admitted to the B.S./M.S. program is unable to complete the requirement for the Master of Science degree program in Information Sciences and Technology, the student will be permitted to receive the SRA bachelor's degree assuming all degree requirements have been satisfactorily completed.

Student performance will be monitored on an on-going basis by the student's adviser and Graduate Programs. Students admitted to the integrated program must maintain a minimum cumulative GPA of a 3.3 overall and a minimum 3.0 GPA in all courses used toward the M.S. degree in order to maintain good academic standing and meet graduation requirements. (See information on Grade-Point Average in the Graduate Bulletin: <http://bulletins.psu.edu/graduate/degreerequirements/masters#>) For SHC students in the IUG program, students must maintain a minimum cumulative GPA of 3.4 overall and a minimum 3.0 GPA in all courses used toward the M.S. degree in order to maintain good academic standing and meet graduation requirements. Successful completion of a Schreyer Scholar's Master's thesis will be accepted as completion of the honors thesis requirement.

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Fall Semester 2017

Blue Sheet Item #: 46-01-088

Review Date: 8/22/2017

UCA Revision #1: 8/14/06

UCA Revision #2: 7/30/07

### Comments

IS

## Visual Art Studies

*Altoona College (VAST)*

The Bachelor of Arts degree in Visual Art Studies offers students the opportunity to explore studio work in Art within the context of a broader liberal arts education. Students can learn fundamental techniques and concepts common to the Visual Arts. Emphasis is also put on creative problem solving through advanced investigations of artistic themes and issues. Course work includes requirements (classes) related to the portfolio preparation necessary for employment in creative fields or for education at the graduate level.

Entry into the Visual Art Studies major requires a third semester standing (27.1 credits), the completion of 6 credits in ART with a C or better, an entrance interview, and a 2.00 or higher cumulative grade-point average. The entrance interview will be based on a review of the student's work in the 6 credits of ART, and any other work the student wishes to include.

For the B.A. degree in Visual Art Studies, a minimum of 121 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem:1-2)*

**GENERAL EDUCATION:** 45 credits

(6 of these credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 7-13 credits

**BACHELOR OF ARTS DEGREE REQUIREMENTS:** 24 credits

(0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)

(See description of Bachelor of Arts Degree Requirements in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 45 credits[1]

(This includes 6 credits of General Education courses: 6 credits of GA courses.)

**PRESCRIBED COURSES** (42 credits)

ARTH 111 GA;IL(3), ARTH 112 GA;IL(3) (Sem: 1-2)  
ART 165 GA(3), ART 166 GA(3), ART 168 GA(3), ART 265(3), ART 266(3), ART 269(3)  
(Sem: 1-4)  
ART 468(3) (Sem: 4-8)  
ART 365(3), ART 366(3), ART 465(3), ART 466(3), ART 469(3) (Sem: 5-8)

**ADDITIONAL COURSES** (3 credits)

Select 3 credits of 400-level ART H courses (Sem: 7-8)

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Summer Session 2007

Blue Sheet Item #: 35-03-101

Review Date: 1/31/08

AA

## Associate Degrees

# Business Administration

*Abington College (2BAAB)*

*Altoona College (2BAAL)*

*Berks College (2BABL)*

*Capital College (2BACA)*

*University College (2BACC): Penn State Brandywine, Penn State DuBois, Penn State Fayette, Penn State Hazleton, Penn State Mont Alto, Penn State New Kensington, Penn State Lehigh Valley, Penn State Schuylkill, Penn State Shenango, Penn State Wilkes-Barre, Penn State Worthington Scranton, Penn State York*

*University College (2BACC): Via World Campus*

Not all options are available at every campus. Contact the campus you are interested in attending to determine which options are offered.

The associate degree program in Business Administration provides an introductory foundation to core aspects of the business environment that prepares graduates for future baccalaureate study in business or for direct entry into the work place. The primary objective of this major is to provide a business-oriented program with sufficient communicative and mathematical skills, socially relevant course work, and specific business specialties to develop a well-rounded and knowledgeable graduate.

Students should work closely with academic advisers to schedule course work required to transition to baccalaureate business programs.

**ENTRANCE REQUIREMENTS:** Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

For the Associate in Science degree in Business Administration, a minimum of 60 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 21 credits

(9 credits of these 21 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 48-50 credits

(This includes 3 credits of GQ General Education courses and 6 credits of GWS General Education courses.)

**PRESCRIBED COURSES** (13 credits)

CAS 100 GWS(3) (Sem: 2-4)

ACCTG 211(4), ENGL 202D GWS(3)[1], MIS 204(3) (Sem: 2-4)

**ADDITIONAL COURSES** (23-24 credits)

ENGL 15 GWS(3)[1] or ENGL 30 GWS(3)[1] (Sem: 1-2)

MATH 21 GQ(3), MATH 22 GQ(3), or MATH 110 GQ(4) (Sem: 1-2)

BA 243(4) or BA 241(2) and BA 242(2) (Sem: 1-4)

ECON 102 GS(3) or ECON 104 GS(3) (Sem: 1-4)

MGMT 301(3)[1] or MGMT 301W(3)[1] (Sem: 3-4)

MKTG 301(3)[1] or MKTG 301W(3)[1] (Sem: 3-4)

SCM 200 GQ(4) or STAT 200 GQ(4) (Sem: 3-4)

**SUPPORTING COURSES AND RELATED AREAS** (12-13)

Select 12-13 credits from: BA 100(3); BA 250(3); BA 364(3); CAS 250(3) or CAS 252(3); CAS 352(3); MATH 22 GQ(3); MATH 110 GQ(4); ACCTG 300 to 399(3); ECON 100 to ECON 399(3); ENTR 100 to 399(3); FIN 100 to 399(3); HPA 100 to 399(3); IB 303 IL(3); LER 100 to 399(3); MGMT 100 to 399(3); MKTG 100 to 399(3); MIS 100 to 399(3); RM 100 to 399(3); or SCM 200 to 399(3) (Sem: 1-4)

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Spring Semester 2017

Blue Sheet Item #: 45-04-001

Review Date: 1/10/17

UCA Revision #1: 8/9/06

UCA Revision #2: 7/26/07

UC

## **Criminal Justice**

*Altoona College (2 CJ)*

PROFESSOR Peter M. Hopsicker, Division Head, Division of Education, Human Development, and Social Sciences

Students receiving an associate degree in criminal justice should understand each of the three main components of the criminal justice system and their interrelationships. This program includes study in law enforcement, courts, and corrections individually and as components of a system, plus work in theories of crime causation, and crime control policy. Students should expect reading, writing, and critical thinking skills to be rigorously applied and developed throughout the degree program. The Associate in Science degree in Criminal Justice prepares students for entry-level positions in criminal justice or for study at the baccalaureate level.

**ENTRANCE REQUIREMENTS:** Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

For the Associate in Science in Criminal Justice, a minimum of 64 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 21 credits  
(12 of these credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**ELECTIVES:** 26 credits

**REQUIREMENTS FOR THE MAJOR:** 29 credits<sup>[1]</sup>  
(This includes 12 credits of General Education courses: 3 credits of GH courses; 3 credits of GQ courses; 6 credits of GS courses.)

**PRESCRIBED COURSES** (26 credits)  
CRIMJ 100(3), PHIL 103 GH(3), SOC 012 GS(3), SOC 119 GS;US(4) (Sem: 1-4)  
CRIMJ 210(3), CRIMJ 220(3), CRIMJ 230(3), STAT 200 GQ(4) (Sem: 3-4)

**ADDITIONAL COURSES** (3 credits)<sup>[1]</sup>  
CRIMJ 250(3); SOC 207(3)

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Spring Semester 2017

Blue Sheet Item #: 45-04-013A

Review Date: 1/10/17

UCA Revision #1: 8/3/06  
UCA Revision #2: 7/27/07

AL

## Human Development and Family Studies

*Altoona College (2FSAL)*  
*University College (2FSCC): Penn State Brandywine, Penn State DuBois, Penn State Fayette, Penn State Mont Alto, Penn State Schuylkill, Penn State Shenango, Penn State Worthington Scranton, Penn State York*  
*University Park, College of Health and Human Development (2EHFS): offered via World Campus*

Not all options are available at every campus. Contact the campus you are interested in attending to determine which options are offered.

*For more information, contact 119 Health and Human Development Building, University Park campus.*

This major integrates practical and academic experiences to provide the student with entry-level professional competence in the human service field. The objective of the major is to offer a general education background, a knowledge base in life span and family development, and a core of professional skills that may be applied in program planning and service delivery activities. The major is offered part-time, in the evening,

and through independent learning.

**ADULT DEVELOPMENT AND AGING SERVICES OPTION:** This option is designed to prepare students for a wide variety of service roles in mental health facilities, nursing homes and other institutions for the aged, area agencies on aging, public welfare and family service agencies, women's resource centers, human relations programs, employee assistance programs and customer services and consumer relations programs in business and industry. An improved field experience in any of a wide variety of settings that serve adults, the aged, and their families, is required for this option.

**CHILDREN, YOUTH, AND FAMILY SERVICES OPTION:** This option is designed to prepare students for service roles in preschools; day care centers; hospitals; institutional and community programs for emotionally disturbed, abused, or neglected children and adolescents; as well as a variety of public welfare and family service agencies. An approved field experience in a children, youth, or family services setting is required for this option.

**EARLY CHILDHOOD CARE AND EDUCATION OPTION:** This option is designed to increase professional capabilities in child care training in regard to issues of quality, affordability, and accessibility of programming. The primary foci are on language, literacy, and science reasoning. In the course work, there is a blending of theory and practice that requires experience in a group setting with young children. Courses concentrate on infants and toddlers as well as older preschoolers. Each course has a strong parent/family communications component and stresses observation techniques appropriate for assessing and evaluating the development of young children.

**ENTRANCE REQUIREMENTS:** Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

For the Associate in Science degree in Human Development and Family Studies, a minimum of 60 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 21 credits  
(15 of these 21 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**ELECTIVES:** 0-3 credits

**REQUIREMENTS FOR THE MAJOR:** 51-55 credits  
(This includes 15 credits of General Education courses; 6 credits of GWS courses; 3 credits of GS courses; 3 credits of GN courses; and 3 credits of GQ courses.)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 30-31 credits

**PRESCRIBED COURSES** (21 credits)  
CAS 100 GWS(3), ENGL 015 GWS(3), HDFS 129 GS(3)[1], HDFS 301(3)[1], PSYCH 100 GS(3)  
(Sem: 1-2)  
HDFS 395(6) (Sem: 3-4)

**ADDITIONAL COURSES** (9-10 credits)  
EDPSY 101 GQ(3)[1], STAT 100 GQ(3)[1], or STAT 200 GQ(4)[1] (Sem: 1-2)  
HDFS 315 US(3)[1] or SOC 030 GS(3) (Sem: 3-4)  
BIOL 141 GN(3), BIOL 155 GN(3), or BISC 004 GN(3) (Sem: 3-4)

**REQUIREMENTS FOR THE OPTION:** 21-24 credits

**ADULT DEVELOPMENT AND AGING SERVICES OPTION:** (21 credits)



**PRESCRIBED COURSES** (6 credits)

HDFS 249 GS(3)[1], HDFS 311(3)[1] (Sem: 1-4)

**SUPPORTING COURSES AND RELATED AREAS** (15 credits)

Select 15 credits in consultation with the adviser from University-wide offerings that enhance competence in the option (Sem: 1-4)

**CHILDREN, YOUTH, AND FAMILY SERVICES OPTION:** (24 credits)**PRESCRIBED COURSES** (9 credits)

HDFS 229 GS(3)[1], HDFS 239 GS(3)[1], HDFS 311(3)[1] (Sem: 1-4)

**SUPPORTING COURSES AND RELATED AREAS** (15 credits)

Select 15 credits in consultation with the adviser from University-wide offerings that enhance competence in the option (Sem: 1-4)

**EARLY CHILDHOOD CARE AND EDUCATION OPTION:** (24 credits)**PRESCRIBED COURSES** (24 credits)

HDFS 229 GS(3)[1], HDFS 230(3)[1], HDFS 231(3)[1], HDFS 311(3)[1] (Sem: 1-2)

HDFS 232(3)[1], HDFS 233(3)[1], HDFS 234(3)[1], HDFS 330(3)[1] (Sem: 3-4)

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Spring Semester 2017

Blue Sheet Item #: 45-04-013B

Review Date: 1/10/17

UCA Revision #1: 8/8/06

HH

## Letters, Arts, and Sciences

*Abington College (2LAAB)*

*Altoona College (2LAAL)*

*Penn State Erie, The Behrend College (2LABC)*

*Berks College (2LABL)*

*Penn State Harrisburg (2LACA)*

*University College (2LACC): Penn State Brandywine, Penn State DuBois, Penn State Fayette,*

*Penn State Hazleton, Penn State Mont Alto, Penn State New Kensington, Penn State*

*Schuylkill, Penn State Shenango Valley, Penn State Wilkes-Barre, Penn State*

*Worthington-Scranton*

*University Park, College of the Liberal Arts (2 LAS)*

*World Campus*

The objectives of the Letters, Arts, and Sciences major are to broaden the student's understanding, interests, and skills; to help the student become a more responsible, productive member of the family and community; and to offer a degree program with sufficient electives to permit some specialization according to the student's interests or career plans. Letters, Arts, and Sciences is a complete two-year degree major. However, graduates who later seek admission to baccalaureate degree majors may apply baccalaureate credits toward the new degree.

In addition to a wide variety of baccalaureate majors offered at University Park campus, graduates of the Letters, Arts, and Sciences major may qualify for admission to the baccalaureate degree majors in Behavioral Sciences, Elementary Education, Humanities, or Public Policy offered at Penn State Harrisburg. Or they may qualify for any of a large number of baccalaureate degree majors offered by Penn State Erie, The Behrend College, in business, the liberal arts, and sciences.

**ENTRANCE REQUIREMENTS:** Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

For the Associate in Arts degree in Letters, Arts, and Sciences, a minimum of 60 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 21 credits  
(6 of these 21 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**ELECTIVES:** 15 credits

**REQUIREMENTS FOR THE MAJOR:** 30 credits#[\[1\]](#)  
(This includes 6 credits of General Education GWS courses.)

**PRESCRIBED COURSES** (6 credits)  
ENGL 015 GWS(3) (Sem: 1-2)  
CAS 100 GWS(3) (Sem: 3-4)

**ADDITIONAL COURSES** (3 credits)  
ENGL 202A GWS(3), ENGL 202B GWS(3), ENGL 202C GWS(3), or ENGL 202D GWS(3) (Sem: 3-4)

**SUPPORTING COURSES AND RELATED AREAS** (21 credits)  
Select 3 credits in any course designated as arts\* (Sem: 1-4)  
Select 3 credits in any course designated as humanities\* (Sem: 1-4)  
Select 3 credits in any course designated as social and behavioral sciences\* (Sem: 1-4)  
Select 3 credits in any course designated as physical, biological, or earth sciences\* (Sem: 1-4)  
Select 9 credits in any one of the following areas\*: arts, humanities, social and behavioral sciences, natural sciences and quantification, and foreign language skills. (If foreign language courses are chosen, it is recommended that these courses be in one foreign language sequence.) (Sem: 1-4)

**[1]**A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

#The required credits of General Education and Requirements for the Major must be baccalaureate-level courses. For students intending to seek admission to a baccalaureate program upon graduation, it is recommended that most, if not all, of the courses be at the baccalaureate level. For those students who will seek a bachelor of arts degree upon graduation from Letters, Arts, and Sciences, it is strongly recommended that a foreign language be taken since admission to a bachelor of arts program in the College of the Liberal Arts requires one college-level course, or the equivalent, in a foreign language.

\*Courses that will satisfy the arts, humanities, social and behavioral sciences, natural sciences, and quantification requirements are defined on the Letters, Arts, and Sciences checklist, which may be obtained from the College of the Liberal Arts associate dean for undergraduate studies at the University Park campus or from any Letters, Arts, and

Sciences representative at other locations.

Last Revised by the Department: Spring Session 2017

Blue Sheet Item #: 45-04-071B

Review Date: 1/10/17

Reviewed by Publications: 06/23/06

LA

## **Mechanical Engineering Technology**

*Penn State Erie, The Behrend College*

*University College: Penn State DuBois, Penn State York (2 MET)*

*PROFESSOR SVEN BILÉN, Head, School of Engineering Design, Technology, and Professional Programs, Penn State University Park*

*PROFESSOR IVAN ESPARRAGOZA, Director of Engineering Technology and Commonwealth Engineering, Penn State University Park*

*PROFESSOR FREDRICK NITTERRIGHT, Program Coordinator, Penn State Erie, The Behrend College*

*PROFESSOR DOUGLAS MILLER, Program Coordinator, Penn State DuBois*

*PROFESSOR MARSHALL COYLE, Program Coordinator, Penn State York*

This major helps graduates prepare for technical positions in manufacturing, machine and tool design, computer drafting and design, computer integrated manufacturing, materials selection and processes, technical sales, and other related industries in mechanical applications. The primary objective of the program is to provide a broad foundation in mechanical systems and applications; computer systems in drafting (CAD), manufacturing (CAM), and automation and robotics (CIM); production and product design; mechanics, dynamics, and strength of materials. Graduates of the Associate Degree in Mechanical Engineering Technology program will:

Practice in the areas of applied design, manufacturing, testing, evaluation, technical sales, or 2D and 3D modeling.

Communicate effectively and work collaboratively in multi-disciplinary teams.

Learn and adapt to changes in a professional work environment.

Demonstrate a high standard of professional ethics and be cognizant of social concerns as they relate to the practice of engineering technology.

Graduates of this major may qualify for admission to the baccalaureate degree majors in Mechanical Engineering Technology and Structural Design and Construction Engineering Technology programs at Penn State Harrisburg; the Mechanical Engineering Technology and the Plastics Engineering Technology programs at Penn State Erie, The Behrend College; or the baccalaureate degree major in Electro-Mechanical Engineering Technology offered at Penn State Altoona, Penn State Berks, Penn State New Kensington, or Penn State York. Two tracks are available to streamline the transition to these baccalaureate degree programs. A general track is provided for students who do not plan to continue their engineering technology education at the baccalaureate level.

**ENTRANCE REQUIREMENTS:** Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

For the Associate in Engineering Technology degree in Mechanical Engineering Technology, a minimum of 65 credits is required. This program is accredited by the Engineering Technology Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 21 credits

(12-15 of these 21 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in front of *Bulletin*.)

**REQUIREMENTS FOR THE MAJOR:** 54-64 credits

(This includes 12-15 credits of General Education courses: 3 credits of GN courses; 3 credits of GQ courses; 6 credits of GWS courses, 0-3 credits of GH or GS.) A First-Year Seminar is required for students at Penn State Behrend.

**PRESCRIBED COURSES** (23 credits)

CAS 100 GWS(3), IET 101(3)[1], MCHT 111(3)[1] (Sem: 1-2)

IET 215(2), IET 216(2), MCHT 213(3), MCHT 214(1)[2], MET 206(3)[1], MET 210(3), (Sem: 3-4)

**ADDITIONAL COURSES** (31-41 credits)

ENGL 015 GWS(3); ENGL 030 GWS(3) (Sem: 1-2)

MATH 022 GQ(3), MATH 026 GQ(3); MATH 040 GQ(5)[2][3]; MATH 081 GQ(3)[2][3], MATH 082 GQ(3)[2][3](Sem: 1-2)

PHYS 150 GN(3); PHYS 211 GN(4); PHYS 250 GN(4) (Sem: 1-2)

PHYS 151 GN(3); PHYS 212 GN(4); PHYS 251 GN(4) (Sem: 1-2)

Select at least 19-24 credits from one of the following three tracks: a. General Track, b. Baccalaureate Electro-Mechanical Engineering Technology (EMET) Track, or c. Baccalaureate Mechanical Engineering Technology (METBD or M E T) Track.

**a) General Track**

EDSGN 100(3), EET 105(3), MET 107(3) (Sem: 1-2)

EDSGN 110(2); EGT 114(2) (Sem: 1-2)

STS 200 GS(3); STS 233 GH(3); STS 245 GS;IL(3) (Sem: 3-4)

Select at least 6 credits from the approved supporting course list for Track a.

**b) Baccalaureate Electro-Mechanical Engineering Technology (EMET) Track**

CMPET 117(3)[2], CMPET 120(1)[2], EDSGN 100(3), EET 105(3) (Sem: 1-2)

EDSGN 110(2); EGT 114(2) (Sem: 1-2)

EET 114(4)[2], EET 118(1)[2] (Sem: 3-4)

MATH 083 GQ(4)[2][3] or MATH 140 GQ(4)[2][3] (Sem: 3-4)

STS 200 GS(3); STS 233/PHIL 233 GH(3); STS 245 GS;IL(3) (Sem: 3-4)

**c) Baccalaureate Mechanical Engineering Technology (METBD or M E T) Track**

EGT 120(3), EGT 121(3), MET 107(3) (Sem: 1-2)

EET 100(3) (Sem: 3-4)

Select 1 credit of First-Year Seminar (Sem: 1-2)

Select 6 credits from the approved supporting course list for Track c (Sem: 3-4)

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

[2] Students pursuing the baccalaureate track must take MATH 022 and MATH 026

[3] Students who choose to take MATH 081 and MATH 082 must select MATH 083. Students who choose to take MATH 022 and MATH 026 must select MATH 140.

Last Revised by the Department: Spring Semester 2017

Blue Sheet Item #: 45-04-048C

Review Date: 1/10/2017

UCA Revision #1: 8/3/06

UCA Revision #2: 7/30/07

### **Comments**

EN

## **Science**

*Altoona College (2SCAL)*

The Science major is designed primarily to provide for the basic educational needs of students who want to pursue professional programs in various scientific or medical fields. The program provides a fundamental group of science courses of value to those who seek positions in government or industry where such knowledge is necessary or desirable. The program offers sufficient flexibility to meet diverse academic and career goals.

Graduates of the of the program may qualify for admission to the baccalaureate degrees in science. Students planning on continuing in baccalaureate degrees are encouraged to work closely with their advisers.

**ENTRANCE REQUIREMENTS:** Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

For the Associate in Science degree in Science, a minimum of 67 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**GENERAL EDUCATION:** 21 credits

(15 of these 21 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 61 credits

(This includes 15 credits of General Education courses: 3 credits of GN courses; 3 credits of GQ courses; 3 credits of GWS courses; 3 credits of GH courses; 3 credits of GQ, GWS, GH, or GN courses.)

**PRESCRIBED COURSES** (14 credits)

BIOL 110 GN(4)[1], CAS 100 GWS(3)[1], CHEM 110 GN(3)[1], CHEM 111 GN(1)[1], ENGL 015 GWS(3)[1] (Sem: 1-4)

**ADDITIONAL COURSES** (22-27 credits)

(Note: PHYS 250 and PHYS 251 and MATH 140 are recommended for students planning to continue in baccalaureate programs of science.)

Select 4-6 credits from MATH 022 GQ(3), MATH 026 GQ(3), or MATH 040 GQ(5), or MATH 140 GQ(4) (Sem: 1-2)

Select 3-4 credits from STAT 200 GQ(4), STAT 220(3), STAT 250 GQ(3) (Sem: 1-4)

Select 3 credits from PHIL 002 GH(3), PHIL 103 GH(3), PHIL 103 GH(3), PHIL 110 GH(3), PHIL 118 GH(3), PHIL 221 GH(3) (Sem: 1-4)

Select 3 credits from CMPSC 100(3), MIS 103(3), CMPSC 101 GQ(3) (Sem: 1-4)

Select 6-8 credits from PHYS 150 GN(3) and PHYS 151 GN(3) or PHYS 250 GN(4) and PHYS 251 GN(4) (Sem: 2-4)

Select 3 credits from CHEM 112 GN(3), CHEM 202(3) (Sem: 2-4)

### **SUPPORTING COURSES AND RELATED AREAS** (20-25 credits)

Select 20-25 credits from approved departmental list of BIOLOGICAL/MATH/PHYSICAL SCIENCES (Sem: 1-4)

[1] A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.

Last Revised by the Department: Spring Semester 2017

Blue Sheet Item #: 45-04-013C

Review Date: 1/10/17

UCA Revision #1: 8/14/06

UC/AL/CL

## **Minors**

### **Biology Minor (BIOL)**

*Contacts: Altoona College, Edward Levri, [epi1@psu.edu](mailto:epi1@psu.edu); Eberly College of Science, Barbara DeHart, [bzd2@psu.edu](mailto:bzd2@psu.edu); Penn State Abington, Eric Ingersoll, [epi1@psu.edu](mailto:epi1@psu.edu); Penn State Berks, Maureen Dunbar, [med18@psu.edu](mailto:med18@psu.edu); Penn State York, Dr. Anne Vardo-Zalik, [amv12@psu.edu](mailto:amv12@psu.edu)*

This minor is designed for students in non-Life Science majors, who desire to obtain an in-depth and well-rounded knowledge of Biology -- the science of life and living organisms. This minor is not intended for "Life Science" oriented majors, including Biological Anthropology, Premedicine, and Science, Life Science option. After taking an introductory survey course which exposes students to the basics of Biology, including the chemistry of life, cell structure, genetics, mechanisms of evolution and evolutionary history of biological diversity, plant and animal form and function, and ecology, students select additional courses based on their biological emphasis to account for a total of 18-20 credits. In conjunction with the student's major, the minor prepares students for entry to graduate school or professional school programs, as well as for technical or research careers with governmental agencies or industry. Majors complemented by this minor would include but not be limited to other life and physical sciences, engineering, and business.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18-20 credits

**PRESCRIBED COURSES** (4 credits)

BIOL 110 GN(4) (Sem. 5-6)

**ADDITIONAL COURSES** (7-8 credits)

Select 7-8 credits from BIOL 129 GN(4), BIOL 141 GN(3), BIOL 142(1), BIOL 222(3), BIOL

220W GN(4), BIOL 230W GN(4), BIOL 240W GN(4), BIOL 322(3) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (6-9 credits)

Select 6-9 credits from 400-level Biology courses (BIOL 400, BIOL 496, and SC 495 credits may not be used to fulfill this requirement.) (Sem: 5-8)

Last Revised by the Department: Fall Semester 2007

Blue Sheet Item #: 35-06-521

Review Date: 4/10/07

## Chemistry Minor

*Penn State Berks, Ivan Shibley, [ias1@psu.edu](mailto:ias1@psu.edu)  
University Park, Eberly College of Science (CHEM)*

*Contact: Altoona College - Richard Bell, [rcb155@psu.edu](mailto:rcb155@psu.edu); Penn State Erie, The Behrend College - Grace Galinato, [mig11@psu.edu](mailto:mig11@psu.edu); Eberly College of Science - Mark Maroncelli, [mxm11@psu.edu](mailto:mxm11@psu.edu)*

The minor in Chemistry complements degrees in other areas of physical and biological science and introduces students to fundamental principles of chemistry through lecture and laboratory course work.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 26-28 credits

**PRESCRIBED COURSES:** (16 credits)

CHEM 110 GN(3), CHEM 111 GN(1), CHEM 112 GN(3), CHEM 113 GN(1), CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 1-4)

**ADDITIONAL COURSES:** (10-12 credits)

Select 4 credits from CHEM 221(4) or 6 credits from CHEM 450(3) or CHEM 466(3) and CHEM 452(3)(Sem: 3-8)

Select 6 credits from 400-level CHEM not used above and excluding CHEM 494(1-10), CHEM 494H(1-10), CHEM 495(1-18), and CHEM 496(1-18) (Sem: 5-8)

Last Revised by the Department: Fall Semester 2014

Blue Sheet Item #: 43-04-102

Review Date: 01/13/2015

UCA Revision #1: 9/20/06

SC

## Communications Minor

*Altoona College (COMAL)*

The Communications minor provides students an academic program of media studies that introduces them to approaches used to understand the mass media. These include aesthetic, cultural, humanistic, social-behavioral, and legal approaches. Students in the minor will have an opportunity to examine the theory and principles of communications systems and processes as well as learn in the advanced courses the research methods used for their systematic analysis. The minor emphasizes the liberal arts core of the Communications program and will equip students with well-developed language and analytical skills.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES** (6 credits)

COMM 100 GS(3), COMM 150 GA(3) (Sem: 1-2)

**ADDITIONAL COURSES** (12 credits)

(At least 6 credits must be at the 400 level.)

COMM 180 GS(3), COMM 205 US(3), COMM 250 GA(3), COMM 261 GH(3), COMM 320(3), COMM 370(3) (Sem: 3-4)

COMM 401(3), COMM 403(3), COMM 408(3), COMM 409(3), COMM 411(3), COMM 413W(3) (Sem: 5-8)

Last Revised by the Department: Fall Semester 2002

Blue Sheet Item #: 30-07-022

Review Date: 1/14/03

AL

## **Creative Writing Minor**

*Contact: Charlotte Holmes, [cxh18@psu.edu](mailto:cxh18@psu.edu)*

Abington College, Penn State Altoona, Behrend College, Berks College, Capital College, University Park - Liberal Arts, University College (CWRIT\_UMNR)

This minor offers students not majoring in English the opportunity to explore different forms of creative writing--fiction, poetry, and nonfiction--or to focus primarily on one of them. Students receive instruction and practice the art and craft of writing in small, workshop courses.

A grade of C or better is required for all courses in the minor.

Some courses may require prerequisites.

For a Minor in Creative Writing, a minimum of 18 credits is required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18 credits

**ADDITIONAL COURSES** (18 credits)



Select 6 credits of introductory-level courses (200-level): ENGL 212(3); ENGL 213(3); ENGL 214(3); ENGL 215(3); ENGL 281(3) (Sem: 1-4)

Select 12 credits of advanced -level writing workshop courses (400-level): ENGL 304 WAC(3-12); ENGL 412(3); ENGL 413(3); ENGL 414(3); ENGL 415(3); ENGL 422(3); ENGL 425(3); ENGL 401(3); ENGL 424(3); ENGL 429(3); ENGL 435(3); ENGL 436(3); ENGL 437(3); ENGL 439(3); ENGL 486 IL(3); ENGL 495(3-12) (Sem: 5-8)

Blue Sheet Item #: 45-05-041

Review Date: 2/21/17

## Criminal Justice Minor

*Abington College (CJ) contact: Patricia Collins, pxc36@psu.edu*

*Altoona College (CJ)*

*Penn State Beaver contact: Mari Pierce, mbp16@psu.edu*

*Penn State Berks - Jennifer Murphy*

*Penn State Fayette (CJCC)*

*Penn State Harrisburg contact: Shaun Gabbidon, slg13@psu.edu*

*Penn State New Kensington contact: Jeffrey Roth, jjr30@psu.edu*

*Penn State World Campus*

The Criminal Justice minor provides an overview of the criminal justice system and a thorough grounding in criminological theory. Students receive an in-depth look at the three main system components: policing, courts, and corrections, as well as the opportunity to delve into two or more specialized topics relating to criminal justice. The minor is designed not only for students who have a professional interest in criminal justice, but also for those who want to be informed members of the voting citizenry. A functional understanding of crime and the criminal justice system is useful in many careers, including law, social work, education, and journalism.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES:** (12 credits)

CRIMJ 100(3) (Sem:1-4)

CRIMJ 210(3), CRIMJ 220(3), CRIMJ 230(3) (Sem: 3-6)

**SUPPORTING COURSES AND RELATED AREAS:** (6 credits)

Select 6 credits of 400-level CRIMJ courses, excluding CRIMJ 495(1-18) (Sem: 7-8)

Last Revised by the Department: Fall Semester 2001

UCA Revision #2: 7/27/07

AL

## Dance Studies Minor

## *Altoona College (DNCAL)*

The Dance Studies Minor is designed for students interested in furthering their study and exploration of the many areas of dance. Students will explore the creative process of dance as it relates directly to technique and performance. Students have the opportunity to perform with the Ivyside Dance Ensemble, perform in faculty choreography, choreograph for productions, and attend national festivals. The Dance Studies Minor allows students to further enhance their dance study and prepares them for graduate study and a variety of career options. Twenty-one credits are required for completion of the minor with a minimum of 9 credits at the 400 level.

A grade of C or better is required in all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 21 credits

**PRESCRIBED COURSES** (18 credits)

DANCE 270 GHA(3)

DANCE 365(3), DANCE 366(3) (Sem: 3-6)

DANCE 466(3), DANCE 482(3), DANCE 484 US;IL(3) (Sem: 5-8)

**ADDITIONAL COURSES** (3 credits)

DANCE 230 GA(1.5), DANCE 240 GA(1.5), DANCE 250 GA(1.5), DANCE 261 GA(1.5) (Sem: 1-4)

(All Dance Studies minor students are required to demonstrate proficiency at beginning level technique courses before placement in the intermediate or advanced courses.)

Last Revised by the Department: Fall Semester 2011

Blue Sheet Item #: 40-04-007

Review Date: 01/10/2012

AL

## **English Minor (ENGL)**

*University Park, College of the Liberal Arts (ENGL)*

*Contact: Abington College, Ellen Knodt, [eak1@psu.edu](mailto:eak1@psu.edu); Altoona College, Erin Murphy, [ecm14@psu.edu](mailto:ecm14@psu.edu); Capital College, Jennifer Hirt, [jlh73@psu.edu](mailto:jlh73@psu.edu); Penn State Brandywine, Adam Sorkin, [ajs2@psu.edu](mailto:ajs2@psu.edu); Penn State Fayette, Danielle Mitchell, [dmm52@psu.edu](mailto:dmm52@psu.edu); Penn State Greater Allegheny, James Jaap, [jaj15@psu.edu](mailto:jaj15@psu.edu); Penn State Mont Alto, Kevin Boon, [kab25@psu.edu](mailto:kab25@psu.edu); Penn State Wilkes-Barre, Steven Putzel, [sdp4@psu.edu](mailto:sdp4@psu.edu); College of the Liberal Arts, Elizabeth Brown, [eaf4@psu.edu](mailto:eaf4@psu.edu); Penn State York, Dr. Jennifer Nesbitt, [jpn12@psu.edu](mailto:jpn12@psu.edu)*

A grade of C or better is required for all courses in the minor.

For the minor in English a minimum of 18 credits are required.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18 credits

**SUPPORTING COURSES AND RELATED AREAS:** (18 credits)

*Students may not count courses used to satisfy General Education Writing/Speaking Skills*  
Select 6 credits from ENGL 200-299 (Sem: 3-8)  
Select 6 credits from ENGL 400-499 (Sem: 3-8)  
Select 6 additional credits in English (Sem: 3-8)

Last Revised by the Department: Fall Semester 2015

Blue Sheet # 44-03-073

Review Date: 11/17/15

## **Entrepreneurship Minor**

*Altoona College (ENTRP)*

Entrepreneurship plays a crucial role in the way new ideas, opportunities, inventions, and technologies are created and introduced into the global marketplace. Students in this minor first develop an understanding of financial forces that affect business ventures. The minor then provides them with a core of courses that enhance their major field of study and that provide a background sufficient for them to take advantage of many entrepreneurial opportunities.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

A grade of C or better is required for all courses in the minor.

**REQUIREMENTS FOR THE MINOR:** 19 credits

**PRESCRIBED COURSES** (13 credits)

ACCTG 211(4), ECON 102 GS(3) (Sem: 1-4)

ENTR 300(3), ENTR 320(3) (Sem: 5-7)

**SUPPORTING COURSES AND RELATED AREAS** (6 credits)

Select 3 credits at the 400-level from entrepreneurship (Sem: 7-8)

Select 3 credits of ENGL 419(3) or any 400-level Business or Economics course (Sem: 7-8)

Last Revised by the Department: Fall Semester 2000

Blue Sheet Item #: 28-06-008A

Review Date: 5/9/02

AL

## **Environmental Studies Minor**

*Altoona College (ENVST)*

The interdisciplinary minor in Environmental Studies gives students a broad-based introduction to the natural environment and human interactions with it. Students gain awareness and understanding of environmental issues from the perspectives of several disciplines in relevant natural sciences (ecology, biology, geology, and/or environmental

chemistry, for instance), the social sciences (environmental economics and/or public policy), and the arts and humanities (environmental history, ethics, and/or literature). Core courses in environmental studies, emphasizing applied and experiential learning, serve to integrate and synthesize knowledge from the natural sciences, social sciences, and arts and humanities. The goal of the program is "ecological literacy." Students completing the minor gain sufficient awareness and understanding of environmental issues to put environmental problems in a variety of contexts and to apply pertinent skills and knowledge (from studies in both their major and the minor) in addressing those problems. The minor helps prepare students for employment in the private sector or with government agencies and environmental advocacy groups, or for postgraduate study in environmental science, public policy, the humanities, or law.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES:** (3 credits)

ENVST 100(3) (Sem: 1-2)

**ADDITIONAL COURSES:** (6 credits)

Select 3 credits from ENVST 200(3) or ENVST 400(3) (Sem: 3-8)

Select 3 credits from BIOL 110 GN(4), BIOL 220W GN(4), ENGL 180 GH(3), GEOSC 20 GN(3), CHEM 20(3), CHEM 21(1), GEOG 115 GN(3), STAT 250 GQ(3), ECON 429(3), HIST 453(3), GEOG 407(3), PHIL 403(3) (Sem: 1-6)

**SUPPORTING COURSES AND RELATED AREAS:** (9 credits)

Select 9 credits (3 in each area listed below) in consultation with an academic adviser. At least six credits must be at the 400-level.

a. Natural Sciences: BIOL 240W(4), BIOL 417(3), BIOL 427(3), BIOL 435(3), BIOL 446(3), BIOL 450(3-5), ENVST 497(3), FOR 308(3), FOR 430/WFS 430(3), GEOSC 303(3), GEOSC 340(3), GEOSC 462(3), MICRB 400(3), WFS 408(3) (Sem: 3-8).

b. Social Sciences: ANTH 40(3), ANTH 146 GS;US(3), ANTH 152(3), ANTH 456(3), ANTH/BIO 464(3), ENVST 497(3), GEOG 401(3), GEOG 430(3), PLSC 444(3), PLSC 490(3), STS 47(3) (Sem: 3-8)

c. Arts and Humanities: ENGL 404(3), ENGL 412(3), ENGL 415(3), ENGL 416(3), ENGL 421(3), ENGL 430(3), ENVST 497(3), HIST/STS 151(3), HIST 428/STS(3); When topic appropriate and with program approval: ENGL 400(3), ENGL 401(3), ENGL 483(3), HIST 200 US(3), HIST 497(3) (Sem: 3-8)

Other courses may be substituted with program approval.

Last Revised by the Department: Fall Semester 2001

Review Date: 4/9/02

UCA Revision #1: 8/4/06

UCA Revision #2: 7/27/07

AL

## **Global Language and Culture Minor**

*Penn State Altoona (GLC)*

The minor in Global Language and Culture allows students to create an interdisciplinary program combining language study beyond the 12-credit level, an academic or internship experience abroad, and additional courses chosen to complete a thematic area of concentration. The GLC minor recognizes that students from all degree programs can benefit from developing intercultural competencies. It encourages students to deepen and enhance their understanding of another culture by developing advanced linguistic skills, completing a related experience abroad, and integrating both into an area of concentration of the student's choice. Applications to the minor must present a proposed plan of study that includes a clear geographic or thematic focus; this plan must be approved by the adviser for the minor. Students may apply toward the minor no more than nine credits from their major requirements.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18-20 credits

**Language Requirement:** Students must complete at least 6 credits beyond the 12-credit proficiency level in a single foreign language.

**Study Abroad Requirement:** Students must complete one of the following two options.

- a) At least 6 credits as participants in a single approved Penn State education abroad program, in a country in which the chosen language is one of the major languages spoken.
- b) At least 6 credits of a single accredited internship abroad, in a country in which the chosen language is one of the major languages spoken.

Courses taken abroad may be taught either in English (for thematically related courses) or in the target language.

When taken abroad, language courses below the 12-credit level may be used to fulfill the study abroad requirement, but will not count towards the 18 credits for the minor.

**ADDITIONAL COURSES** (12 credits)

At least 6 credits, or as many as needed to complete the 18 credits for the minor after the above two requirements have been met.

Students must select these courses to complete a geographic or thematic concentration. The rationale for the inclusion of these courses must be described in the student's proposed plan of study, and approved by the advisor for the minor. Courses may be chosen from, but are not limited to, the fields of anthropology, art, communications, history, international studies, international business, literature, political science, or a variety of other disciplines related to international culture.

At least 6 credits for the minor must be at the 400-level. 400-level courses may be completed either abroad or at Penn State, and may be either in English or in the target language.

Blue Sheet Item #: 44-04-005

Review Date: 1/12/16

## **History Minor (*HIST*)**

Contact: Abington College, Andrew August, [axa24@psu.edu](mailto:axa24@psu.edu); Altoona College, Marc Harris, [mlh6@psu.edu](mailto:mlh6@psu.edu); College of the Liberal Arts, Mike Milligan, [mjm61@psu.edu](mailto:mjm61@psu.edu); Penn

*State Berks, Randall Fegley, [raf8@psu.edu](mailto:raf8@psu.edu); World Campus*

The minor in history is designed to complement a wide range of social studies and humanities majors by affording students the opportunity to examine change and development in human societies over time. Students are free to select courses in the topics (military history, social history, cultural history, etc.), geographical areas (the United States, Latin America, Europe, Asia, and Africa), and time periods that most suit their needs and interests. The requirements for entering the minor are fifth semester standing (eligible courses taken previously will count toward the minor) and having already declared a major.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18 credits

**SUPPORTING COURSES AND RELATED AREAS:** (18 credits)

Select 12 credits of HIST courses (Sem: 1-8)

Select 6 credits of 400-level HIST courses (Sem: 5-8)

Last Revised by the Department: Fall Semester 2001

## **Human Development and Family Studies Minor (HDFS)**

*Contact: Abington College, Michael Bernstein, [mjb70@psu.edu](mailto:mjb70@psu.edu); Altoona College, Margaret Benson, [enz@psu.edu](mailto:enz@psu.edu); Penn State Harrisburg, Barbara Carl, [bec109@psu.edu](mailto:bec109@psu.edu); College of Health and Human Development, Devon M. Thomas, [dmc233@psu.edu](mailto:dmc233@psu.edu); Penn State York, Dr. JeanMarie St. Clair-Christman, [jxs176@psu.edu](mailto:jxs176@psu.edu)*

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES** (3 credits)

HDFS 129 GS(3) (Sem: 1-4)

**SUPPORTING COURSES AND RELATED AREAS** (15 credits)

Select 9 credits of HDFS courses (Sem: 1-6)

Select 6 credits of 400-level HDFS courses (Sem: 5-8)

Last Revised by the Department: Fall Semester 2001

## **Mathematics Applications Minor**

*Altoona College (MAPAL)*

The minor in mathematics and its applications is designed to provide students with an

interest in applied mathematics, and an opportunity to use mathematical tools and ways of thinking in their own major or area of concentration. The minor requires students to complete 26-28 credits in Mathematics with 6 credits from the 400-level MATH courses and 6 credits from the 400-level Mathematics Applications courses. The latter are selected in consultation with the coordinator of the minor and are from areas that directly incorporate or support the use of mathematics. Typical selections include computer science, engineering, physics, and statistics.

A grade of C or better is required for all courses in the minor.

*Scheduling recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 26-28 credits

**PRESCRIBED COURSES** (8 credits)

MATH 140 GQ(4), MATH 141 GQ(4) (Sem: 1-4)

**ADDITIONAL COURSES** (6-8 credits)

Select 6-8 credits from MATH 220 GQ(2-3), MATH 230(4), MATH 231(2), MATH 232(2), MATH 250(3), MATH 251(4), MATH 310(3), MATH 311W(3-4), or MATH 312(3) (Sem: 1-4)

**SUPPORTING COURSES AND RELATED AREAS** (12 credits)

Select 6 credits of 400-level MATH courses (Sem: 5-8)

Select 6 credits from 400-level Mathematics Applications\* courses (Sem: 5-8)

\*Mathematics Applications Courses: Through consultation with the coordinator of the minor, courses from areas that directly incorporate or support the use of mathematics will be selected. Typical areas include computer science, engineering, physics, and statistics. See divisional list of acceptable courses.

Last Revised by the Department: Spring Semester 2005

Blue Sheet Item #: 33-02-000

Review Date: 11/23/04

UCA Revision #1: 8/9/06

AA

## **Mathematics Minor (MATH)**

*Contact: Altoona College, Dan DiLeo, [dx22@psu.edu](mailto:dx22@psu.edu); Eberly College of Science, James Sellers, [jxs23@psu.edu](mailto:jxs23@psu.edu)*

The minor is designed to provide students with an interest in mathematics an opportunity to study a broad range of mathematical topics. The requirements allow students a great deal of flexibility in choosing courses of interest.

A grade of C or better is required for all courses in the minor.

*Scheduling recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 26-28 credits

**PRESCRIBED COURSES** (8 credits)

MATH 140 GQ(4), MATH 141 GQ(4) (Sem: 1-4)

**ADDITIONAL COURSES** (6-8 credits)

Select 6-8 credits from MATH 220 GQ(2-3), MATH 230(4), MATH 231(2), MATH 232(2), MATH 250(3), MATH 251(4), MATH 310(3), MATH 311W(3-4), or MATH 312(3) (Sem: 1-4)

**SUPPORTING COURSES AND RELATED AREAS** (12 credits)

Select 12 credits of 400-level MATH courses (Sem: 5-8)

Last Revised by the Department: Fall Semester 2001

Review Date: 5/10/04

UCA Revision #1: 8/9/06

## Natural Science Minor (NATSC)

*Contacts: Altoona College, David Hurtubise, [dxh40@psu.edu](mailto:dxh40@psu.edu); Berks College, Ike Shibley, [ias1@psu.edu](mailto:ias1@psu.edu); Eberly College of Science, Ron Markle, [ram29@psu.edu](mailto:ram29@psu.edu)*

This interdepartmental minor in Natural Science is designed for nonscience students who wish to gain a better appreciation for science and the scientific method. The courses required in the minor include 3 to 4 credits of general education science designed for nonscience students, 3 to 4 credits of mathematical science, 8 to 9 credits of life or physical science, including some laboratory work, and 6 credits of 400-level science courses. Certain combinations of courses are disallowed (as listed in the curriculum description), and higher-level courses are generally accepted as substitutes for lower-level courses if both are offered by the same department. Any substitutes for laboratory courses must also be laboratory courses. Advising for students in this minor will be available through the Eberly College of Science Academic Advising Center and approval of curriculum exceptions will be through the faculty committee and professor in charge of the program.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 20-23 credits

**PRESCRIBED COURSE** (1 credit)

SC 400(1) (Sem: 5-8)

**ADDITIONAL COURSES** (14-17 credits)**[62]**

Select 3-4 credits from ASTRO 1 GN(3), ASTRO 10 GN(2) and ASTRO 11 GN(1), BMB 1 GN(3), BISC 1 GN(3), BISC 2 GN(3), BISC 3 GN(3), BISC 4 GN(4), CHEM 1 GN(3), CHEM 3 GN(3), MICRB 106 GN(3) and MICRB 107 GN(1), PHYS 1 GN(3) (Sem: 1-4)

Select 3-4 credits from CMPSC 101 GQ(3), CMPSC 121 GQ(3), CMPSC 201 GQ(3) or CMPSC 202 GQ(3), CMPSC 203 GQ(4), MATH 110 GQ(4), MATH 140 GQ(4), STAT 200 GQ(4), STAT 250 GQ(3) (Sem: 3-6)

Select 8-9 credits from BIOL 11 GN(3) and BIOL 12 GN(1), BIOL 110 GN(4), CHEM 110 GN(3) and CHEM 111 GN(1), CHEM 112 GN(3) and CHEM 113 GN(1), MICRB 201(3) and MICRB 202(2), PHYS 250 GN(4), PHYS 251 GN(4) (Sem: 3-8)

**SUPPORTING COURSES AND RELATED AREAS** (5 credits)

Select 0-2 credits of 496 (independent studies) courses from the Eberly College of



Science course offerings (Sem: 5-8)

Select 3-5 credits of 400-level courses (other than independent studies) from the Eberly College of Science course offerings (Sem: 5-8)

**[62]** A student may not use credit for BISC 1 GN(3) or BISC 2 GN(3) along with credit for BIOL 11 GN(3) and BIOL 12 GN(1), or BIOL 110 GN(4); CHEM 1 GN(3) or CHEM 3 GN(3) along with credit for CHEM 110 GN(3) and CHEM 111 GN(1) or CHEM 112 GN(3) and CHEM 113 GN(1); PHYS 1 GN(3) along with credit for PHYS 250 GN(4) or PHYS 251 GN(4); MICRB 106 GN(3) and MICRB 107 GN(1) along with credit for MICRB 201(3) and MICRB 202(2).

Last Revised by the Department: Summer Session 1995

Blue Sheet Item #: 23-04-042

Review Date: 9/13/02

UCA Revision #1: 8/9/06

UCA Revision #2: 7/30/07

## Political Science Minor (PL SC)

*Contact: Altoona College, Dan DiLeo, [dxd22@psu.edu](mailto:dxd22@psu.edu); Capital College, Steve Peterson, [sap12@psu.edu](mailto:sap12@psu.edu); Penn State Berks, Randy Newnham, [ren2@psu.edu](mailto:ren2@psu.edu); Penn State Fayette, Brad Whitsel, [bcw4@psu.edu](mailto:bcw4@psu.edu); College of the Liberal Arts, Suzanna Linn, [sld8@psu.edu](mailto:sld8@psu.edu)*

The Political Science minor consists of 18 credits with at least one course in each of the following Political Science areas: American, theory/methodology, comparative, and international relations. Six (6) of these 18 credits must be at the 400 level.

When electing this minor, the student should have junior (fifth-semester) standing. Special attention should be given to the fact that courses used to satisfy general education, degree requirements, electives, and major requirements may also be used to satisfy minor requirements.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18 credits

**ADDITIONAL COURSES** (18 credits)

Select 18 credits in Political Science (at least 6 credits at the 400 level) (Sem: 3-8)  
Include at least one course in each of the following areas: American, Comparative, International Relations, and Theory

Last Revised by the Department: Fall Semester 1999

Blue Sheet Item #: 28-01-056

Review Date: 11/10/03

LA

## Psychology Minor (PSY)

Contact: Abington College, Michael Bernstein, [mjb70@psu.edu](mailto:mjb70@psu.edu); Altoona College, Brad Pinter, [tbp1@psu.edu](mailto:tbp1@psu.edu); Capital College, Cobi Micahel, [cmk292@psu.edu](mailto:cmk292@psu.edu); Penn State Beaver, Kevin Bennett, [klb48@psu.edu](mailto:klb48@psu.edu); Penn State Berks, Erin Johnson, [eem139@psu.edu](mailto:eem139@psu.edu); Penn State Brandywine, Pauline Guerin, [pbg12@psu.edu](mailto:pbg12@psu.edu); Penn State Fayette, Russ Filburn, [frf1@psu.edu](mailto:frf1@psu.edu); Penn State Greater Allegheny, Eilizabeth Mazur, [exm32@psu.edu](mailto:exm32@psu.edu); Penn State Lehigh Valley, Kevin Kelley, [kjk13@psu.edu](mailto:kjk13@psu.edu); Penn State New Kensington, K. R. Bridges, [krb3@psu.edu](mailto:krb3@psu.edu); Penn State Schuylkill, Helen Hendy, [hl4@psu.edu](mailto:hl4@psu.edu); College of the Liberal Arts, Richard Carlson, [cvy@psu.edu](mailto:cvy@psu.edu)

The Psychology minor is designed to provide undergraduate students with a broad overview of topics and domains within psychology, knowledge and skills related to research methods in psychology, and deeper knowledge of research, theory, and application in one or two specific content domains. Students completing this minor will find a flexible selection of coursework in psychology. The content domains from which students may select courses include biological, clinical, cognitive, developmental, industrial-organizational, and social psychology. Students may choose courses that emphasize theory or application of psychological principles. A number of these courses examine the application of psychological research to societal issues.

The required research methods course, PSYCH 301, carries a statistics prerequisite that can be met by either PSYCH 200 or STAT 200. STAT 200 does not count toward the minimum 18 credits required for the minor. Students minoring in Psychology at University Park are encouraged to consult the Psychology Advising Center early in the process of planning their minor.

The Psychology minor may be appropriate for students pursuing graduate training or professional careers in fields such as health, business, education, and human services, as well as in psychology.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES** (7 credits)

PSYCH 100 GS(3), PSYCH 301(4) (Sem: 1-4)

**ADDITIONAL COURSES** (11 credits)

Select 11 credits (at least 6 credits at the 400 level) in PSYCH (Sem: 5-8)

Last Revised by the Department: Fall Semester 2001

Review Date: 12/20/02

UCA Revision #1: 8/14/06

## Sociology Minor (SOC)

Contact: Abington College, Michael Bernstein, [mjb70@psu.edu](mailto:mjb70@psu.edu); Altoona College, Karyn

McKinney, [kdm12@psu.edu](mailto:kdm12@psu.edu); Behrend College, Nicole Shoenberger, [nas25@psu.edu](mailto:nas25@psu.edu), Capital College, Kenneth Cunningham, [kuc1@psu.edu](mailto:kuc1@psu.edu); Penn State Fayette, Russ Filburn, [frf1@psu.edu](mailto:frf1@psu.edu); Penn State Schuylkill, Salih Hakan Can, [shc11@psu.edu](mailto:shc11@psu.edu); College of the Liberal Arts, Sal Oropesa, [rso1@psu.edu](mailto:rso1@psu.edu)

The sociology minor allows students to explore the wide range of topics, social groups, and social interactions studied by sociologists. From social inequalities and social problems to the familiar institutions of family, school, religion, and government, the diversity of courses available allows sociology minors to explore courses relevant to their interests. The courses also provide multiple viewpoints, studying the intimate interactions of families and small groups and the complex interactions of global economies and political alliances. Requiring a minimum of 18 credits in sociology, including Introductory Sociology (SOC 1) and two courses at the 400 level, students have flexibility in choosing a set of courses for their sociology minor.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES** (3 credits)

SOC 1 GS(3) (Sem: 1-6)

**SUPPORTING COURSES AND RELATED AREAS** (15 credits)

Select 15 credits in sociology; at least 6 of those credits must be at the 400 level (Sem: 1-8)

Last Revised by the Department: Fall Semester 2001

Editorial: 3/23/07

## Spanish Minor (SPAN)

*Contact: Altoona College, Roselyn Costantino, [rx19@psu.edu](mailto:rx19@psu.edu); Behrend College, Soledad Traverso, [sxt19@psu.edu](mailto:sxt19@psu.edu); Berks College, Rosario Torres, [rzt1@psu.edu](mailto:rzt1@psu.edu); College of the Liberal Arts, Margaret (Peggy) Blue, [mmb21@psu.edu](mailto:mmb21@psu.edu)*

A grade of C or better is required for all courses in the minor. Courses that do not require knowledge of Spanish may not be counted toward the minor.

*Scheduling recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR:** 18 credits

**ADDITIONAL COURSES** (9 credits)

Select 9 credits from:

SPAN 100(3); SPAN 100A\*(3); SPAN 100B(3); SPAN 100C(3) (Sem: 2-6)

SPAN 200(3); SPAN 301\*(3) (Sem: 2-6)

SPAN 215(3) or SPAN 253(3) (Sem: 3-6)

**SUPPORTING COURSES AND RELATED AREAS** (9 credits)

Select 3 credits from the following: SPAN 210(3), SPAN 220(3), SPAN 297(3), SPAN 299 IL(3), SPAN 300(3), SPAN 305(3), SPAN 314(3), SPAN 316(3), SPAN 353(3), SPAN 354(3), SPAN 355(3), SPAN 356(3), SPAN 397(3), SPAN 399 IL(3) (Sem: 2-8)

Select 6 credits from the following: SPAN 410(3), SPAN 412(3), SPAN 413(3), SPAN 418(3),

SPAN 420(3), SPAN 439(3), SPAN 472(3), SPAN 476(3), SPAN 479(3), SPAN 488(3), SPAN 490(3), SPAN 497(3), SPAN 499 IL(1-12) (Sem: 5-8)

SPAN 199, 299, 399, and 499 (Study Abroad - Spanish) and SPAN 197, 297, 397, 497 (Special Topics Courses) may also be applied to the Spanish minor and will be substituted for the appropriate course by the Spanish minor advisor. All courses taken abroad must be taught in Spanish.

NOTE: SPAN 130, 131, 230, 231 and any course that does not require a knowledge of Spanish. DO NOT count toward the Spanish minor.

\* Heritage speakers (students with Spanish language in family background) and native speakers of Spanish should take SPAN 100A and SPAN 301 instead of SPAN 100 and SPAN 200. May not take SPAN 410.

Last Revised by the Department: Spring Semester 2017

Blue Sheet Item #: 45-05-043

Review Date: 2/21/2017

LA

## Women's Studies Minor (WMNST)

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This interdisciplinary minor is designed to develop a broad understanding of the study of women and women's perspectives in all areas of academic scholarship. The primary focus is on feminist analyses of women's lives, women's social, cultural, and scientific contributions, and the structure of sex/gender systems. The interdisciplinary and inclusive nature of the field is reflected in a curriculum that includes courses cross-listed with a wide variety of departments, courses that deal with aspects of women's lives throughout history, and courses that recognize the diversities of culture, race, religion, ethnicity, age, disability, and sexual orientation. The Women's Studies minor emphasizes the development of critical and analytical skills, creative approaches to problem solving, and the ability to articulate productive alternatives.

Women's Studies minors have a definite career advantage, and can be successful in a wide variety of career paths. Some of these include legal advocacy, counseling, journalism, public relations, management, nonprofit administration, teaching, medicine, politics, or art. In addition, many alumnae/i are currently studying in professional, law, or graduate schools.

A grade of C or better is required for all courses in the minor.

*Scheduling Recommendation by Semester Standing given like (Sem: 1-2)*

**REQUIREMENTS FOR THE MINOR: 18 credits**

**PRESCRIBED COURSES** (3 credits)

WMNST 301 GH(3) (Sem: 1-4)

**ADDITIONAL COURSES** (3 credits)

WMNST 100 GS;US;IL(3) or WMNST 106 GS;US;IL (Sem: 1-4)

**SUPPORTING COURSES AND RELATED AREAS** (12 credits)

Select 12 credits in Women's Studies or from the program-approved list; at least 6 credits must be at the 400-level

--3 credits from each of the following categories: (Sem: 1-8)

- a. arts or humanities
- b. natural or social sciences
- c. focusing on non-Western women or on women of color in the United States

Last Revised by the Department: Spring Semester 2002

Blue Sheet Item #: 30-02-008A

Review Date: 6/29/05

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