



# University Bulletin

## Undergraduate Degree Programs

### Penn State Berks

Penn State Berks College, in suburban Reading, offers high-quality, diverse programs. Students may choose from the two- and four-year programs offered at the college's locations or take the first two years of more than 160 Penn State academic programs that can be completed at other Penn State locations.

#### BERKS COLLEGE ADMINISTRATION

SUSAN PHILLIPS SPEECE, *Chancellor*

PAUL D. ESQUEDA, *Associate Dean of Academic Affairs*

### Baccalaureate Degrees

#### American Studies

*Berks College (AMSBL)*

The Bachelor of Arts in American Studies at Berks College offers students a liberal arts education with a critical focus on the American experience. It provides students significant opportunities to explore American literature and history and to acquire an interdisciplinary perspective on the American experience through offerings in American Studies, communication arts and sciences, sociology, theatre, and other areas. Many of the courses in the program emphasize multicultural perspectives. Through course selection, internships, research projects, and study abroad opportunities, students are encouraged to individualize their major programs in ways that best serve their intellectual and vocational objectives.

Students are encouraged to meet with an adviser early in their academic program to design a program that will help them to meet their career goals, whether these include graduate school, law (or other professional) school, or other careers.

A minimum of 127 credits is required for the B.A. degree in American Studies.

*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 REQUIREMENTS FOR THE MAJOR)

**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:** 42 credits [\[1\] \(#mnote01\)](#)

**PRESCRIBED COURSES** (21 credits)

HIST 020 GH;US(3), HIST 021 GH;US(3) (Sem: 1-2)

AM ST 100 GH(3) (Sem: 3-4)

ENGL 231W(3), ENGL 232W(3) (Sem: 3-6)

AM ST 322 US(3) (Sem: 5-6)

AM ST 491W(3) (Sem: 7-8)

**ADDITIONAL COURSES** (21 credits)

Select 3 credits of Internship, Research, or Foreign Study from the following:

AM ST 295(1-18), AM ST 494(1-12), AM ST 499 IL(1-12) (Sem: 7-8)

Select 6 credits of Multicultural from the following:

AM ST 104 GH;US(3), ENGL 135 GH;US(3), ENGL 139 GH;US(3), HIST 152 GH;US;IL(3), HIST 179 GH;IL(3), SOC 103 US(3) (Sem: 1-4)

THEA 208 GA;US;IL(3) (Sem: 3-4)

Select 3 credits from the following:

AM ST 105 GH;US(3), AM ST 140W GH;US(3), PL SC 001 GS(3), SOC 001 GS(3) (Sem: 1-4)

ART H 307 GA(3) (Sem: 3-6)

Select 9 credits from the following:

AM ST 421(3), AM ST 404(3), AM ST 405(3), AM ST 430 US(3), HIST 458W(3), HIST 459Y US(3), HIST 467 US;IL(3), HSTRY 488(3), ENGL 430(3), ENGL 431 US(3), 434(3), ENGL 437(3), CAS 415(3), CAS 478(3), SOC 409 US(3), SOC 432(3), THEA 405(3), THEA 412 US;IL(3) (Sem: 5-8)

AM ST 491W(3)\* (Sem: 7-8)

\*may be repeated for up to 6 credits total

**[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 2004

Blue Sheet Item #: 32-01-026

Review Date: 1/23/06

UCA Revision #2: 7/26/07

BK-LV

### Applied Psychology

*Berks College (APSYC)*

*University College (APSCC): Penn State Beaver, Penn State Lehigh Valley, Penn State Greater Allegheny, Penn State Hazleton, Penn State New Kensington*

This major is designed for students who are interested in a liberal arts degree with a concentration in applied psychology. The program features both active

and collaborative classroom experiences in addition to intensive internship experiences, and is most appropriate for students who wish to develop a set of applied scientific and human relations skills that will prepare them for entry-level employment in a wide range of government and private human service organizations and agencies, and in business and industry. Because of the flexible and broad nature of the degree, students might also use this major as a preparation for graduate or professional school in business, human services, law, or the social sciences.

This program differs most notably from traditional majors in psychology in three ways: 1) it is intended for students who may not be planning to pursue a doctoral degree in psychology that would prepare them for a career as a psychologist; 2) it requires that students learn and apply skills during 12 credits of internship experiences; 3) it requires that students demonstrate skill proficiency in a comprehensive assessment in order to graduate.

For the B.A. degree in Applied Psychology, a minimum of 127 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 or GENERAL EDUCATION course selection)

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

**ELECTIVES:** 8-24 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:** 50 credits [1](#mnote01)  
(This includes 0-4 credits of General Education GQ courses.)

**PRESCRIBED COURSES** (28 credits)  
PSYCH 100 GS(3) (Sem: 1-2)  
PSYCH 212 GS(3), PSYCH 296(1) (Sem: 1-4)  
PSYCH 301W(4) (Sem: 3-6)  
PSYCH 404/EDPSY 450(3), PSYCH 495(12) (Sem: 5-8)  
PSYCH 496(2) (Sem: 7-8)

**ADDITIONAL COURSES** (16 credits)  
PSYCH 200(4) or STAT 200 GQ(4) (Sem: 3-4)  
Select 12 credits from the following groups, including a minimum of 3 credits from each category (a total of 9 credits must be at the 400 level):

1. Abnormal, Clinical, Personality:  
PSYCH 238 GS(3) (Sem: 3-6)  
PSYCH 470(3), PSYCH 479 US(3), PSYCH 481(3) (Sem: 5-8)
2. Developmental, Cognitive, Learning:  
ED PSY 014(3), PSYCH 256 GS(3), PSYCH 261 GS(3), PSYCH 412(3), PSYCH 415(3), PSYCH 456(3) (Sem: 3-6)  
PSYCH 416/HD FS 445(3) (Sem: 5-8)
3. Industrial/Organizational, Social, Interpersonal:  
PSYCH 221 GS(3), PSYCH 281 GS(3), PSYCH 420(3) (Sem: 3-8)  
PSYCH 423(3), PSYCH 424(3) (Sem: 5-8)
4. Health, Wellness, Adjustment:  
PSYCH 243 GS(3) (Sem: 3-6)  
PSYCH 441(3), PSYCH 471(3) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS**(6 credits)  
Select 3 credits of 200-level psychology in consultation with an adviser (Sem: 1-2)  
Select 3 credits in consultation with an adviser (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 2003

Blue Sheet Item #: 31-04-017

Review Date: 1/14/03

UCA Revision #1: 8/14/06

BK-LV

## Biology

Abington College (BIOAB)  
Altoona College (BIOAL)  
Berks College (BIOBL)  
University Park, Eberly College of Science (BIOL)

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

PROFESSOR DOUGLAS CAVENER, *Head*

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) minors.cfm?letter=B&program=biolmin.htm**

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)(11(#mnote01)), CHEM 111 GN(1), CHEM 112 GN(11(#mnote01)), CHEM 113 GN(1), MATH 140 GQ(11(#mnote01)), MATH 141 GQ(4)  
(Sem: 1-2)  
BIOL 110 GN(4)(11(#mnote01)), BIOL 220W GN(4)(11(#mnote01)), BIOL 230W GN(4)(11(#mnote01)), BIOL 240W GN(4)(11(#mnote01)) (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), PPATH 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), PPATH 425(4), SC 2 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 440V PPATH 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), BIC 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(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) BIC 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), BIC 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) BIOL 461(3), BIOL 471(3), BIOL 473(2), BIOL 496(1-3), PPATH 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 -- 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 413(3), BIOL 416(3), BIOL 422(3) 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), BIC 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 PPATH 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 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 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(4), PPATH 416(2-4), PPATH 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 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 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)

**[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 2007

Blue Sheet Item #: 35-06-520

Review Date: 4/10/07

UCA Revision #1: 8/2/06

UCA Revision #2: 7/26/07

SC

## 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 Hazleton, Penn State Lehigh Valley, Penn State Mont Alto, Penn State Greater Allegheny, Penn State New Kensington, Penn State Schuylkill, Penn State Shenango, Penn State Wilkes-Barre, Penn State Worthington Scranton, Penn State York*

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 Business (B.S.B.) is an upper-division, professionally oriented business degree for individuals who are seeking general preparation in business. The degree combines the theoretical underpinnings of core business disciplines, notably management, marketing, finance, and logistics, with applied study in a practical setting, especially the small-business climates across most of the Commonwealth. Through the choice of an 18-credit option, students develop a specialty related to a key business sector. Students also develop written and oral communication skills throughout the program, acquire contemporary computer skills, and engage in active and collaborative learning. The degree allows students throughout the Commonwealth to become familiar with the unique business environments of their local communities, a design that sets the degree apart from other business degrees offered both within the University and throughout the Commonwealth.

The associate degree in business administration at Penn State articulates with the degree. Advanced-standing students from other accredited colleges or universities will be admitted only with specified grade-point averages established annually in accordance with University policy.

**ACCOUNTING OPTION:**Preparation for positions in business with an emphasis on the areas of financial and managerial accounting, systems and controls, auditing, and taxation.

**ENTREPRENEURSHIP OPTION (offered only at the Altoona College):**Preparation for a variety of entrepreneurial careers from starting a new business venture to working as an entrepreneur within a larger organization.

**FINANCIAL SERVICES OPTION:**Preparation for positions in community financial organizations such as banks, real estate firms, insurance brokers, investment firms, and credit companies.

**HEALTH SERVICES OPTION:**Development of a background in the financial and administrative aspects of health care enterprises such as hospitals, managed-care organizations, clinical practices, and physicians' offices.

**INDIVIDUALIZED BUSINESS OPTION:**The selection of 18 credits of study based on an individualized plan of study submitted by the student and approved by an adviser. The option allows the tailoring of a program of study to suit specific student needs.

**MARKETING AND MANAGEMENT OPTION**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 higher (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:** 8-16 credits

**REQUIREMENTS FOR THE MAJOR:** 71-79 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):** 53-61 credits

**PRESCRIBED COURSES** (32-37 credits)

ECON 002 GS(3) (Sem: 1-2)

ACCTG 211(4), ECON 004 GS(3), MIS 204(3) (Sem: 3-4)

B A 321(1-3) [11\(#mnote01\)](#), B A 322(1-3) [11\(#mnote01\)](#), B A 420([11\(#mnote01\)](#)), FIN 301(3) [11\(#mnote01\)](#), MGMT 301(3) [11\(#mnote01\)](#), MKTG

301(3) [11\(#mnote01\)](#), SCM 301(3) [11\(#mnote01\)](#) (Sem: 5-6)

B A 421(1-2) [11\(#mnote01\)](#), B A 422W(3) [11\(#mnote01\)](#) (Sem: 7-8)

**ADDITIONAL COURSES** (21-24 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)

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

B A 323(3) [11\(#mnote01\)](#) or I B 303 IL(3) [11\(#mnote01\)](#) (Sem: 5-8)

Select 6-9 credits from B A 495A(3-9) [11\(#mnote01\)](#), B A 495B(3-9) [11\(#mnote01\)](#), or B A 495C(3-9) [11\(#mnote01\)](#) (Sem: 7-8)

**REQUIREMENTS FOR THE OPTION:** 18 credits [11\(#mnote01\)](#)

(Not all options are available at every campus.)

**ACCOUNTING OPTION:**(18 credits)

**PRESCRIBED COURSES** (15 credits)

ACCTG 404(3), ACCTG 432(3), ACCTG 471(3), ACCTG 472(3) (Sem: 5-6)

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

**ADDITIONAL COURSES** (3 credits)

ACCTG 405(3) or FINSV 411(3) (Sem: 6-8)

**ENTREPRENEURSHIP OPTION:**(18 credits)

**PRESCRIBED COURSES** (12 credits)

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

ENTR 400(3), ENGL 419(3) (Sem: 7-8)

**ADDITIONAL COURSES** (6 credits)

ENTR 410(3), ENTR 420(3), ENTR 430(3), or ENTR 440(3) (Sem: 5-8)

CAS 250(3), CAS 252(3), or CAS 352(3) (Sem: 7-8)

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

**PRESCRIBED COURSES** (12 credits)

FINSV 400(3), FINSV 411(3), INS 301(3) (Sem: 5-8)

ENGL 419(3) (Sem: 7-8)

**ADDITIONAL COURSES** (6 credits)

ECON 351(3), FINSV 420(3), INS 310W(3), or R EST 301(3) (Sem: 5-8)

CAS 250(3), CAS 252(3), or CAS 352(3) (Sem: 5-8)

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

**PRESCRIBED COURSES** (12 credits)

H P A 101(3) (Sem: 5-6)

H P A 310(3), H P A 332(3) (Sem: 5-8)

ENGL 419(3) (Sem: 7-8)

**ADDITIONAL COURSES** (6 credits)

CAS 250(3), CAS 252(3), or CAS 352(3) (Sem: 5-8)

H P A 447(3) or H P A 455(3) (Sem: 7-8)

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

Prepare an individualized plan of study consisting of 18 credits to be submitted for approval by an adviser. (Sem: 5-8)

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

**ADDITIONAL COURSES** (18 credits)

1. Select 15 credits from the following (to include at least 3 credits in MGMT and 3 credits in MKTG and at least 3 credits at the 400 level):

MGMT 321(3), MGMT 326(3), MGMT 331(3), MGMT 341(3), MGMT 401(3), MGMT 424(3); MGMT 431(3) or B A 250(3); MGMT 440(3), MGMT 445(3), MGM 451W(3), MGMT 461 IL(3); MKTG 220(3) or MKTG 410(3); MKTG 310(3), MKTG 327(3), MKTG 330(3), MKTG 342(3), MKTG 422(3), MKTG 428(3), MKTG 4 IL(3), MKTG 450W(3), MKTG 478(3) (Sem: 5-8)

2. Select 3 credits from CAS 250(3), CAS 252(3), CAS 352(3), CAS 404(3) or ENGL 419(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.

*Penn State Schuylkill/Individualized Business and Management/Marketing Options only (1/26/07)*

Last Revised by the Department: Summer Session 2008

Blue Sheet Item #: 36-05-099

Review Date: 2/26/08

## Communication Arts and Sciences

*Berks College (CASBL)*

*University College (CASCC): Penn State Brandywine, Penn State York*

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

PROFESSOR JAMES DILLARD, *Head*

This major provides increased understanding and practice in the ways humans use symbols to influence people and the world around them. The ability to communicate effectively with others in personal, social, work and multicultural situations is essential in modern society. A student of Communication Arts and Sciences will learn to think critically, analyze and solve problems, understand and manage conflict, argue persuasively, influence people, form and keep relationships, give effective presentations, and participate in the civic and political life of a community. The flexibility of the program offers preparation for a variety of careers such as administration, law, business, health, and human services fields. A CAS degree also lends itself well to a concurrent degree program in which students prepare themselves in several fields of study.

For the B.A. degree in Communication Arts and Sciences, 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 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:** 25 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:** 30 credits [\[1\]\(#mnote01\)](#)

**PRESCRIBED COURSES** (9 credits)

CAS 201 GH(3), CAS 202 GS(3), CAS 204(3) (Sem: 3-6)

**ADDITIONAL COURSES** (6 credits)

Select 3 credits of skills courses from CAS 203 GS(3), CAS 205(3), CAS 211(3), CAS 213(3), CAS 214W(3), CAS 215(3), CAS 216(2), CAS 250(3), CAS 252(3), CA 271 US;IL(3), CAS 280W(3), or CAS 283(3) (Sem: 3-8)

Select 3 credits of 300-level courses from CAS 302(2), CAS 311(3), CAS 321(3), CAS 352(3), CAS 375(3), CAS 383(3), CAS 398(1-9), CAS 399 IL(1-12) (Sem: )

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

Select 15 credits of other CAS courses; at least 12 credits must be at the 400 level. A maximum of 6 credits from CAS 494, 495, 496, and 499(IL) may satisfy this requirement. CAS 126(3) and CAS 195(1) may not be counted as part of the major (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 #: 36-02-049

Review Date: 10/9/07

LA

## Electro-Mechanical Engineering Technology

*Altoona College*

*Berks College*

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

PROFESSOR IRENE FERRARA, *Program Coordinator, Penn State Altoona*

PROFESSOR TERRY SPEICHER, *Program Coordinator, Penn State Berks*

PROFESSOR RONALD LAND, *Program Coordinator, Penn State New Kensington*

PROFESSOR CHARLES GASTON, *Program Coordinator, Penn State York*

PROFESSOR DHUSHY SATHIANATHAN, *Head, School of Engineering Design, Technology, and Professional Programs, University Park College of Engineering*

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. Specific educational objectives of the program are to:

Provide graduates with a broad knowledge of the electrical, electronic, and mechanical devices, and the instrumentation, machine technology, computer applications, and control equipment applicable to electro-mechanical systems.

Prepare graduates who can apply technical knowledge to the development, operation, control, troubleshooting, maintenance, and management of electromechanical systems.

Prepare graduates who can communicate effectively and work collaboratively in multi-disciplinary teams.

Prepare graduates who are productive professionals in technical careers and who continue to adapt to changes in the technical fields.

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 129 credits is required. This program is accredited at Penn State Altoona,

at Penn State Berks, at Penn State New Kensington, and at Penn State York of the University College by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: 410-347-7700, or www.abet.org

*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 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:** 105 credits  
(This includes 21 credits of General Education courses; 6 credits of GQ courses; 9 credits of GN courses; 3 credits of GWS courses; 3 credits of GH or GS courses.)

**PRESCRIBED COURSES** (87 credits)

CMPET 117(3[11(#mnote01)], CMPET 120(1[11(#mnote01)], EDSGN 100(3), EET 105(3), MATH 040 GQ[11(#mnote01)], MATH 083 GQ(4[11(#mnote01)], MCH T 111(3[11(#mnote01)], MCH T 112(1[11(#mnote01)], MET 105(3) (Sem: 1-2)  
EET 114(4[11(#mnote01)], EET 118(1[11(#mnote01)], EET 275(3), EG T 114(2), EMET 222[11(#mnote01)], ENGL 202C GWS(3), IET 215(2), IET 216(2), MATH 210(3[11(#mnote01)], MATH 211(3[11(#mnote01)]) (Sem: 3-4)  
CMPET 211(3), EET 212W(1[11(#mnote01)], EMET 230(3[11(#mnote01)], EMET 325(3), EMET 326(3), EMET 330[11(#mnote01)], EMET 350(3) (Sem: 5-6)  
EMET 405(3), EMET 410(4), EMET 440(3), IET 333(2) (Sem: 7-8)

**ADDITIONAL COURSES** (18 credits)

Select 9 credits of GN from: BIOL 011 GN(3) and BIOL 012 GN(1); BIOL 141 GN(3), CHEM 110 GN(3) and CHEM 111 GN(1); CHEM 112 GN(3) or CHEM 113 GN(1) PHYS 150 GN(3) or PHYS 211 GN(4) or PHYS 250 GN(4); PHYS 151 GN(3) or PHYS 212 GN(4) or PHYS 251 GN(4) (Sem: 4-6)

Select 6 credits of electives from: CMPSC 201 GQ(3) or CMPSC 121 GQ(3); EMET 401(1), EMET 402(2), EMET 403(1), EMET 430(3), EMET 432(3), EMET 495(1-6) EMET 496(1-6), EMET 497(1-6), ENTR 300(3), ENTR 320(3), IST 402(3), IST 431(3), IST 432(3); MATH 220 GQ(2), MATH 231(2), MATH 250(3), MATH 251(4), M 301(3); MKTG 301(3); STAT 200 GQ(4) or STAT 220(3) (Sem: 7-8)

Select 3 credits of GH or GS from: S T S 200 GS(3), S T S 233 GH(3), or S T S 245 GS;IL(3) (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: Summer Session 2009

Blue Sheet Item #: 37-04-017

Review Date: 1/13/09

UCA Revision #1: 8/3/06

UCA Revision #2: 7/27/07

[Comments \(http://www.psu.edu/bulletins/bluebook/contact \)](http://www.psu.edu/bulletins/bluebook/contact)

EN

## Elementary and Kindergarten Education

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

*Berks College (EEDBL)*

*University College: Penn State Lehigh Valley (EEDCC): Elementary Education Teaching Option*

*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 JACQUELINE EDMONDSON, *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/general information.cfm?section=SpecialAP6](#).)

*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 [11(#mnote01)]

**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), SCIED 458(3), SPL 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 002 GS(3), ECON 004 GS(3) or ECON 014 GS(3) (Sem: 1-8)  
 GEOG 020 GS;US;IL(3), GEOG 030 GS(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 1 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 [\[1\]\(#mnote01\)](#))**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 [\[1\]\(#mnote01\)](#))**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

## Global Studies

*Berks College (GLBST)*

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

PROFESSOR KIRWIN SHAFFER, *Program Coordinator*

This major is designed for students who are interested in a liberal arts degree with a concentration in global studies. Featuring both active and collaborative classroom experiences in addition to intensive study abroad/internship experiences, the program is designed for students who wish to develop a set of analytical and interpersonal skills that will prepare them for entry-level employment in a wide range of government and non-profit organizations and agencies and in businesses and industry. Because of the flexible and broad nature of the degree, students might also use this major as preparation for graduate or professional school in business, law, or the social sciences. This program differs most notably from traditional majors in international/global studies by requiring core courses in world literature and intercultural communication, while retaining the traditional foreign language, history, and political science emphasis of most other programs. Study abroad and an internship with an international organization are also important features of this degree.

For the B.A. degree in Global Studies, 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 this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in GENERAL EDUCATION)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in GENERAL EDUCATION course selection)

**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:**39 credits [\[1\]\(#mnote01\)](#)

Including 24 credits at the 400 level (9-15 credits of which are included in the prescribed courses, the other 9-15 must be chosen from the option tracks below). A minimum of 3 credits of study abroad (meeting any requirement) and 3 credits of INTST 495 are required for the completion of this degree.

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):**18-24 credits**PRESCRIBED COURSES** (18-24 credits)

PL SC 014 GS;IL(3) (Sem: 1-4)  
 HIST 320W(3) (Sem: 1-6)  
 CAS 271 US;IL(3) (Sem: 3-4)  
 ENGL 403(3) (Sem: 3-6)  
 CAS 471 US;IL(3), INTST 495 (3-9) (Sem: 7-8)

**REQUIREMENTS FOR THE OPTION:**15-21 credits**LATIN AMERICAN CULTURE OPTION**(15-21 credits)**ADDITIONAL COURSES** (15-21 credits)

Select 15-21 credits from the following list of courses:  
 CEDEV 430(3), CMLIT 153 GH;IL(3), ECON 333 GS(3), ECON 370 GS(3), HIST 179 GH;IL(3), HIST 432 IL(3), HIST 467 US;IL(3), HIST 468 IL(3), I B 303(3), INTAG

GS;IL(3), PL SC 440(3), SPAN 100([831](#mnote01)), SPAN 131 GH;IL(3) or SPAN 131W GH;US;IL(3), SPAN 200([831](#mnote01)), SPAN 220([831](#mnote01)), SPAN 253([831](#mnote01)), SPAN 300([831](#mnote01)), SPAN 420([831](#mnote01)), SPAN 476([831](#mnote01)), SPAN 497(1-9([831](#mnote01))) (Sem: 1-8)

**CONTEMPORARY HISTORY AND POLITICS OPTION:**(15-21 credits)

**ADDITIONAL COURSES** (15-21 credits)

Select 15-21 credits from the following list of courses:

CEDEV 430(3), CMLIT 153 GH;IL(3), ECON 333 GS(3), ECON 370 GS(3), ENGL 182A GH;US;IL(3), FR 139 GH;IL(3), GER 100 GH;IL(3), HIST 120 GS;IL(3), HIST 175 GH;IL(3), HIST 179 GH;IL(3), HIST 181 GH;IL(3), HIST 192 GH;IL(3), HIST 435(3), HIST 467 US;IL(3), HIST 468 IL(3), HIST 488(3), I B 303(3), INTAG 100 GS;IL(3), I 412(3), PL SC 413(3), PL SC 424(3), PL SC 440(3), PL SC 443(3), PL SC 454 IL(3), POLSC 428(3), RUS 100 GH;IL(3), SPAN 131 GH;IL(3), UKR 100 GH;IL(3) (Sem: 1-8)

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

[83] These courses also constitute the projected Spanish minor.

Last Revised by the Department: Fall Semester 2006

Blue Sheet Item #: 34-06-110

Review Date: 4/11/06

UCA Revision #2: 7/27/07

BK

## Information Sciences and Technology

Abington College

Berks College

Capital College

University College: Penn State Beaver, Penn State Brandywine, Penn State Greater Allegheny, Penn State Hazleton, Penn State New Kensington, Penn State Lehigh Valley, Penn State Schuylkill, Penn State Wilkes-Barre, Penn State Worthington Scranton, Penn State York  
World Campus

University Park, College of Information Sciences and Technology (ISTBS)

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

PROFESSOR HENRY C. FOLEY, Program Coordinator

This major is structured to provide students with the theoretical frameworks and skill sets necessary to compete and be productive in the information technology-intensive global context that defines the new "Information Age." Specifically, the degree will be focused on a program that will build an understanding of core information technologies and related areas of study; will prepare students for the practical application of various information sciences and related technologies; and engage students in sharpening their abilities to think critically and to work in teams. All this will be done with considerable interdisciplinary integration in order to expose students to the cognitive, social, institutional, and global environments of IST. Team projects in most courses, a required internship, and a senior capstone experience provide additional, focused venues for involving students in the cutting-edge issues and technologies of the field.

**INFORMATION SYSTEMS: DESIGN & DEVELOPMENT OPTION:** This option is focused on expanding the skills needed to develop advanced information technology systems using state-of-the-art tools and techniques. The emphasis is on providing the student with both knowledge in the design, implementation, testing and evolution of complex software systems as well as a set of project-oriented, team-programming experiences.

**INFORMATION TECHNOLOGY: INTEGRATION & APPLICATION OPTION:** This option is designed to prepare students to use information technology to realize a variety of system-based goals (e.g., reliability, accessibility, efficiency, etc.). It is focused on developing a theoretical foundation and the skill set needed for integrating information technology into different systems for the purpose of enhancing system performance. The emphasis is on providing the student with both the theoretical frameworks needed to use information technology as a system attribute as well as a set of application-oriented experiences and skills.

**INFORMATION CONTEXT: PEOPLE, ORGANIZATIONS, AND SOCIETY OPTION:** This option focuses on how information technology affects social change and the delivery of information to the consumer. This includes the human-machine interface; organization and retrieval of information; digital libraries; information and telecommunications services; information and media industry structures; software services and intermediaries; telecommunications and information law and policy; sociological aspects of technology change; multimedia; and art, design, and aesthetics.

**Entrance Requirements:** To be eligible for entrance to the Information Sciences and Technology (ISTBS) major, students must:

1. be taking, or have taken, a program appropriate for entry to the major as shown in the *Bulletin*, including approximately 60 credits of course work.
2. have completed the following entrance-to-major requirements with grades of C or better in each: IST 110(3); IST 210(4); and IST 220(3). These courses must be completed by the end of the semester during which the entrance-to-major procedure is carried out.
3. 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.

For the B.S. degree in Information Sciences and Technology, a minimum of 125 credits is required.

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

**GENERAL EDUCATION:** 45 credits

(12 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:** 7 credits

**REQUIREMENTS FOR THE MAJOR:** 85 credits

(This includes 12 credits of General Education courses: 6 credits of GQ courses; 3 credits of GS courses; and 3 credits of GWS courses.)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 64 credits

**PRESCRIBED COURSES** (33 credits)

CMPS 101 GQ([31](#mnote01)), IST 110 GS([31](#mnote01)), IST 210([41](#mnote01)), IST 220([31](#mnote01)), IST 230([31](#mnote01)), IST 240([31](#mnote01)) (Sem: 1-4)

STAT 200 GQ(4) (Sem: 3-6)

IST 495([11](#mnote01)) (Sem: 3-8)

IST 301([31](#mnote01)), IST 331([31](#mnote01)) (Sem: 5-8)

IST 440W([31](#mnote01)) (Sem: 7-8)

**ADDITIONAL COURSES** (10 credits)

ECON 002 GS(3), ECON 004 GS(3), or ECON 014 GS(3) (Sem: 1-4)

ENGL 202C GWS(3) or ENGL 202D GWS(3) (Sem: 1-4)

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

**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 6 credits of international courses in foreign culture from College-approved list (Sem: 5-8)

Select 3 credits [11\(#mnote01\)](#), at the 400 level in emerging issues and technologies from College-approved list (Sem: 5-8)

**REQUIREMENTS FOR THE OPTION:**21 credits

**INFORMATION SYSTEMS: DESIGN & DEVELOPMENT OPTION**21 credits

**PRESCRIBED COURSES** (3 credits)[11\(#mnote01\)](#)

IST 311(3) (Sem: 5-8)

**ADDITIONAL COURSES** (6 credits)[11\(#mnote01\)](#)

Select 6 credits from IST 411(3), IST 412(3), or IST 413(3) (Sem: 5-8)

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

Select 12 credits from College-approved list (Sem: 5-8)

**INFORMATION TECHNOLOGY: INTEGRATION & APPLICATION OPTION**21 credits

**PRESCRIBED COURSES** (9 credits)[11\(#mnote01\)](#)

IST 302(3), IST 420(3), IST 421(3) (Sem: 5-8)

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

Select 12 credits from College-approved list (Sem: 5-8)

**INFORMATION CONTEXT: PEOPLE, ORGANIZATIONS, AND SOCIETY OPTION**21 credits

**PRESCRIBED COURSES** (6 credits)[11\(#mnote01\)](#)

IST 431(3) and IST 432(3) (Sem: 5-8)

**ADDITIONAL COURSES** (3 credits)[11\(#mnote01\)](#)

IST 302(3) or IST 413(3) (Sem: 1-4)

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

Select 12 credits from College-approved list (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: Summer Session 2009

Blue Sheet Item #: 37-06-049

Review Date: 4/14/09

IS

## Kinesiology

*Berks College (KINBL)*

*University Park, College of Health and Human Development (KINES)*

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

PROFESSOR KARL M. NEWELL, *Head*

Kinesiology offers a comprehensive program of study in the science of human movement and is designed for students who want to prepare for professions involving physical activity and for graduate study in related areas. Five options are offered: (1) Athletic Training; (2) Fitness Studies; (3) Movement Science; (4) Physical & Health Education Teacher Education; and (5) Exercise Science. All options require a minimum of 120 credits for graduation, with the exception of Physical and Health Education Teacher Education, which requires 131 credits. Information about the major and its options can be found at <http://www.hhdev.psu.edu/kines/index.html> (<http://www.hhdev.psu.edu/kines/index.html>).

All options require a culminating practicum or research experience. First Aid, CPR, and Water Safety Instructor (WSI) certification are highly recommended for the Physical & Health Education Teacher Education Option. (See additional requirements for student teaching under General Information, Special Academic Programs.) Relocation away from the University Park campus is generally necessary for student teaching and may be necessary for practicums in other options. First Aid and CPR are also recommended for the Fitness Studies Option.

Students who have completed a minimum of 28 credits and have a 2.00 cumulative grade-point average are eligible for entrance into the major after completing an Entrance to Major form. Students who are interested in Athletic Training or Physical & Health Education Teacher Education must meet additional criteria in order to enter these options (see information on Athletic Training and Physical & Health Education Teacher Education Options).

**ATHLETIC TRAINING OPTION:**This option provides a concentrated program of courses designed to prepare students for a career in the profession of athletic training. The option has been designed to meet the standards for certification by the National Athletic Trainers Association - Board of Certification and legal certification by the Commonwealth of Pennsylvania.

Students are admitted into the program on a competitive basis following completion of prerequisite courses (see requirements for admission). Students must also meet the "Technical Standards for the Undergraduate Athletic Training Program at Penn State University" related to the physical and psycho-emotional demands placed upon students in the option. Upon admission, students complete a 5-semester sequence of coursework and supervised clinical rotations. Students typically commit 200 to 300 hours to clinical practical experiences in each of the last 4 semesters of the program. The Technical Standards course sequencing and prerequisite courses can be found at [http://www.hhdev.psu.edu/kines/undergrad/athletic\\_tr.html](http://www.hhdev.psu.edu/kines/undergrad/athletic_tr.html) ([http://www.hhdev.psu.edu/kines/undergrad/athletic\\_tr.html](http://www.hhdev.psu.edu/kines/undergrad/athletic_tr.html)) or obtained through the Department of Kinesiology. Full course descriptions are found in the University *Bulletin*.

Students seeking to transfer from other colleges or universities will have their transcripts evaluated after acceptance to Penn State to identify those courses and credits that will be applied to completion of degree requirements. Coursework specific to athletic training will not be considered for transfer unless completed in a Commission on Accreditation of Allied Health Education Programs accredited athletic training education program.

Minimum Requirements for Admission to the Athletic Training Option (admission is competitive--meeting minimum requirements does not assure admission into the option):

1. Submission of written application ([http://www.hhdev.psu.edu/kines/undergrad/athletic\\_tr.html](http://www.hhdev.psu.edu/kines/undergrad/athletic_tr.html) ([http://www.hhdev.psu.edu/kines/undergrad/athletic\\_tr.html](http://www.hhdev.psu.edu/kines/undergrad/athletic_tr.html))) or the Department of Kinesiology Advising Office, 276 Recreation Building, University Park, PA 16802).
2. Cumulative grade-point average of 2.5.
3. 3.0 grade-point average in KINES 135(3), KINES 202(4), KINES 231(3), KINES 233(3).
4. Completion of entrance interview with Athletic Training Program Director or designee.
5. Evidence of ability to meet the physical and psycho-emotional standards as outlined in the "Technical Standards for the Undergraduate Athletic Training Program at Penn State" ([http://www.hhdev.psu.edu/kines/undergrad/athletic\\_tr.html](http://www.hhdev.psu.edu/kines/undergrad/athletic_tr.html) ([http://www.hhdev.psu.edu/kines/undergrad/athletic\\_tr.html](http://www.hhdev.psu.edu/kines/undergrad/athletic_tr.html))) or the Department of Kinesiology Advising Office, 276 Recreation Building, University Park, PA 16802).

**FITNESS STUDIES OPTION:**This option provides interdisciplinary training to develop healthy living skills. Course work provides students with a knowledge base and practical skills to prepare them for careers in wellness professions, including corporate fitness, personal training, fitness management, youth and adult coaching, and community-based fitness programs. Students are encouraged to seek appropriate professional certification during the final two years of study, and may wish to consider a minor in the supporting fields of business, gerontology, nutrition, psychology, or sociology. After completion of this course of study, graduates will be able to design and implement skill and age-appropriate fitness programs, or pursue advanced study in related fields.

**MOVEMENT SCIENCE OPTION:**This option provides interdisciplinary training that utilizes movement for diagnosis, rehabilitation, and/or theoretical study. Course work is designed to help prepare graduates for a broad range of careers in biomedical and health-related fields. The option can also prepare

students for graduate studies in the health professions. Students may select supporting courses that will fulfill requirements for advanced study in scientific disciplines and a variety of professional areas such as physical therapy, cardiac rehabilitation, and physician's assistant.

**PHYSICAL & HEALTH EDUCATION TEACHER EDUCATION OPTION** This option is designed to prepare students to become licensed K-12 Health and Physical Education teachers. The licensure certifies them to teach elementary, middle or high school Health and Physical Education. The program includes all the academic requirements for the Instructional I Certificate in these fields issued by the Pennsylvania Department of Education. The entrance requirements for all University teacher preparation programs include:

1. A minimum cumulative grade-point average of 3.00.
2. An assessment of reading, writing, and mathematics.
3. ENGL 015 or ENGL 030.
4. 6 credits of quantification.
5. 3 credits of literature.
6. 48 credits minimum.
7. Completion of an Education Core: EDPSY 014(3) and EDTHP 115 US(3).
8. An early field experience, preferably in a diverse setting (one with at least 25 percent minority students); for KINES majors, KINES 295A(1).
9. 6 credits of required coursework in the teaching field: for KINES majors, KINES 141 US;IL(3) and KINES 180(3).
10. Documented evidence showing completion of at least 80 hours of paid or volunteer work in a setting with an age-appropriate population, including a minimum of 40 hours of work in each of two settings, one of which should involve students from an underrepresented group, or who are from rural or urban areas, but different from the candidate's own background.
11. Approval by the Teacher Preparation option coordinator.

**EXERCISE SCIENCE OPTION:** (offered only at the Penn State Berks) This option is a program of study in the science of exercise. This program offers Kinesiology background and applied experience in fitness assessment, exercise physiology, exercise psychology, motor skill development, nutrition and healthy living skills. Graduates will be able to scientifically assess fitness levels of individuals. Analyzing those assessments, graduates will then be capable of designing and implementing appropriate exercise programs.

Students in the Business Emphasis can obtain a Business Minor through this program. Students acquire basic business skills in accounting, marketing, management and entrepreneurial skills.

Students choosing the Science Emphasis will select courses from a department list that will enhance their opportunity for graduate studies in Kinesiology related fields, Physical Therapy and Medical schools.

The completion of the Exercise Science Option will enable graduates to compete for employment in the corporate fitness arena, private fitness clubs, community-based fitness organizations, hospital and university settings or possibly to operate their own health and fitness company.

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

**GENERAL EDUCATION:** 45 credits  
(15-21 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, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

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

**ELECTIVES:** 0-2 credits

**REQUIREMENTS FOR THE MAJOR:** 90-101 credits  
(This includes 15-21 credits of General Education courses: Athletic Training Option--6 credits of GQ courses; 9 credits of GN courses; 3 credits of GS courses; 3 credits of GHA courses. Fitness Studies Option--6 credits of GQ courses; 6-7 credits of GN courses; 3 credits of GS courses; 3 credits of GHA courses. Movement Science Option--9 credits of GN courses; 6 credits of GQ courses; 3 credits of GS courses; 3 credits of GHA courses. Physical & Health Education Teacher Education Option--6 credits of GN courses; 3 credits of GQ courses; 3 credits of GS courses; 3 credits of GHA courses. Exercise Science Option--6-7 credits of GN courses; 6 credits of GQ courses; 3 credits of GHA courses.

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

**PRESCRIBED COURSES** (31 credits) [1](#mnote01)  
BIOL 141 GN(3), KINES 141 US;IL(3), KINES 180(3) (Sem: 1-4)  
KINES 202(4), NUTR 251 GHA(3) (Sem: 3-4)  
KINES 321(3), KINES 345(3), KINES 350(3), KINES 360(3), KINES 384(3) (Sem: 3-6)

**REQUIREMENTS FOR THE OPTION:** 59-70 credits

**ATHLETIC TRAINING OPTION:** (64 credits)

**PRESCRIBED COURSES** (64 credits)  
MATH 022 GQ(3), CHEM 110 GN(3), CHEM 111 GN(1), KINES 135(3), PSYCH 100 GS(3) (Sem: 1-2)  
PHYS 250 GN(4), STAT 200 GQ(4) (Sem: 3-4)  
KINES 231(3) [1](#mnote01), KINES 233(3) [1](#mnote01) (Sem: 3)  
KINES 232(3) [1](#mnote01), KINES 334(3) [1](#mnote01) (Sem: 4)  
KINES 335(3) [1](#mnote01), KINES 395F(3) [1](#mnote01), KINES 434(3) [1](#mnote01) (Sem: 5)  
KINES 336(3) [1](#mnote01), KINES 395G(3) [1](#mnote01), KINES 435(3) [1](#mnote01), KINES 436(4) [1](#mnote01) (Sem: 6)  
KINES 395I(3) [1](#mnote01), KINES 438W(3) [1](#mnote01) (Sem: 7)  
KINES 495F(3) [1](#mnote01), (Sem: 8)

**FITNESS STUDIES OPTION** (61-62 credits)

**PRESCRIBED COURSES** (28 credits) [1](#mnote01)  
KINES 200(3), KINES 201(3), PSYCH 100 GS(3), STAT 200 GQ(4) (Sem: 3-6)  
KINES 295B(1), KINES 395B(1), KINES 456(4), KINES 457(3), KINES 495B(6) (Sem: 5-8)

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

- a. CHEM 101 GN(3) or CHEM 110 GN(3) and CHEM 111 GN(1) (Sem: 1-4)
- b. MATH 022 GQ(3) OR satisfactory performance on the MATH FTCAAP examination--i.e., placement beyond the level of MATH 022 (Sem: 1-4)
- c. KINES 492W(3) or KINES 481W(3) or KINES 439W(3) (Sem: 5-8)
- d. Life Fitness Skills (select 3 credits) KINES 001 GHA(1.5-3), KINES 004 GHA(1.5), KINES 005 GHA(1), KINES 006 GH(1.5), KINES 008 GHA(1.5), KINES 010 GHA(1.5), KINES 010A GHA(1.5), KINES 011 GHA(1), KINES 011A GHA(1), KINES 012 GHA(1), KINES 015(1), KINES 017 GHA(1.5), KINES 017S GHA(1.5), KINES 018 GHA(1.5), KINES 020 GHA(1.5), KINES 024 GHA(1.5), KINES 025 GHA(1.5), KINES 026 GHA(1.5), KINES 027 GHA(1.5), KINES 027S GHA(1.5), KINES 028 GHA(1.5), KINES 029 GHA(1-1.5), KINES 029A GHA(1.5), KINES 041 GHA(1.5), KINES 042 GHA(1.5), KINES 042A GHA(1.5), KINES 042B GHA(1.5), KINES 044 GHA(1-1.5), KINES 045 GHA(1.5), KINES 046 GHA(1-1.5), KINES 047 GHA(1.5), KINES 047A GHA(1.5), KINES 047B GHA(1.5), KINES 048 GHA(1.5), KINES 048AGHA(1.5), KIN 054 GHA(1.5), KINES 055 GHA(1.5), KINES 056 GHA(1.5), KINES 057 GHA(1.5), KINES 058 GHA(1.5), KINES 059 GHA(1.5), KINES 060(3), KINES 061 GHA(3), KIN 061S GHA(3), KINES 062 GHA(1.5), KINES 063 GHA(1.5), KINES 065 GHA(1.5), KINES 067 GHA(1.5), KINES 067S GHA(1.5), KINES 070 GHA(1.5), KINES 071 GHA(1.5), KINES 076 GHA(1.5), KINES 077 GHA(1.5), KINES 077A GHA(1.5), KINES 081 GHA(3), KINES 082 GHA(3), KINES 083 GHA(1.5), KINES 084 GHA(1.5-2) KINES 089 GHA(3), KINES 090 GHA(1-1.5), KINES 090A GHA(1.5), KINES 090B GHA(1.5), KINES 090C GHA(1.5), KINES 091A GHA(1.5), KINES 091B GHA(1.5), KII 091C GHA(1.5), KINES 091D GHA(1.5), KINES 092 GHA(1.5), KINES 093 GHA(1.5-12) (Sem: 3-8)
- e. Select an additional 12 credits from approved 400-level KINES courses: KINES 402(3), KINES 420(3), KINES 424 US(3), KINES 439W(3), KINES 440(3), KINES 441 US(3), KINES 442 IL(3), KINES 443 IL(3), KINES 444 US(3), KINES 446 IL(3), KINES 450(3), KINES 459(3), KINES 460(3), KINES 463(3), KINES 481W(3), KINES 483(3), KINES 484(3), KINES 485(3), KINES 488(3), KINES 492W(3), KINES 493(3) (Sem: 5-8)

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

Select 9 credits in University-wide offerings from an approved list, in consultation with advisor. (Sem: 1-8)

**MOVEMENT SCIENCE OPTION:(63 credits)****PRESCRIBED COURSES (36 credits)**[1](#mnote01)

BIOL 110 GN(4), BIOL 142(1), CHEM 110 GN(3), CHEM 111 GN(1), CHEM 112(3), CHEM 113(1), KINES 295B(1) (Sem: 1-4)  
 PHYS 250 GN(4), PHYS 251 GN(4), PSYCH 100 GS(3), STAT 200 GQ(4) (Sem: 3-6)  
 KINES 395B(1) (Sem: 5-8)  
 KINES 495B(6) (Sem: 7-8)

**ADDITIONAL COURSES (18 credits)**

a. MATH 026 GQ(3) OR satisfactory performance on the MATH FTCAP examination--i.e., placement beyond the level of MATH 026 (Sem: 1-4)  
 b. Select an additional 15 credits from approved 400-level KINES courses:

KINES 402(3), KINES 420(3), KINES 421(3), KINES 422(3), KINES 423(3), KINES 424 US(3), KINES 427(3), KINES 428(3), KINES 429(3), KINES 439W(3), KINES 440  
 KINES 441 US(3), KINES 442 IL(3), KINES 443 IL(3), KINES 444 US(3), KINES 446 IL(3), KINES 450(3), KINES 456(4), KINES 457(3), KINES 460(3), KINES 463(3), KIN  
 481W(3), KINES 483(3), KINES 484(3), KINES 485(3), KINES 488(3), KINES 492W(3), KINES 493(3) (Sem: 5-8)

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

Select 9 credits in University-wide offerings from an approved list, in consultation with advisor. (Sem: 1-8)

**PHYSICAL & HEALTH EDUCATION TEACHER EDUCATION OPTION:(70 credits)**[18](#mnote18)**PRESCRIBED COURSES (70 credits)**

C 1 280(3), CHEM 101 GN(3), EDPSY 010 GS(3), EDPSY 014(3), EDTHP 115 US(3), KINES 165(3), KINES 261(1), KINES 262(1), KINES 264(1), KINES 266(1), KINES  
 268(1), KINES 295A(1), MATH 022 GQ(3) (Sem: 1-4)  
 BB H 146 GHA(3), KINES 362(1.5), KINES 364(1.5), KINES 366(3), KINES 395A(1), KINES 400(3), KINES 445(3), KINES 464(3), KINES 466(2), KINES 468(3), KINES  
 469W(3), SPLED 400(4) (Sem: 5-8)  
 KINES 495A(12) (Sem: 8-9)

**EXERCISE SCIENCE OPTION:(59-60 credits)****PRESCRIBED COURSES (34 credits)**

STAT 200 GQ(4) (Sem: 1-2)  
 KINES 200(3)[1](#mnote01), KINES 201(3)[1](#mnote01), KINES 260(3)[1](#mnote01), KINES 295B(1)[1](#mnote01) (Sem: 3-4)  
 KINES 356(3)[1](#mnote01), KINES 358(1)[1](#mnote01) (Sem: 5-6)  
 KINES 420(3)[1](#mnote01), KINES 456(4)[1](#mnote01), KINES 457(3)[1](#mnote01), KINES 495C(6)[1](#mnote01) (Sem: 7-8)

**ADDITIONAL COURSES (9-10 credits)**

a. CHEM 101 GN(3) or CHEM 110 GN(3) and CHEM 111 GN(1) (Sem: 1-2)  
 b. MATH 022 GQ(3) or satisfactory performance on the MATH FTCAP examination--i.e., placement beyond the level of MATH 022 (Sem: 1-2)  
 c. Select 3 credits from KINES 001 GHA(1.5) to KINES 099(3) (Sem: 1-2)

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

Select 16 credits from one of the following emphasis area from an approved list, in consultation with advisor. At least 3 credits must be at the 400 level.

a. Business Emphasis (Sem: 1-8)  
 b. Science Emphasis (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.

[18] A grade of C or better per course is required for Physical & Health Education Teacher Education (PHETE).

Last Revised by the Department: Spring Semester 2010

Blue Sheet Item #: 38-01-026

Review Date: 8/25/09

UCA Revision #1: 8/8/06

HH

## Organizational Leadership

Abington College

Altoona College

Berks College

University College: 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 Shenango, Penn State Wilkes-Barre, Penn State Worthington Scranton  
 University Park, College of the Liberal Arts (OLEAD): offered via World Campus and Continuing Education

This program is restricted to adult learners, as defined by the University

PROFESSOR JOHN L SELZER, Head

The degree draws on many of the disciplines of the liberal arts to illuminate the issues that all leaders face regarding work and employment issues in the  
 21st Century. Students select courses in English, crime, law, and justice, economics, political science, sociology, labor and industrial relations,  
 communication arts and sciences, and psychology. The goal is to provide a broad education that introduces methods of analysis used in the disciplines of  
 the liberal arts and prepares students to understand the complex social, cultural, and organizational issues that they will confront in leadership positions in  
 the modern world. This degree program requires that students develop competency in four critical areas and then apply those skills in disciplinary  
 perspectives. All students are expected to develop proficiency in research methodology, critical analysis, communication skills, and the application of  
 theory. Students can expect to learn and practice skills that focus on understanding how organizations function both formally and informally and how  
 individuals function within organizations.

For the B.S. degree in Organizational Leadership, a minimum of 123 credits is required.

**GENERAL EDUCATION: 45 credits**

(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 REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

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

**ELECTIVES: 18 credits****REQUIREMENTS FOR THE MAJOR: 64 credits**[1](#mnote01)

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

**PRESCRIBED COURSES (25 credits)**

CAS 283(3), ECON 002 GS(3), ECON 004 GS(3), ENGL 215(3), PSYCH 281 GS(3), PSYCH 485(3), SOC 207(3), STAT 200 GQ(4) (Sem: 1-5)

**ADDITIONAL COURSES (39 credits)**

Select 39 credits:

Choose at least 12 credits in each of the 3 following areas.

Choose at least 15 credits at the 400 level.

**1. Employer and Employees**

LER 136 US(3), PHIL 010 GH(3), PHIL 103 GH(3), PSYCH 100 GS(3), SOC 035(3) (Sem: 1-6)  
HIST/LER 458W(3), PSYCH 484(3), SOC 456(3) (Sem: 5-8)

## 2. Law, Policy, and Organizations

CRIMJ 100(3), LER 100 GS(3), LER 201 GS(3), PL SC 001 GS(3) (Sem: 1-6)  
CRIM 113(3), CRIMJ 482(3), LER 424(3), LER 435(3), PL SC 490(3) (Sem: 5-8)

## 3. Workplace Dynamics

CAS 404(3), CAS 352(3), CAS 452(3), CAS 475(3), ECON 315 GS(3), ECON 342 GS(3), ENGL 419(3), LER 434(3), LER 472 GS(3), SOC 404(3), SOC 455(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: Spring Semester 2005

Blue Sheet Item #: 33-03-290

Review Date: 7/11/05

UCA Revision #1: 8/9/06

UCA Revision #2: 7/30/07

LA

## Professional Writing

*Berks College (PWRIT)*

The major is intended to prepare students to write effectively in a variety of workplace and academic settings. Methods of instruction draw upon the strategies and techniques of practicing writers outside of the University, including workshops, peer conferencing, collaborative writing, portfolio preparation, and internships. At the same time, theory courses provide the necessary background to help students understand and appreciate the larger issues surrounding the writing and reading of texts.

As a liberal arts degree, the Professional Writing major is appropriate for students who wish to develop a set of applied communication skills to prepare for a wide range of professional positions or for graduate or professional schools. The degree differs from most current English majors in at least three ways: 1) a practical orientation prepares graduates for employment, in addition to post-graduate English studies; 2) a multidisciplinary focus integrates courses from the liberal arts, business, and information technology; and 3) a required internship ensures that students actively apply their skills.

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

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

**GENERAL EDUCATION:** 45 credits

### 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)

### 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.)

**ELECTIVES:** 15 credits

**REQUIREMENTS FOR THE MAJOR:** 39 credits [1] (#mnote01)

### PRESCRIBED COURSES (15 credits)

ENGL 210(3) (Sem: 3-4)  
ENGL 471(3), CAS 283(3) (Sem: 5-6)  
ENGL 491(3), ENGL 495(3) (Sem: 5-8)

### ADDITIONAL COURSES (24 credits)

#### a. Creative Writing and Literature

Select 6 credits from the following or 6 credits in Creative Writing or Literature at the 200 level or higher approved by the Degree Coordinator:

ENGL 200(3), ENGL 212(3), ENGL 213(3), ENGL 221W(3), ENGL 222W(3), ENGL 231W(3), ENGL 232W(3), ENGL 400(3), ENGL 402(3), ENGL 403(3), ENGL 483(3) 3-4)

#### b. Rhetorical Theory

Select 3 credits from the following:

ENGL 472(3), ENGL 473(3), ENGL 474(3) (Sem: 5-8)

#### c. Professional Writing

Select 15 credits from the following:

CAS 214W(3), COMM 260W(3), ENGL 110(2-6), ENGL 215(3), ENGL 250(3), ENGL 415(3), ENGL 416(3), ENGL 417(3), ENGL 418(3), ENGL 419(3), ENGL 420(3) (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 2004

Blue Sheet Item #: 32-05-012

Review Date: 5/9/06

BK

## Science

*Abington College (SCIAB)*

*Altoona College (SCIAL)*

*Berks College (SCIBL)*

*Capital College (SCICA)*

*University College (SCICC): Penn State York*

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

*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 integrated undergraduate-graduate (IUG) degree program 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 three B.S. options offered: the Life Sciences option, the Mathematical Sciences option, or the Physical Sciences option. Not all of these options are available at all 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.

**TWO-YEAR PREPROFESSIONAL PREPARATION:**The first two years of the Science major (62 credits) can meet the preprofessional 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:

- (30 credits) The University's General Education requirements in the areas of Writing and Speaking (9), Health and Physical Activity (3), Arts (6), Humanities (6), and Social and Behavioral Sciences (6). (Note: Students will be required to take ECON 002 GS(3) and ECON 004 GS(3) in order to satisfy the Social and Behavioral Sciences requirement. The University's General Education requirements in the areas of Quantification and Natural Sciences will be satisfied by course work listed under heading "c".)
- 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.)
- (53-57 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 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), STAT 200 GQ(4); an additional life science course selected 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.
- (0-8 credits) Demonstration of second semester proficiency in a single foreign language.
- (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.)
- (4 credits) ACCTG 211(4)
- (4-22 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).

For the B.S. degree in Science, a minimum of 124 credits is required, with at least 15 credits at the 400 level.

*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):**29-37 credits

**PRESCRIBED COURSES** (20 credits)  
CHEM 110 GN(3)[\[1\]\(#mnote01\)](#), CHEM 111 GN(1), CHEM 112 GN(3), CHEM 113 GN(1), MATH 140 GQ[\[1\]\(#mnote01\)](#), MATH 141 GQ(4) (Sem: 1-2)  
BIOL 110 GN(4)[\[1\]\(#mnote01\)](#) (Sem: 1-4)

**ADDITIONAL COURSES** (3 credits)  
Select 3 credits from B M B 211(3), B M B 251(3), or MICRB 201(3) (Sem: 3-4)

**SUPPORTING COURSES AND RELATED AREAS**(6-14 credits)  
Select 6 credits of 400-level courses (Sem: 5-8)  
Select 0-8 credits in a foreign language (proficiency demonstrated by examination or course work to the level of the second semester; if fewer than 8 credits are needed to reach the required proficiency, students choose selections from program list to total 8 credits) (Sem: 1-8)

**REQUIREMENTS FOR THE OPTION:**57-65 credits

**GENERAL SCIENCE OPTION:**(57-65 credits)

**ADDITIONAL COURSES** (11-16 credits)  
Select 3-4 credits from CMPSC 101 GQ(3), MATH 230(4), MATH 250(3), or STAT 200 GQ(4) (Sem: 3-4)  
PHYS 211 GN(4)[\[1\]\(#mnote01\)](#), PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 GQ[\[1\]\(#mnote01\)](#), PHYS 251 GN(4) (Sem: 3-6)

**SUPPORTING COURSES AND RELATED AREAS**(41-54 credits)  
(A maximum of 12 credits of Independent Study [296, 496] may be applied toward credits for graduation.)  
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 [\[1\]\(#mnote01\)](#) at the 400 level [\[60\]\(#mnote60\)](#) (Sem: 3-8)  
Select 20-33 credits from program list (Students may apply 6 credits of ROTC.) (Sem: 1-8)

**LIFE SCIENCE OPTION:**(57-65 credits)

**ADDITIONAL COURSES** (21-27 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)  
CHEM 202(3), CHEM 203(3); or CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-6)  
PHYS 211 GN(4)[\[1\]\(#mnote01\)](#), PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 GQ[\[1\]\(#mnote01\)](#), PHYS 251 GN(4) (Sem: 3-6)

**SUPPORTING COURSES AND RELATED AREAS**(30-44 credits)  
(A maximum of 12 credits of Independent Study [296, 496] may be applied toward credits for graduation.)  
Select 9 credits [\[1\]\(#mnote01\)](#) of 400-level B M B, BIOL, BIOTC, or MICRB courses (Sem: 5-8)  
Select 21-35 credits from program list (Students may apply 6 credits of ROTC.) (Sem: 1-8)

**MATHEMATICAL SCIENCE OPTION**(57-65 credits)

**PRESCRIBED COURSES** (5 credits)

CMPS 122(3), MATH 220 GQ(2-3) (Sem: 3-6)

**ADDITIONAL COURSES** (21-26 credits)

CMPS 121 GQ(3), CMPS 201 GQ(3), or CMPS 202 GQ(3) (Sem: 3-6)

MATH 230(4) or MATH 251(4) (Sem: 3-6)

CMPS 360(3) or MATH 311W(3-4); STAT 301 GQ(3) or STAT 318(3) (Sem: 3-8)

PHYS 211 GN(4) [\[1\]\(#mnote01\)](#), PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 G [\[1\]\(#mnote01\)](#), PHYS 251 GN(4) (Sem: 3-8)

**SUPPORTING COURSES AND RELATED AREAS**(26-39 credits)

(A maximum of 12 credits of Independent Study [296, 496] may be applied toward credits for graduation.)

Select 9 credits [\[1\]\(#mnote01\)](#) of 400-level CMPS, CSE, MATH, or STAT courses (Sem: 5-8)

Select 17-30 credits from program list (Students may apply 6 credits of ROTC.) (Sem: 1-8)

**PHYSICAL SCIENCE OPTION**:(57-65 credits)

**PRESCRIBED COURSES** (15 credits)

ASTRO 291 GN(3), PHYS 211 GN([\[1\]\(#mnote01\)](#)), PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2) (Sem: 3-6)

**ADDITIONAL COURSES** (13-16 credits)

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 3-4 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**(26-37 credits)

(A maximum of 12 credits of Independent Study [296, 496] may be applied toward credits for graduation.)

Select 9 credits [\[1\]\(#mnote01\)](#) of 400-level ASTRO, CHEM, or PHYS courses (Sem: 5-8)

Select 17-28 credits from program list (Students may apply 6 credits of ROTC.) (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.

**[60]** Physical sciences include ASTRO, CHEM, PHYS; mathematical sciences include CMPS, MATH, STAT; life sciences include BIOL, BIOTC, B M B, MICRB.

Last Revised by the Department: Summer Session 2006

In charge professor updated by Publications: 4/30/09

Blue Sheet Item #: 34-06-352

Review Date: 4/11/06

UCA Revision #1: 9/1/06

UCA Revision #2: 7/730/07

SC

## Security and Risk Analysis

*Penn State Altoona*

*Penn State Berks*

*Penn State Harrisburg*

*University Park, College of Information Sciences and Technology (SRA)*

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

PROFESSOR HENRY C. FOLEY, *Program Coordinator*

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.

**SOCIAL FACTORS AND RISK** This option includes the legal, regulatory, ethical, and other theories associated with security and risk. Such an examination is focused on understanding the social factors and causes that are linked to transnational terrorism, investigations and litigation involved in business, and other security-related environments.

**Entrance Requirements:** To be eligible for entrance to the Security and Risk Analysis (SRA) major, students must:

1. be taking, or have taken, a program appropriate for entry to the major as shown in the *Bulletin*, including approximately 60 credits of course work.
2. have completed the following entrance-to-major requirements with grades of C or better in each: IST 110(3); SRA 111(3); and SRA 211(3). These courses must be completed by the end of the semester during which the entrance-to-major procedure is carried out.
3. 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.

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

(22 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:** 3 credits

**REQUIREMENTS FOR THE MAJOR:**94 credits

(This includes 22 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 4 credits of GN courses)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):**73 credits**PRESCRIBED COURSES** (43 credits)

CMPSC 101 GQ(3)[\[1\]\(#mnote01\)](#), SRA 111 GS(3)[\[1\]\(#mnote01\)](#) (Sem: 1-2)  
 IST 110 GS(3)[\[1\]\(#mnote01\)](#) (Sem: 1-3)  
 ACCTG 211(4) (Sem: 1-4)  
 MICRB 106 GN(3) and MICRB 107 GN(1) (Sem: 1-6)  
 SRA 211(3)[\[1\]\(#mnote01\)](#), SRA 221(3)[\[1\]\(#mnote01\)](#), SRA 231(3)[\[1\]\(#mnote01\)](#) (Sem: 2-4)  
 STAT 200 GQ(4) (Sem: 3-6)  
 IST 495(1)[\[1\]\(#mnote01\)](#) (Sem: 3-8)  
 IST 432(3)[\[1\]\(#mnote01\)](#), SRA 311(3)[\[1\]\(#mnote01\)](#), STAT 460(3) (Sem: 5-6)  
 IST 440W(3)[\[1\]\(#mnote01\)](#) (Sem: 7-8)

**ADDITIONAL COURSES** (12 credits)

AG BM 101 GS(3) or ECON 002 GS(3) (Sem: 1-4)  
 PL SC 001 GS(3), PL SC 014 GS:IL(3), or GEOG 040 GS:IL(3) (Sem: 1-4)  
 PSYCH 100 GS(3) or SOC 005 GS(3) (Sem: 1-6)  
 ENGL 202C GWS(3) or ENGL 202D GWS(3) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS**(18 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 6 credits of international courses from RL ST 001 GH(3), HIST 010 GH(3), or HIST 011 GH(3) (Sem: 5-8) or other courses approved by adviser.

**REQUIREMENTS FOR THE OPTION:**21 credits**INTELLIGENCE ANALYSIS AND MODELING OPTION**(21 credits)**PRESCRIBED COURSES** (12 credits)[\[1\]\(#mnote01\)](#)

CRIM 100 GS(3) or CRIMJ 100 GS(3) (Sem: 1-6)  
 ECON 302 GS(3) (Sem: 3-6)  
 ECON 402(3) (Sem: 5-8)  
 SRA 468(3) (Sem: 5-8)

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

Select 9 credits from College-approved list (Sem: 5-8)

**INFORMATION AND CYBER SECURITY OPTION:**(21 credits)**PRESCRIBED COURSES** (12 credits)[\[1\]\(#mnote01\)](#)

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 (Sem: 5-8)

**SOCIAL FACTORS AND RISK OPTION:**(21 credits)**PRESCRIBED COURSES** (12 credits)[\[1\]\(#mnote01\)](#)

INS 301(3) (Sem: 3-6)  
 IST 452(3), SRA 471(3), SRA 472(3) (Sem: 5-8)

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

Select 9 credits from College-approved list (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: Summer Session 2009

Blue Sheet Item #: 37-06-050

Review Date: 4/14/09

UCA Revision #1: 8/14/06

UCA Revision #2: 7/30/07

**Comments**(<http://www.psu.edu/bulletins/bluebook/contact> )

IS

## Theatre

*Berks College (THABL)*

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

PROFESSOR CLEO HOUSE, Jr.,*Penn State Berks*

PROFESSOR ANNETTE MCGREGOR,*Penn State University Park*

This program offers the theatre student a general background in the various facets of theatre. A broad liberal education is provided and complemented with advanced courses to best serve student interests, talents, and career objectives. Though a strong emphasis is given to the areas of production and performance, majors may also wish to emphasize an area of special interest such as literature, design or acting. Many students choose to spend a semester in study abroad.

Students learn to research, analyze and synthesize information. Majors develop strong oral and written skills and many go on to postgraduate study not only in theatre but in areas such as law, business and education.

Entrance criteria to this major include an audition or interview with members of the Theatre faculty.

For the B.A. degree in Theatre, a minimum of 120 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 REQUIREMENTS FOR THE MAJOR)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES**

(Included in REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 14 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](#mnote01)**

(See description of General Education in this bulletin.)

**PRESCRIBED COURSES (19 credits)**

THEA 001S(1), THEA 120(3), THEA 150(3), THEA 200(2), THEA 289(1) (Sem: 1-2)  
THEA 401W IL(3), THEA 410(3), THEA 434(3) (Sem: 5-8)

**ADDITIONAL COURSES (15 credits)**

Select 3 credits from THEA 100 GA;US;IL(3) or THEA 105 GA(3)  
Select 6 credits from THEA 405 IL(3), THEA 406 IL(3), THEA 407 US(3), THEA 408 US(3), THEA 412(3), THEA 455(3), or THEA 464(3) (Sem: 4-8)  
Select 3 credits from THEA 130(3) or THEA 131(3) (Sem: 3-4)  
Select 3 credits from CAMS 411W(3), ENGL 405(3), ENGL 438(3), ENGL 440(3), ENGL 444(3), ENGL 445(3), ENGL 454(3), ENGL 488(3) (Sem: 4-8)  
Note: Additional courses may be substituted on a case basis from upper division dramatic literature courses in modern languages.

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

Select 3 credits of any THEA course (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: Spring Semester 2010

Blue Sheet Item #: 38-01-008

Review Date: 8/25/09

AA

Revised in-charge information, Publications: 11/18/09

## Associate Degrees

### Agricultural Business

*Berks College*

*University Park, College of Agricultural Sciences (2 AGB)*

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

PROFESSOR JANELLE B. LARSON, *in charge, Berks College*

PROFESSOR JAMES W. DUNN, *Program Coordinator, College of Agricultural Sciences, Penn State University Park*

The Agricultural Business major helps prepare students for employment in commercial agriculture and businesses serving agriculture. Five options allow students to specialize in either Crop or Animal Production, Food Technology, Horticulture, or General Agribusiness Management, which provides training in management, business organization, and marketing.

The first two semesters are offered at selected locations, where students fulfill basic course requirements in accounting, business, English, and natural and social sciences. The second year at the University Park campus provides course work in livestock and crop production, food technology, horticulture, management, and agribusiness. Each option allows the student a choice of courses to satisfy special interests and needs. The Food Technology and Horticulture options can be completed at both University Park and at Penn State Berks, although some course substitutions may be necessary, as not all courses listed below are offered at both campuses.

For the Associate in Science degree in Agricultural Business, a minimum of 63 credits is required depending on the option chosen.

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

**GENERAL EDUCATION:21 credits**

(9 of these 21 credits are included in the REQUIREMENTS FOR THE MAJOR. Requirements for certain options also will fulfill other general education requirements.)

(See description of General Education in this bulletin.)

**ELECTIVES: 3-5 credits****REQUIREMENTS FOR THE MAJOR:45-48 credits**

(This includes 9 credits of General Education courses; 6 credits of GWS courses; 3 credits of GS courses.)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):16 credits****PRESCRIBED COURSES (13 credits)**

ENGL 015 GWS(3), CAS 100 GWS(3), ACCTG 211(4), AG BM 101 GS[1](#mnote01) (Sem: 1-4)

**ADDITIONAL COURSES (3 credits)**

AG BM 200(3)[1](#mnote01) or MGMT 301(3)[1](#mnote01) (Sem: 1-2)

**REQUIREMENTS FOR THE OPTION:29-32 credits****ANIMAL PRODUCTION OPTION:(31-32 credits)****PRESCRIBED COURSES (13 credits)**

AGRO 028(3), AN SC 201([1](#mnote01)), A S M 101(3), SOILS 101 GN(3) (Sem: 1-4)

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

B A 243(4) or B LAW 243(3) or AG 301W(3) or B A 241(2) and B A 242(2) (Sem: 3-4)  
AG BM 102(3) or AG BM 220(3) or MKTG 220(3) or MKTG 221(3) (Sem: 3-4)

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

Select 12 credits in animal science from AN SC 100(3), AN SC 207(2), AN SC 208(1), AN SC 301(3), AN SC 305(3), AN SC 306(3), AN SC 308(4), AN SC 309(4), SC 310(3), AN SC 311(4), AN SC 322(3), AN SC 324(3), and AN SC 327(3) (Note: some courses may have biology and/or chemistry prerequisites.) (Sem: 3-4)

**CROP PRODUCTION OPTION: (30-31 credits)****PRESCRIBED COURSES (12 credits)**

A S M 101(3), AGRO 028([1](#mnote01)), ENT 313(2) and ENT 316(1), SOILS 101 GN(3) (Sem: 3-4)

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

B A 243(4) or B LAW 243(3) or AG 301W(3) or B A 241(2) and B A 242(2) (Sem: 3-4)

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

Select 12 credits from agronomy, agroecosystems science, horticulture or turfgrass science. (Note: some may have biology and/or chemistry or other prerequisites.) (Sem: 3-4)

**FOOD OPTION: (29-30 credits)**

(Note: some courses may have biology and/or chemistry prerequisites.)

**PRESCRIBED COURSES (23 credits)**

CHEM 110 GN(3), CHEM 111 GN(1), MICRB 106 GN(3), MICRB 107 GN(1), FD SC 2[11(#mnote01)], FD SC 201(1), FD SC 205(3), FD SC 206(3), MIS 204(2), NUTR 251 GH(3) (Sem: 1-4)

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

AG BM 102(3) or AG BM 220(3) or MKTG 220(3) or MKTG 221(3) (Sem: 3-4)  
B A 243(4) or B LAW 243(3) or AG 301W(3) or B A 241(2) and B A 242(2) (Sem: 3-4)

**GENERAL OPTION:** (30-31 credits)

**PRESCRIBED COURSES** (15 credits)

AG BM 102(3), AG BM 106(3), AGRO 028(3), SOILS 101 GN(3), A S M 101(3) (Sem: 3-4)

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

B A 243(4) or B LAW 243(3) or AG 301W(3) or B A 241(2) and B A 242(2) (Sem: 3-4)  
AG BM 220(3)[11(#mnote01)] or MKTG 220(3)[11(#mnote01)], or MKTG 221(3) (Sem: 3-4)

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

Select 6 credits in agribusiness management or business (Sem: 3-4)  
Select 3 credits in agronomy, animal science, agroecosystems science, horticulture, or other courses in agriculture. (Sem: 3-4)

**HORTICULTURE OPTION:** (30-31 credits)

**PRESCRIBED COURSES** (9 credits)

HORT 101 GN(3)[11(#mnote01)], HORT 202(3), SOILS 101 GN(3) (Sem: 1-4)

**ADDITIONAL COURSES** (9-10 credits)

AG BM 102(3) or AG BM 220(3) or MKTG 220(3) or MKTG 221(3) (Sem: 3-4)  
HORT 137(3) or HORT 138(3) (Sem: 3-4)  
B A 243(4) or B LAW 243(3) or AG 301W(3) or B A 241(2) and B A 242(2) (Sem: 3-4)

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

Select 12 credits from horticulture, turfgrass science, agribusiness or business. (Note: some may have prerequisites.)

[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 2006

Blue Sheet Item #: 34-03-001

Review Date: 6/9/08

UCA Revision #1: 8/2/06

AG

## Business Administration

Abington College (2BAAB)

Altoona College (2BAAL)

Berks College (2BABL)

Capital College (2BACA)

University College (2BACC): Penn State Beaver, Penn State Brandywine, Penn State DuBois, Penn State Fayette, Penn State Greater Allegheny, 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 a foundation in business that, through two options, prepares graduates for either entrance to the Bachelor of Science in Business (BSB) programs 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.

The General Business Option provides an introductory foundation to core aspects of the business environment while also preparing students for future transfer into the Bachelor of Science in Business (BSB).

The Professional Studies Option provides a technically-oriented program that prepares students for direct entry into the work force. Because some of the course work in this option is not accepted in baccalaureate business programs, students are encouraged to work closely with faculty and staff advisers.

Students who plan to continue into BSB should meet with their advisers regarding entrance to major and other related requirements.

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.)

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

**PRESCRIBED COURSES** (13 credits)

CAS 100 GWS(3) (Sem: 2-4)  
ACCTG 211(4), ENGL 202D GWS([11(#mnote01)]), MIS 204(3) (Sem: 2-4)

**ADDITIONAL COURSES** (17-18 credits)

ENGL 015 GWS(3)[11(#mnote01)] or ENGL 030 GWS(3)[11(#mnote01)] (Sem: 1-2)  
MATH 021 GQ(3), MATH 022 GQ(3), or MATH 110 GQ(4) (Sem: [74](#mnote74))  
B A 243(4)[11(#mnote01)] or B A 241(2)[11(#mnote01)] and B A 242(2)[11(#mnote01)] (Sem: 1-4)  
ECON 002 GS(3) or ECON 004 GS(3) (Sem: 1-4)  
SCM 200 GQ(4) or STAT 200 GQ(4) (Sem: 2-4)

**REQUIREMENTS FOR THE OPTION:** 18-19 credits

(Both options may not be available at every campus.)

**GENERAL BUSINESS OPTION:** (18-19 credits)

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

a) Select 3 credits from MGMT 301(3)[11(#mnote01)] or MGMT 301W(3)[11(#mnote01)] (Sem: 3-4)  
b) Select 3 credits from MKTG 301(3)[11(#mnote01)] or MKTG 301W(3)[11(#mnote01)] (Sem: 3-4)  
c) Select 12-13 credits from B A 250(3); CAS 250(3) or CAS 252(3); LER 100 GS(3) or LER 136 US(3); ECON 002 GS(3) or ECON 004 GS(3); MATH 022 GQ(3), M 110 GQ(4), MKTG 220(3) (Sem: 1-4)

**PROFESSIONAL STUDIES OPTION:** (18 credits) [75](#mnote01)

**ADDITIONAL COURSES** (18 credits )

Select 18 credits from ACCTG 151(3), ACCTG 152(3), ACCTG 153(3), ACCTG 160(3), ACCTG 186(3), B A 100 GS(3), B A 250(3); ECON 002 GS(3) or ECON 004 GS(3);CMPSC 140(3), FIN 100(3), FIN 108(3), H P A 101(3), IST 110 GS(3), IST 210(3), IST 220(3), IST 250(3), LER 100 GS(3), LER 136 US(3); MGMT 100(3) or M 100W(3); MGMT 150(3), MIS 103(3), MIS 106(1-6), MIS 120(3); MIS 130(3), MIS 190(3), MKTG 220(3); MKTG 221(3) or MKTG 221W(3); R EST 100(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.

[74] Students should work closely with academic advisers to ensure the completion of any and all course work required for entrance to BSB.

[75] This Option is designed for students planning to enter the work force directly upon graduation. Some courses included in this option will not transfer into baccalaureate business programs. Students are encouraged to work closely with their advisers.

Last Revised by the Department: Fall Semester 2007

Blue Sheet Item #: 35-06-534

Review Date: 4/10/07

UCA Revision #1: 8/9/06

UCA Revision #2: 7/26/07

UC

## Electrical Engineering Technology

Altoona College

Berks College

Penn State Erie, The Behrend College

University College: Penn State Fayette, Penn State Hazleton, Penn State Wilkes-Barre, Penn State York (2 EET)

PROFESSOR SOHAIL ANWAR, Program Coordinator, Penn State Altoona

PROFESSOR DALE LITWHILER, Program Coordinator, Penn State Berks

PROFESSOR ROBERT WEISSBACH, Program Coordinator, Penn State Erie, The Behrend College

PROFESSOR ANDRZEJ GAPINSKI, Program Coordinator, Penn State Fayette

PROFESSOR KENNETH DUDECK, Program Coordinator, Penn State Hazleton

PROFESSOR ALBERT LOZANO, Program Coordinator, Penn State Wilkes-Barre

PROFESSOR MICHAEL MARCUS, Program Coordinator, Penn State York

PROFESSOR DHUSHY SATHIANATHAN, Head, School of Engineering Design, Technology, and Professional Programs, Penn State University Park

The Electrical Engineering Technology (2 EET) major helps prepare graduates for technical positions in the expanding fields of electronics, computers and microprocessors, instrumentation, and electrical equipment. The primary objective is to provide a broad foundation of theoretical and practical knowledge in the areas of electrical and electronic circuits, digital circuits, computers, electrical machinery, and programmable logic controls. The program also articulates with Pennsylvania Department of Education-approved Tech Prep programs. Secondary students who have graduated from a program covered by a signed Penn State Tech Prep Articulation Agreement may be eligible for special admission procedures and /or advanced placement. The major prepares graduates who, during the first few years of professional practice, will:

Demonstrate broad knowledge of electrical and electronics engineering technology practices to support design, application, installation, manufacturing, operation, and maintenance of electrical, electronic, computer, and instrumentation systems,

Apply basic mathematical and scientific principles for technical problem solving in areas that may include circuit analysis of both analog and digital electronics, microprocessors, programmable logic controls, and electrical machines,

Use computers and software in a technical environment,

Demonstrate competence in written and oral communication,

Work effectively as an individual and as a member of a multidisciplinary team,

Show awareness of social concerns and professional responsibilities in the workplace, and

Matriculate into a baccalaureate degree and/or continue their professional training and adapt to changes in the workplace, through additional formal or informal education.

Graduates of the Electrical Engineering Technology major may qualify for admission to the baccalaureate degree majors in Electrical Engineering Technology or Computer Engineering Technology offered at Penn State Harrisburg, Capital College; the baccalaureate degree major in Electrical Engineering Technology 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.

For the Associate in Engineering Technology degree in Electrical Engineering Technology, a minimum of 66 credits is required. This program is accredited by the Technology Accreditation Commission of ABET, Inc., 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: 410-347-7700, or [www.abet.org](http://www.abet.org).

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

**GENERAL EDUCATION:** 21 credits

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

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

**REQUIREMENTS FOR THE MAJOR:** 57 credits

(This includes 12 credits of General Education courses; 3 credits of GN courses; 3 credits of GQ courses; 6 credits of GWS courses.)

**PRESCRIBED COURSES** (38 credits)

EET 105(3), CMPET 117([11\(#mnote01\)](#)), CMPET 120(1); ENGL 015 GWS(3), MATH 022 GQ(3), MATH 026 GQ(3), MCH T 111(3), MCH T 112(1), MET 105(3) (S 1-2)

CAS 100 GWS(3), CMPET 211(3), EE T 114([11\(#mnote01\)](#)), EE T 118([11\(#mnote01\)](#)), EET 212W(4) (Sem: 3-4)

**ADDITIONAL COURSES** (19 credits)

EDSGN 100 (3) or EG T 119 (2) and EET 002S (1) (Sem: 1-2)

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

Select 13 additional credits from one of the following tracks **a** or **b**:

**a.** Students following the baccalaureate track must complete the following courses (10-11 credits):

EET 214 (3); MATH 083 GQ(4) or MATH 140 GQ(4); CHEM 110 GN (3) and CHEM 111 GN (1) or PHYS 151 GN(3) or PHYS 251 GN (4) (Sem: 3-4)

Select at least 3 additional credits from the following technical courses:

BET 201(5), BI SC 003 GN(3), CHEM 101 GN(3), CHEM 110 (3), CHEM 111 (1), CMPSC 101 GQ(3), CMPSC 201C GQ(3), EET 215 (1), EET 275 (3), EET 297 (1-9), EET 230 (3), IST 210 (4), IST 220(3), IST 221(3), MATH 141 GQ(4), TELECOM 140 (2) (Sem: 3-4)

**b.** Students following the general track must select at least 3 credits science from the following:

CHEM 110 GN(3) and CHEM 111 GN(1), PHYS 151 GN(3), PHYS 251 GN (4) (Sem: 3-4)

Select at least 10 additional credits from the following technical courses: BET 201 (5), BI SC 003 GN(3), CHEM 101 GN(3), CHEM 110 (3), CHEM 111 (1), CMPSC 101 GQ(3), CMPSC 201C GQ(3), EET 214 (3), EET 215 (1), EET 275 (3), EET 297 (1-9), EMET 230 (3), IST 210 (4), IST 220(3), MATH 083 GQ(4) or MATH 140 GQ (4), MATH 141 GQ(4), PHYS 151 GN(3) or PHYS 251 GN (4), TELECOM 140 (2) (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: Fall Semester 2008

Blue Sheet Item #: 36-03-017

Review Date: 11/27/07

UCA Revision #1: 8/3/06

UCA Revision #2: 7/27/07

[Comments\(http://www.psu.edu/bulletins/bluebook/contact \)](http://www.psu.edu/bulletins/bluebook/contact)

EN

## Hotel, Restaurant, and Institutional Management

*Berks College  
University Park, College of Health and Human Development (2HRIM)  
World Campus*

PROFESSOR JAMES A. BARDI, *Director, Penn State University Park*

The Hotel, Restaurant, and Institutional Management major is an intensive four-semester major designed to prepare students for managerial positions in the hospitality industry. The course of study places heavy reliance on experience acquired in an on-the-job setting.

Students who achieve outstanding records may, upon completing this program, apply for admission to the baccalaureate degree major in Hotel, Restaurant, and Institutional Management in the College of Health and Human Development. Six or more additional semesters of satisfactory work are required to earn the baccalaureate degree. Graduates of this major may qualify for admission to other baccalaureate degree majors.

For the Associate in Science degree in Hotel, Restaurant, and Institutional Management, a minimum of 64 credits is required.

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

**GENERAL EDUCATION:** 21 credits  
(6 of these 21 credits are included in REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 49-51 credits  
(This includes 6 credits of General Education GWS courses.)

**PRESCRIBED COURSES** (34 credits)  
D S M 101(3), ENGL 015 GWS([701(#mnote70)]), ENGL 202D GWS(3[701(#mnote70)]), HRIM 201(3[701(#mnote70)]), HRIM 250(3[11(#mnote01)]), HRIM 270(4[11(#mnote01)]), HRIM 295W(3), HRIM 305([701(#mnote70)]), HRIM 310(3[701(#mnote70)]), HRIM 319(3[701(#mnote70)]), HRIM 380(3[701(#mnote70)]). (Sem: 1-4)

**ADDITIONAL COURSES** (9-11 credits)  
HRIM 204(3) or MKTG 221([701(#mnote70)]) (Sem: 1-4)  
HRIM 260(4) or MGMT 341(3) (Sem: 1-4)  
ACCTG 211(4) or HRIM 335([701(#mnote70)]) (Sem: 1-4)

**SUPPORTING COURSES AND RELATED AREAS**(6 credits)  
Select 3 credits in nutrition (Sem: 1-4)  
Select 3 credits in consultation with adviser to develop more depth in hospitality management (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.

[70] These courses are required for the baccalaureate degree in Hotel, Restaurant, and Institutional Management.

Last Revised by the Department: Fall Semester 2007

Blue Sheet Item #: 35-06-451

Review Date: 4/10/07

HH

## Information Sciences and Technology

*Berks College  
Continuing Education  
University College: Penn State Beaver, Penn State DuBois, Penn State Fayette, Penn State Hazleton, 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 Park, College of Information Sciences and Technology (2 IST)  
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 MICHAEL D. McNEESE, *in charge*

This associate degree major is structured to prepare graduates for immediate and continuing employment opportunities in the broad disciplines of information science and technology. This includes positions such as application programmers, associate systems designers, network managers, Web designers and administrators, or information systems support specialists. Specifically, the major is designed to ensure a thorough knowledge of information systems and includes extensive practice using contemporary technologies in the creation, organization, storage, analysis, evaluation, communication, and transmission of information. The major fosters communications, interpersonal, and group interaction skills through appropriate collaborative and active learning projects and experiences. Technical material covers the structure of database systems, Web and multi-media systems, and considerations in the design of information systems. Team projects in most courses, a required internship, and a second-year capstone experience provide additional, focused venues for involving students in the cutting-edge issues and technologies in the field.

The Associate of Science in IST degree will be offered at multiple campuses within the Penn State system of colleges and campuses. Note that not all options will be available at all locations.

**Baccalaureate Option:** This option provides maximum articulation with the Baccalaureate Degree. Students who complete this option will meet all lower division requirements for the Baccalaureate Degree. This is not the case with the remaining options, although the degree of articulation is quite high for all Associate Degree Options.

**Generalized Business Option:** This option enables students to specialize in the general business areas of accounting, marketing, and management.

**Individualized Option:** This option enables students to work closely with an adviser to develop a plan of study that meets the dual objectives of allowing a flexible academic program and providing breadth of technical specialization. An example would be a program where a student would take some of the courses listed in the Web Administration Option and the remainder in the Software Option.

**Software Option:** This option prepares graduates for entry-level programming support positions in industry. Students take courses in Web programming, database programming, and other contemporary programming environments.

**Web Administration Option:** This prepares graduates for positions as Web administrators and Web programmers.

**Networking Option:** This option prepares graduates for positions as entry-level computer network administrators. Students take courses in personal computer hardware, networking essentials, and network administration.

**Data/Information Option:** This option prepares graduates for entry-level database support positions. Students take courses in relational database systems and database management.

**Industrial/Manufacturing Option:** This option prepares graduates for entry-level manufacturing information systems positions. Students take courses in electrical and mechanical systems, and business and industrial processes.

**Telecommunications Option:** This option prepares graduates for entry-level positions in the telecommunications industry. Students take courses in voice and data communications, protocols, networks, and wireless systems.

For the Associate in Science degree in IST, a minimum of 60 credits is required.

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

**GENERAL EDUCATION:** 21 credits  
(9-12 of these 21 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See the description of General Education in this bulletin.)

**ELECTIVES:** 2-6 credits

**REQUIREMENTS FOR THE MAJOR:** 45-47 credits

(This includes 9-12 credits of General Education courses, i.e., ALL options: 3 credits of GQ courses; 6 credits of GWS courses. The Baccalaureate Option also includes 3 credits of GS courses to equal a total of 12 credits that double count; the General Business Option also includes 0-3 credits of GS courses to equal 9-12 credits that double count.)

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

**PRESCRIBED COURSES** (26 credits)

CMPSC 101 GQ(3) [11\(#mnote01\)](#) (Sem: 1-2)

CAS 100B GWS(3), IST 110 GS([11\(#mnote01\)](#)), IST 111S(1), IST 210([11\(#mnote01\)](#)), IST 220(3) [11\(#mnote01\)](#), IST 250(3), ENGL 015 GWS(3) (Sem: 1-2)  
IST 260W(3) (Sem: 3-4)

**ADDITIONAL COURSES** (4 credits)

ENGL 202C GWS(3) or ENGL 202D GWS(3) (Sem: 3-4)

IST 295A(1) or IST 295B(1) (Sem: 3-4)

**REQUIREMENTS FOR THE OPTION:** 15-18 credits

**BACCALAUREATE OPTION:** (17-18 credits)

**PRESCRIBED COURSES** (13 credits)

IST 230(3) and IST 240(3) (Sem: 3-4)

ECON 002 GS(3) (Sem: 3-4)

STAT 200 GQ(4) (Sem: 3-4)

**ADDITIONAL COURSES** (4 credits)

MATH 110 GQ(4) or MATH 140 GQ(4) (Sem: 1-2)

**GENERALIZED BUSINESS OPTION:** (15-16 credits)

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

Select 15 credits in consultation with the adviser from the following list: (Sem: 1-4)

ACCTG 151(3), ACCTG 152(3), ACCTG 153(3), ACCTG 160(3), ACCTG 170(3), ACCTG 186(3), ACCTG 211(4), B A 250(3), MKTG 220(3), MKTG 221(3), MKTG 3

MKTG 327(3), MGMT 100(3), MGMT 150(3), MGMT 321(3), MGMT 341(3)

ECON 002 GS(3), ECON 004 GS(3), or ECON 014 GS(3)

MATH 017 GQ(3), MATH 021 GQ(3), MATH 022 GQ(3), or MATH 026 GQ(3)

**INDIVIDUALIZED OPTION:** (15 credits)

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

Select 15 credits in consultation with an adviser that follow a coherent theme in information sciences and technology. (Sem: 1-4)

**SOFTWARE OPTION:** (15 credits)

**PRESCRIBED COURSES** (12 credits)

CMPSC 302(3) (Sem: 2-4)

IST 211(3), IST 247(3), and IST 256(3) (Sem: 3-4)

**ADDITIONAL COURSES** (3 credits)

MATH 017 GQ(3), MATH 021 GQ(3), MATH 022 GQ(3), or MATH 026 GQ(3) (Sem: 1-2)

**NETWORKING OPTION:** (15 credits)

**PRESCRIBED COURSES** (12 credits)

IST 225(3), IST 226(3), IST 227(3), and IST 228(3) (Sem: 3-4)

**ADDITIONAL COURSES** (3 credits)

MATH 017 GQ(3), MATH 021 GQ(3), MATH 022 GQ(3), or MATH 026 GQ(3) (Sem: 1-2)

**WEB ADMINISTRATION OPTION:** (15 credits)

**PRESCRIBED COURSES** (12 credits)

IST 255(3), IST 256(3), IST 257(3), and IST 258(3) (Sem: 3-4)

**ADDITIONAL COURSES** (3 credits)

MATH 017 GQ(3), MATH 021 GQ(3), MATH 022 GQ(3), or MATH 026 GQ(3) (Sem: 1-2)

**MANUFACTURING OPTION:** (16 credits)

**PRESCRIBED COURSES** (12 credits)

IST 271(3), IST 272(3), IST 273(3), and IST 274(3) (Sem: 3-4)

**ADDITIONAL COURSES** (4 credits)

MATH 110(4) or MATH 140(4) (Sem: 1-2)

**TELECOMMUNICATIONS OPTION:** (15 credits)

**PRESCRIBED COURSES** (12 credits)

IST 221(3), IST 222(3), IST 223(3), and IST 224(3) (Sem: 3-4)

**ADDITIONAL COURSES** (3 credits)

MATH 017 GQ(3), MATH 021 GQ(3), MATH 022 GQ(3), or MATH 026 GQ(3) (Sem: 1-2)

**DATA/INFORMATION OPTION:** (15 credits)

**PRESCRIBED COURSES** (12 credits)

IST 211(3), IST 212(3), IST 213(3), and IST 214(3) (Sem: 3-4)

**ADDITIONAL COURSES** (3 credits)

MATH 017 GQ(3), MATH 021 GQ(3), MATH 022 GQ(3), or MATH 026 GQ(3) (Sem: 1-2)

[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 2003

Blue Sheet Item #: 31-04-085

Review Date: 10/6/05

## Letters, Arts, and Sciences

*Abington College (2LAAB)*

*Altoona College (2LAAL)*

*Penn State Erie, The Behrend College (2LABC)*

*Berks College (2LABL)*

*Capital College (2LACA)*

*University College (2LACC): Penn State Beaver, Penn State Brandywine, Penn State DuBois, Penn State Fayette, Penn State Hazleton, Penn State Mont Alto, Penn State Greater Allegheny, Penn State Lehigh Valley, Penn State New Kensington, Penn State Schuylkill (2LACA), Penn State Shenango Valley, Penn State Wilkes-Barre, Penn State Worthington-Scranton, Penn State York*

*University Park, College of the Liberal Arts (2 LAS)*

*World Campus*

ASSOCIATE DEAN JOHN L. SELZER, *in charge, Penn State University Park*

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.

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 #11(#mnote01)  
(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 COURSE** (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: Summer Session 1988

Blue Sheet Item #: 16-10-044

Review Date: 10/8/02

Reviewed by Publications: 06/23/06

LA

## Mechanical Engineering Technology

*Altoona College*

*Berks College*

*Penn State Erie, The Behrend College*

*University College: Penn State DuBois, Penn State Hazleton, Penn State New Kensington, Penn State York (2 MET)*

PROFESSOR BRUCE MULLER, *Program Coordinator, Penn State Altoona*

PROFESSOR BARBARA MIZDALL, *Program Coordinator, Penn State Berks*

PROFESSOR DAVID JOHNSON, *Program Coordinator, Penn State Erie, The Behrend College*

PROFESSOR SOMNATH CHATTOPADHYAY, *Program Coordinator, Penn State DuBois*

PROFESSOR WIESLAW GREBSKI, *System-wide Program Coordinator, Penn State Hazleton*

PROFESSOR JOAN KOWALSKI, *Program Coordinator, Penn State New Kensington*

PROFESSOR DANIEL STYDUHAR, *Program Coordinator, Penn State Shenango*

PROFESSOR MARSHALL COYLE, *Program Coordinator, Penn State York*

PROFESSOR DHUSHY SATHIANATHAN, *Head, School of Engineering Design, Technology, and Professional Programs, Penn State University Park*

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. This program also articulates with Pennsylvania Department of Education-approved Tech Prep programs. Secondary students who have graduated from a program covered by a signed Penn State Tech Prep Articulation Agreement may be eligible for special admission procedures and/or advanced placement. Graduates of the Associate Degree Mechanical Engineering Technology program will:

- Have a broad knowledge in the areas of applied design, manufacturing, testing, evaluation, and technical sales, 2D and 3D modeling.
- Have the ability to enter a Baccalaureate Mechanical Engineering Technology or related Engineering Technology program.
- Be prepared to communicate effectively and work collaboratively in multi-disciplinary teams.
- Be able to 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.

For the Associate in Engineering Technology degree in Mechanical Engineering Technology, a minimum of 64 credits is required. This program is accredited by the Technology Accreditation Commission of ABET, Inc., 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: 410-347-7700, or [www.abet.org](http://www.abet.org).

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

**GENERAL EDUCATION:** 21 credits  
(12 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:** 55-57 credits  
(This includes 12 credits of General Education courses: 3 credits of GN courses; 3 credits of GQ courses; 6 credits of GWS courses.)

**PRESCRIBED COURSES** (31 credits)  
ENGL 015 GWS(3), CAS 100 GWS(3), CMPET 117(3), CMPET 120(1), MCH T 111([#mnote01](#)) (Sem: 1-2)  
EG T 114(2), IET 215(2), IET 216(2), MCH T 213(3), MET 211([#mnote01](#)), MET 210W(3), PHYS 151 GN(3) (Sem: 3-4)

**ADDITIONAL COURSES** (24-26 credits)  
EDSGN 100(3) or EG T 120(3) (Sem: 1-2)  
MATH 026 GQ(3) or MATH 081 GQ(3) (Sem: 1-2)  
EET 100(3) or EET 105(3) (Sem: 1-2)  
IET 101([311\(#mnote01\)](#)) or MET 105 ([311\(#mnote01\)](#)) (Sem: 1-2)  
MATH 022(3) or MATH 082 GQ(3) (Sem: 1-2)  
MCH T 112(1) or MCH T 214(1) (Sem: 1-2)

Select 8-10 credits from one of the following tracks a, b, or c:

**a) General Track**

AE T 297(1-9), CHEM 101 GN(3), CHEM 110 GN(3), CHEM 111 GN(1), CMPSC 101 GQ(3), EET 100(3), EET 114(4), EET 118(1), EG T 297(1-9), IET 105(2), IET 114(4), IET 297(1-9), MET 281(4), SUR 111(3), or select 3 credits in consultation with an advisor from 200-level MET courses (Sem: 3-4)  
IST 110 GS(3), IST 210(4), IST 220(3), IST 250(3), MATH 140 GQ(4), STAT 200 GQ(4), MATH 083 GQ(4), PHYS 150 GN(3), EG T 201(2) (Sem: 3-4)

**b) CAD/IST Track**

EG T 201(2) (Sem: 3-4)  
IST 210(4) or IST 220(3) or IST 250 (3) (Sem: 3-4)  
Select 3 credits in consultation with an advisor from 200-level MET courses (Sem: 3-4)

**c) Baccalaureate Degree Track**

MATH 140 GQ(4), STAT 200 GQ(4), CHEM 110 GN(3), EET 114(4), EG T 201(2) (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: Fall Semester 2008

Blue Sheet Item #: 36-03-019

Review Date: 11/27/07

UCA Revision #1: 8/3/06  
UCA Revision #2: 7/30/07

[Comments\(http://www.psu.edu/bulletins/bluebook/contact \)](http://www.psu.edu/bulletins/bluebook/contact)

EN

## Occupational Therapy

*Berks College (2OTBL)  
University College (2OTCC): Penn State DuBois, Penn State Mont Alto*

This major helps graduates prepare to be occupational therapy assistants who are qualified to be employed by agencies that provide occupational therapy and related services. The goal of occupational therapy is to enable the client to be as independent as possible in the daily performance of self-care, productive, and leisure occupations. General education, basic science, and occupational therapy courses are followed by supervised field experience. Upon successful graduation from the program, students must sit for and successfully pass the NBCOT national certification examination to practice. Most states also require licensure as a condition for employment. A felony conviction may affect a graduate's ability to sit for the NBCOT certification examination and obtain licensure. NBCOT may be contacted at NBCOT, 800 South Frederick Street, Gaithersburg, MD 20877. 301-990-7979 or on the Web at [www.NBCOT.org](http://www.NBCOT.org).

To enter this major, students must have a high school diploma or its equivalent. To be admitted to degree candidacy, the applicant must have completed educational background requirements called Carnegie Units or Secondary School Units. Students are responsible for proof of liability insurance and other requirements specified by the facility providing supervised field experience.

The size of each entering class is limited so that optimal clinical experiences and practical application situations can be maintained. Students enter the program only during the fall semester and are expected to progress through the program in the prescribed manner. Fieldwork affiliations are maintained over a wide geographical area. Students may be required to make special housing and transportation arrangements during the fieldwork phase. Students must complete all Level II fieldwork within eighteen months of successful completion of OTA didactic course work.

The Penn State Occupational Therapy program is fully accredited by ACOTE which can be reached at: Accreditation Council for Occupational Therapy Education, P. O. Box 31220, Bethesda, MD 20824-1220, telephone number 301-652-2682.

For the Associate in Science degree in Occupational Therapy, a minimum of 64 credits is required.

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

**GENERAL EDUCATION:** 21 credits  
(12 of these 21 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 55 credits  
(This includes 12 credits of General Education courses: 3 credits of GWS courses; 6 credits of GS courses; 3 credits of GN courses.)

**PRESCRIBED COURSES** (55 credits)

BIOL 129 GN(4[11(#mnote01)], BIOL 141 GN(3[11(#mnote01)], BIOL 142 (1[11(#mnote01)], ENGL 015 GWS(3), HD FS 129 GS(3), O T 100(1), O T 101(3[11(#mnote01)], PSYCH 100 GS(3) (Sem: 1-2)  
 O T 103 US(3[11(#mnote01)], O T 105W(3[11(#mnote01)], O T 107(3[11(#mnote01)], (Sem: 2-3)  
 KINES 013 GHA(1), O T 202([11(#mnote01)], O T 204(3[11(#mnote01)], O T 206(3[11(#mnote01)], PSYCH 243 GS(3) (Sem: 3-4)  
 O T 295A(6[11(#mnote01)], O T 295B(6[11(#mnote01)], (Sem: 4-5)

[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 2004

Blue Sheet Item #: 32-04-022

Review Date: 5/4/04

UCA Revision #1: 8/9/06

## Minors

### Business Minor

Abington College (BSBAB)

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 Mont Alto, Penn State New Kensington, Penn State Schuylkill, Penn State Shenango, Penn State Wilkes-Barre, Penn State Worthington Scranton, Penn State York

This interdisciplinary minor provides students with a business-oriented supplement to their academic major. It is designed to introduce students to a variety of fundamental business skills and knowledge. The minor consists of 22-23 credits, at least 6 credits of which must be at the 400 level. Only courses in which students earn a grade of C or better may be counted toward fulfillment of the requirements for the minor.

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

**REQUIREMENTS FOR THE MINOR:**22-23 credits

**PRESCRIBED COURSES:** (10 credits)

ACCTG 211(4) (Sem: 1-5)

MGMT 301(3), MKTG 301(3) (Sem: 5-8)

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

Select 3 credits from ECON 002 GS(3) or ECON 004 GS(3) (Sem: 1-5)

Select 3-4 credits from B A 241(2) and B A 242(2) or B A 243(4); MIS 204(3), SCM 200 GQ(4) or STAT 200 GQ(4) (Sem: 1-5)

FIN 301(3), I B 303(3), SCM 301(3) (Sem: 5-8)

**Note:** A student who receives credits for B A 243 may not receive credit for either B A 241 or B A 242.

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

Select 6 credits at the 400 level in consultation with your adviser and the approval of the director of the business minor (Sem: 5-8)

Last Revised by the Department: Summer Session 2008

Blue Sheet Item #: 36-01-057

Review Date: 8/28/07

UCA Revision #1: 8/3/06

**Comments**(<http://www.psu.edu/bulletins/bluebook/contact> )

AB/BK/UC

### Communication Arts and Sciences Minor

Abington College (CASAB)

Berks College (CASBL)

University College (CASCC): Penn State Brandywine, Penn State York

University Park, College of the Liberal Arts (CAS)

PROFESSOR JAMES DILLARD, *Head*

This minor provides understanding and practice in the ways humans achieve their personal and career goals by means of communication. Students may choose any of the department's pathways of specialization, such as Interpersonal, Family, Intercultural, Organizational, Legal, Political Communication and Presentation Skills, Communication and Technology, or Rhetoric. For example, Legal Communication focuses on communication within the legal system, and provides students with the theory and skills to understand the uses, evaluation, and structure of public policy and legal disputes. Students learn how perception, meaning, and conflict function in human communication if they choose to specialize in Interpersonal Communication, while Organizational Communication critically examines leadership, decision-making, interviewing, and teamwork in formal organizations. In coordination with an adviser, a student of any major may tailor this minor to complement his or her educational and career goals by pursuing a particular pathway.

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** (6 credits)

Select 3 credits from CAS 203(3), CAS 205(3), CAS 211(3), CAS 213(3), CAS 214W(3), CAS 215(3), CAS 250(3), CAS 252(3), CAS 271 US:IL(3), CAS 280W(3), or 283(3) (Sem: 3-6)

Select 3 credits from CAS 200(3), CAS 201 GH(3), or CAS 202(3) (Sem: 3-8)

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

Select 6 credits of Communication Arts and Sciences courses (Sem: 1-8)

Select 6 credits of Communication Arts and Sciences courses at the 400 level (Sem: 1-8)

**Note:** CAS 100 GWS(3), CAS 126(3), or CAS 195(1) may not be counted as part of the minor.

Last Revised by the Department: Fall Semester 2002

Blue Sheet Item #: 30-07-104

Review Date: 2/25/05

LA

### Engineering Entrepreneurship Minor

Berks College

University Park, College of Engineering (ESHIP)

PROFESSOR DHUSHY SATHIANATHAN, *Interim Head, School of Engineering Design, Technology, and Professional Programs*

This interdisciplinary minor supports technology entrepreneurship development for all students, especially those majoring in engineering, business, and IST (Information Sciences and Technology). All segments of the U.S. and world economy are integrated with technology. The Engineering Entrepreneurship Minor addresses this new reality. Engineering graduates should have more business finance, marketing, and intellectual property knowledge, and business and IST students interested in technology enterprises should have a working knowledge of the engineering design process, basic engineering principles, graphics, and computer-aided design. All students should have solid skills in teamwork, leadership, and innovation in order to conceive, produce and promote creative product designs and solutions. Courses in the minor use problem-based learning, including business case studies and new product concept prototyping. Core courses include business plan presentations and competitions and open-ended design problems. The minor consists of 18 semester hours.

A grade of C or better is required in all classes used to meet the requirements of the minor. For admission to the minor, students must have completed ENGR 310(3) Entrepreneurial Leadership.

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

**REQUIREMENTS FOR THE MINOR:**18 credits

**PRESCRIBED COURSES** (9 credits)

ENGR 310(3) (Sem: 4-6)

ENGR 407(3) (Sem: 5-7)

ENTR 430(3) (Sem: 6-8)

**ADDITIONAL COURSES** (3 credits)

Select one course from the list below:

ENGR 411(3) for non-business students (Sem: 5-7)

QMM 492(3) for non-engineering students (Sem: 5-7)

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

Select 6 credits from approved department list or in consultation with the coordinator of the Engineering Entrepreneurship Minor (Sem: 5-8)

Last Revised by the Department: Summer Session 2002

Blue Sheet Item #: 30-04-082

Review Date: 01/15/02

EN

## Global Studies Minor

*Berks College (GLBST)*

The minor in Global Studies is intended to prepare students from all degree programs within the Berks College (with the exception of the major in Global Studies) to gain a global perspective, which would be useful in a variety of workplace and academic settings. HIST 320W, PL SC 014, and CAS 271 provide the necessary background to help students understand and appreciate broad issues of international concern. A combination of more specific option courses will deepen students' experience of the world and enhance analytical and interpersonal skills. Eighteen credits are required for the minor in Global Studies. All students taking this minor will be required to show a 12-credit-level proficiency in a foreign language.

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:**18-30 credits

**ADDITIONAL COURSES** (18-30 credits)

Select 6 credits from CAS 271 US;IL(3), HIST 320W(3), PL SC 014 GS(3) (Sem: 1-6)

Select 12 credits from the following list; at least 6 credits must be at the 400 level:

FR 139 GH;IL(3), GER 100 GH;IL(3), RUS 100 GH;IL(3), SPAN 100(3), SPAN 130 GH;IL(3), SPAN 131 GH;IL(3) or SPAN 131W GH;US;IL(3), SPAN 132 IL(3), UKR 100 GH;IL(3) (Sem: 1-4)

HIST 179 GH;IL(3), HIST 181 GH;IL(3), HIST 192 GH;IL(3), HIST 467(3), HIST 468(3) (Sem: 1-6)

ENGL 403(3), HIST 488(3), PL SC 412(3) (Sem: 3-6)

HIST 120 GS(3), HIST 175 GH;IL(3), PL SC 413(3), PL SC 454 IL(3) (Sem: 3-8)

HIST 435(3), PL SC 424(3), PL SC 487(3), SPAN 200(3), SPAN 220(3), SPAN 253(3), SPAN 300(3), SPAN 420(3), SPAN 476(3) (Sem: 5-8)

**Foreign Language Requirement:** Proficiency in a single foreign language must be demonstrated by either examination or coursework equivalent to completion of 12 credits of coursework. See the ADMISSION section of the General Information in this Bulletin for the Placement Policy for Penn State Foreign Language Courses (under Opportunities for Credit by Acquisition) (0-12) (Sem: 1-8)

Last Revised by the Department: Fall Semester 2004

Blue Sheet Item #: 32-05-011

Review Date: 10/11/04

UCA Revision #2: 7/27/07

BK

## Information Sciences and Technology Minor

Abington College

Berks College

Capital College

University College: Penn State Beaver, Penn State Brandywine, Penn State Greater Allegheny, Penn State Hazleton, Penn State Lehigh Valley, Penn State New Kensington, Penn State Schuylkill, Penn State Wilkes-Barre, Penn State Worthington Scranton, Penn State York  
University Park, College of Information Sciences and Technology (IST)

This minor is structured to provide students with the theoretical frameworks and skill sets necessary to compete and be productive in the information technology-intensive global context that defines the new "Information Age." Specifically, the minor will be focused on a program that will build an understanding of core information technologies and related areas of study; will prepare students for the practical application of various information sciences and related technologies; and engage students in sharpening their abilities to think critically and to work in teams. All this will be done with the intent to expose students to the cognitive, social, institutional, and global environments of Information Sciences and Technology and to then apply that knowledge as a supplement to their major. A one-time tuition surcharge will be applied to all students enrolled in the minor.

A grade of C or better is required for all courses in this minor.

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

**REQUIREMENTS FOR THE MINOR:**19 credits

**PRESCRIBED COURSES** (10 credits)

IST 110 GS(3), IST 210(4), IST 220(3) (Sem 1-6)

**ADDITIONAL COURSES** (9 credits)

Select 3 credits from IST 250(3), IST 301(3), or IST 302(3) (Sem 5-8)

Select 6 credits from IST 402(3), IST 431(3), or IST 432(3) (Sem 5-8)

Last Revised by the Department: Spring Semester 2004

Blue Sheet Item #: 32-01-075

Review Date: 10/6/05

IS

## Natural Science Minor

*Altoona College (NTSAL)*

*Berks College (NTSBL):*

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

PROFESSOR ROBERT B. MITCHELL *in charge*

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 [\[62\]](#) [\(#mnote62\)](#))

Select 3-4 credits from ASTRO 001 GN(3), ASTRO 010 GN(2) and ASTRO 011 GN(1), B M B 001 GN(3), BI SC 001 GN(3), BI SC 002 GN(3), BI SC 003 GN(3), BI SC GN(4), CHEM 001 GN(3), CHEM 003 GN(3), MICRB 106 GN(3) and MICRB 107 GN(1), PHYS 001 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 011 GN(3) and BIOL 012 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 BI SC 001 GN(3) or BI SC 002 GN(3) along with credit for BIOL 011 GN(3) and BIOL 012 GN(1), or BIOL 110 GN(4); CHEM 001 GN(3) or CHEM 003 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 001 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

## Professional Writing Minor

*Berks College (PWRT)*

*University College, Penn State Hazleton*

The minor in Professional Writing is intended to prepare students from all degree programs within the Berks College (with the exception of the major in Professional Writing) to write effectively in a variety of workplace and academic settings. Theory courses provide the necessary background to help students understand and appreciate the larger issues surrounding the writing and reading of texts. At the same time, practice-oriented courses draw upon the strategies and techniques of practicing writers outside and inside of the University, including workshops, peer conferencing, collaborative writing, portfolio preparation, and internships.

Students may not count courses used to satisfy General Education Writing/Speaking 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** (3 credits)

ENGL 210(3) (Sem: 3-6)

**ADDITIONAL COURSES** (15 credits)

Select 15 credits from the following:

CAS 214W(3), COMM 260W(3), ENGL 110(2-6), ENGL 215(3), ENGL 250(3), ENGL 415(3), ENGL 416(3), ENGL 417(3), ENGL 420(3), ENGL 421(3) (Sem: 3-8)

ENGL 471(3) (Sem: 5-6)

ENGL 418(3), ENGL 419(3), ENGL 472(3), ENGL 473(3) (Sem: 5-8)

Last Revised by the Department: Fall Semester 2004

Blue Sheet Item #: 32-05-013

Review Date: 4/16/09

BK

## Security and Risk Analysis Minor

*Penn State Berks*

*University College: Penn State Beaver, Penn State New Kensington, Penn State Worthington Scranton*

*University Park, College of Information Sciences and Technology (SRA)*

The minor in Security and Risk Analysis (SRA) is intended to familiarize students with the general frameworks and multidisciplinary theories that define security and related risk analysis. Course work will engage students in the challenges and problems of assuring information confidentiality and integrity (e.g., social, economic, technology, and policy issues) as well as the strengths and weaknesses of various methods for assessing and mitigating associated

risk in the students' major field.

The minor provides a grounding in analysis and modeling used in information search, visualization and creative problem solving. This knowledge is set in the context of legal, ethical and regulatory issues of security including analysis of privacy and security law, internal control standards, regulatory policies and basic investigative processes and principles. Such understanding overviews the information technology that plays a critical role in identifying, preventing and responding to security-related events in the student's major field. A one-time tuition surcharge will be applied to all students enrolled in the 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:**21 credits **[1](#mnote01)**

(At least 6 credits must be at the 400 level.)

**PRESCRIBED COURSES** (15 credits)

IST 110 GS(3), SRA 111 GS(3), SRA 211(3), SRA 221(3) (Sem: 1-6)

IST 452(3) (Sem: 5-8)

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

Select 6 credits in consultation with the SRA Minor adviser from the following areas: Risk Management, Network Security, or Cyber Forensics. At least 3 credits must be at the 400 level. (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 2007

Blue Sheet Item #: 35-06-457

Review Date: 4/10/07

IS

## Spanish Minor

*Altoona College (SPNAL)*

*Berks College (SPNBL)*

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

PROFESSOR CHIP GERFEN, *Head*

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

**PRESCRIBED COURSES:** (6 credits)

SPAN 100(3)\*, SPAN 110(3)\* (Sem: 2-8)

**ADDITIONAL COURSES** (3 credits)

SPAN 215(3) or SPAN 253W(3) (Sem: 2-8)

NOTE: SPAN 100 and SPAN 110 may be taken concurrently, but both must be taken before either SPAN 215 or SPAN 253W.

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

Select 3 credits of Spanish courses (Sem: 2-8)

Select 6 credits of 400-level Spanish courses (Sem: 5-8)

\* Heritage speakers (students with Spanish language in family background) should take SPAN 100A and SPAN 301 instead of SPAN 100 and SPAN 110 respectively.

Last Revised by the Department: Summer Session 2007

Blue Sheet Item #: 35-06-467

Review Date: 4/10/07

LA

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This is the official bulletin of The Pennsylvania State University. Programmatic expectations for General Education are those in effect at the time of admission to degree candidacy, and college and major requirements are those in effect at the time of entry to college and major. These are accurately indicated in each student's degree audit.

The University reserves the right to change the requirements and regulations listed here and to determine whether a student has satisfactorily met its requirements for admission or graduation, and to reject any applicant for any reason the University determines to be material to the applicant's qualifications to pursue higher education. Nothing in this material should be considered a guarantee that completion of a program and graduation from the University will result in employment.

The University Faculty Senate has responsibility for and authority over all academic information contained in the Undergraduate Bulletin.