



# University Bulletin

## Undergraduate Degree Programs

### Primary Navigation

## Penn State New Kensington

Penn State New Kensington, on 72 wooded acres, serves the regions of the Greater Pittsburgh area and counties in southwestern Pennsylvania. The campus has ten major buildings, including the multi-purpose Conference Center, the 350-seat Forum Theatre, the 600-seat Field House, and an art gallery. Most students are commuters.

The campus serves a diverse population of students, both traditional and adult, who are from Pennsylvania, the United States, and other countries. Students can participate in sports teams for varsity, intramural, and club sports. Extracurricular clubs and organizations are available to serve the interests of students. The campus also has strong ties with the surrounding communities.

Penn State New Kensington offers baccalaureate and associate degree programs, as well as the first two years of more than 160 Penn State baccalaureate programs. Students can begin their education at New Kensington and move on to the University Park campus or other appropriate Penn State campus in order to complete their degree. Penn State New Kensington also offers a master's degree program in conjunction with Penn State Harrisburg. Check the links along the side for available academic programs.

### RECOMMENDED ACADEMIC PLANS

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

### Baccalaureate Degrees

### Administration of Justice

*University College (AJSCC): Penn State Beaver, Penn State DuBois, Penn State Fayette, Penn State Greater Allegheny, Penn State Hazleton, Penn State New Kensington, Penn State Schuylkill, Penn State Shenango, Penn State Wilkes-Barre*

The Bachelor of Science degree is intended to prepare students for careers in the administration of justice. Two emphases are provided: (1) for students interested in entry-level employment in justice agencies; (2) for students interested in academic or research positions and who may seek graduate education before beginning employment.

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

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

**GENERAL EDUCATION:** 45 credits

(4-7 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 ELECTIVES, GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 14-18 credits

**REQUIREMENTS FOR THE MAJOR:** 64-65 credits<sup>[1]</sup>

(This includes 4-7 credits of General Education courses; 0-3 credits of GH courses; 4 credits of GQ courses.)

**PRESCRIBED COURSES** (13 credits)

CRIMJ 012 GS(3), CRIMJ 100(3), CRIMJ 221(3), STAT 200 GQ(4) (Sem: 3-4)

**ADDITIONAL COURSES** (39-40 credits)

(Some of the courses in this category may have prerequisites that are not included in the major.)

Select 3-4 credits in values and ethics from BA 243(4) or BA 241(2) and BA 242(2), CRIMJ 465(3), PHIL 003 GH(3), PHIL 103 GH(3), PHIL 105 GH(3), PHIL 106 GH(3), or PHIL/STS 107 GH(3), STS 100 GH(3), STS 101 GH(3) or STS/PHIL 107 GH(3) (Sem: 5-6)

Select 3 credits from CRIMJ 451 US(3) or CRIMJ 453 US(3) (Sem: 5-8)

Select 18 credits in CRIMJ, with at least 9 credits in the 400 level from: CRIMJ 013 GS(3), CRIMJ 083 GS(3), CRIMJ 113 US(3), CRIMJ 200(3), CRIMJ 201(3), CRIMJ 210(3), CRIMJ 220(3), CRIMJ 230(3), CRIMJ 234(3), CRIMJ 241(3), CRIMJ 296(1-18), CRIMJ 297(1-9), CRIMJ 300(3), CRIMJ 301(3), CRIMJ 302(3), CRIMJ 304(3), CRIMJ 310(3), CRIMJ 311(3), CRIMJ 345(3), CRIMJ 389(3), CRIMJ 406(3), CRIMJ 407(3), CRIMJ 408(3), CRIMJ 410(3), CRIMJ 412(3), CRIMJ 413(3), CRIMJ 414(3), CRIMJ 415(3), CRIMJ 420(3), CRIMJ 421(3), CRIMJ 422(3), CRIMJ 423 US(3), CRIMJ 424(3), CRIMJ 425(3), CRIMJ 426(3), CRIMJ 430(3), CRIMJ 431(3), CRIMJ 432(3), CRIMJ 435(3), CRIMJ 439(3), CRIMJ 441(3), CRIMJ 450(3), CRIMJ 460(3), CRIMJ 462(3), CRIMJ 467(3), CRIMJ 469(3), CRIMJ 471(3), CRIMJ 473(3), CRIMJ 482(3), CRIMJ 489(3), CRIMJ 497(3) (Sem: 5-8)

Select 15 credits -- emphasis a or b:

a. Field Research emphasis: CRIMJ 240(4), CRIMJ 290(1-3), CRIMJ 494(5), CRIMJ 495(5) (Sem: 5-8)

b. Research and Policy Analysis emphasis: Select 15 credits, at least 6 at the 400 level from: AMST 491W(3-6), CRIMJ 424W(3), any CMPSC (3), ECON 104 GS(3), LER 100 GS(3), LST 370(3), PLSC 002(3), PLSC 419 US(3), PLSC 490(3), SOC 409 US(3), SOC 419(3), SOC 422(3), or SOC 423(3) (Sem: 5-8)

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

Select 12 credits, in consultation with adviser, from University-wide offerings according to student's career plan (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 2011

Blue Sheet Item #: 40-04-100

Review Date: 01/10/2012

UCA Revision #2: 7/26/07

## **Biobehavioral Health**

*University Park, College of Health and Human Development (BB H)  
University College: Penn State Greater Allegheny, Penn State Lehigh Valley, Penn State New Kensington  
World Campus*

PROFESSOR THOMAS J. GOULD, *Head of the Department*

This major provides interdisciplinary training designed to integrate biological, behavioral, and social science approaches to the study of human health and illness. Emphasis is placed on the study of physical health. The goal of this major is to help students gain working familiarity with multiple perspectives, approaches, and methods needed to address and solve problems of human health and illness. Students may select courses in the supporting courses category that will fulfill requirements for admission to graduate and professional programs. This major helps prepare graduates for entry-level jobs in a range of biomedical and health-related areas, including roles as research assistants, laboratory managers, biomedical product representatives, technical support positions in biomedical and health-related fields. This major also will provide excellent preparation for advanced study in natural and social science disciplines and related professional areas such as epidemiology, public health, environmental health and safety, and human services.

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

Per Senate Policy 83.80.5, the college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. BB H requires students to complete 24 credits for the major through courses taken at University Park, Greter Allegheny, New Kensington and through World Campus. For more information, check the Recommended Academic Plan for this major.

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

**GENERAL EDUCATION:** 45 credits

(22 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 GENERAL EDUCATION course selection, or REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 0-1 credits

**REQUIREMENTS FOR THE MAJOR:** 97-99 credits

(This includes 21-22 credits of General Education courses: 3-4 credits of GQ courses; 9 credits of GN courses; 6 credits of GS courses; 3 credits of GHA courses.)

**PRESCRIBED COURSES** (31 credits)

BIOL 110 GN(4) (Sem: 1-3)

BBH 101 GHA(3)[1], BIOL 141 GN(3)[1], NUTR 251 GHA(3), PSYCH 100 GS(3)[1] (Sem: 1-4)  
BBH 310(3)[1], BBH 311(3)[1], BBH 316(3)[1], BBH 411(3)[1], BBH 440 US;IL(3)[1] (Sem: 5-8)

**ADDITIONAL COURSES** (51-53 credits)

**Select 3 credits from:** BIOL 133 GN(3) or BIOL 222(3) (Sem: 1-2)

**Select 3-4 credits from:** BIOL 230W GN(4)[1] or CHEM 101 GN(3)[1] or CHEM 110 GN(3)[1] or MICRB 106 GN(3)[1] (classes used to fulfill this requirement may not be used to fulfill the 12 credits of basic science below) (Sem: 1-4)

**Select 3-4 credits from:** STAT 200 GQ(4)[1] or STAT 250 GQ(3)[1] (Sem: 1-2)

**Select 3 credits from:** BBH 301W(3), PHIL 110 GH(3), PHIL 132 GH(3), RLST 131 GH(3) (Sem: 5-8)

**Select 12 credits from:** CHEM 110 GN (3), CHEM 111 GN(1), CHEM 112 GN(3), CHEM 113 GN(1) (Sem: 1-2)

CHEM 202(3) or CHEM 210(3), CHEM 203(3) or CHEM 213(2), CHEM 212(3), MICRB 106 GN(3), MICRB 107 GN(1), PSYCH 260(3) (Sem: 3-4)

ANSC 479(3), ANTH 021 GN(3), ANTH 022 GN(3), ANTH 216 GN;GS(3), BMB 211(3), BIOL 155 GN(3), BIOL 129 GN(4), BIOL 142(1), BIOL 220W GN(4), BIOL 230W GN(4), BIOL 240W GN(4), BIOL 422(3), BIOL 409(3), BIOL 479(3), EARTH 100 GN(3), EARTH 103 GN(3), EGEE 101 GN(3), EGEE 102 GN(3), EMSC 101 US;IL(3), FDSC 404(3), FDSC 405(3), FDSC 406(3), FDSC 407(2), FDSC 408(3), GEOG 110 GN(3), GEOG 314 GN(3), PHYS 250 GN(4), PHYS 251 GN(4), PSYCH 460(3), PSYCH 461(3), PSYCH 462(3), PSYCH 464(3), PSYCH 470(3), PSYCH 473(3), VBSC 211 GN(3), VBSC 230(3), VBSC 231(3) (Sem: 5-8)

**Select 15 credits from (at least 6 credits must be at the 400 level)[1]:** BBH 203(3), BBH 251 US(3), BBH 302 US(3), BBH 305 IL(3), BBH 315 US(3), BBH 324(3), BBH 368(3), BBH 390A(3), BBH 402 IL(3), BBH 407 IL(3), BBH 410(3), BBH 416(3), BBH 417(3), BBH 432(3), BBH 446(3), BBH 451(3), BBH 452 US(3), BBH 458 GS(3), BBH 468(3), BBH 469(3), BBH 470(3), BBH 490(3) (Sem: 5-8)

**Select 9 credits from:** CSD 100 GHA;US(3), CSD 101 GHA/US(1.5 ), CSD 146 US;IL(3), CSD 218(3), CSD 230(3), CSD 269 GH;US;IL(3), HPA 057 GHA(3), HPA 101(3), HPA 310(3), HDFS 229 GS(3), HDFS 239 GS(3), HDFS 249 GS(3), HDFS 250 US(3), HDFS 302A(3), HDFS 311(3), HDFS 315 US(3), HDFS 405 US(3), HDFS 416 US(3), HDFS 418(3), HDFS 428(3), HDFS 429(3), HDFS 431(3), HDFS 433(3), HDFS 445(3), HDFS 468(3), KINES 100(3), KINES 101(3), KINES 141 US;IL(3), KINES 165(3), KINES 180(3), KINES 203(3), KINES 304(1), KINES

356(3), KINES 358(1), NUTR 111 GH;US(3), NUTR 358(2), NUTR 360(3), PSYCH 212 GS(3), PSYCH 243 GS(3), PSYCH 270(3) (Sem: 5-8)

**Select 3 credits from:** HDFS 129 GS(3), HDFS 229 GS(3), HDFS 239 GS(3), or HDFS 249 GS(3) (Sem: 5-8)

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

Select 3 credits in health promotion at 400 level from approved list, in consultation with adviser (Sem: 5-8)

Select 12 credits in University-wide offerings from approved list, in consultation with advisor (Students may apply 6 credits of ROTC.) (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 2015

Blue Sheet Item #: 44-02-031

Review Date: 10/13/2015

UCA Revision #1: 9/20/06

HH

Dept head updated: 8/24/16

## **Business**

*Abington College (BSBAB)*

*Altoona College (BSBAL)*

*Berks College (BSBBL)*

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

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

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

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

**ENTREPRENEURSHIP OPTION:** This option prepares students to pursue entrepreneurial

careers with emphasis on idea generation, opportunity analysis, new product creation, and business plan development.

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

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

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

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

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

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

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

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

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

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

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

**ELECTIVES:** 10 credits

**REQUIREMENTS FOR THE MAJOR:** 77 credits  
(This includes 12 credits of General Education courses: 6 credits of GQ courses; 6 credits of GS courses.)

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

**PRESCRIBED COURSES** (41 credits)  
ECON 102 GS(3) (Sem: 1-4)  
ACCTG 211(4), ECON 104 GS(3), MIS 204(3) (Sem: 3-4)  
BA 321(3)[1], BA 322(3)[1], BA 420(1)[1], FIN 301(3)[1], MGMT 301(3)[1], MKTG 301(3)[1], SCM 301(3)[1] (Sem: 5-6)  
IB 303 IL(3)[1] (Sem: 5-8)  
BA 421(3)[1], BA 422(3)[1] (Sem: 7-8)

**ADDITIONAL COURSES** (15-18 credits)  
MATH 110 GQ(4) or MATH 140 GQ(4) (Sem: 1-4)  
SCM 200 GQ(4) or STAT 200 GQ(4) (Sem: 1-4)  
BA 243(4) or BA 241(2) and BA 242(2) (Sem: 3-4)  
Select 3 or 6 credits from BA 495A(3 or 6)[1], BA 495B(3 or 6)[1] (Sem: 7-8)

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

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

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

**ACCOUNTING OPTION: (18 credits)**

**PRESCRIBED COURSES (9 credits)**

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

**ADDITIONAL COURSES (6 credits)**

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

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

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

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

**ENTREPRENEURSHIP OPTION: (18 credits)**

**PRESCRIBED COURSES (9 credits)**

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

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

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

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

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

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

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

**PRESCRIBED COURSES (3 credits)**

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

**ADDITIONAL COURSES (3 credits)**

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

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

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

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

(Minimum 6 credits at the 400-level)

**PRESCRIBED COURSES (6 credits)**

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

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

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

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

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

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

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

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

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

**MANAGEMENT AND MARKETING OPTION:** (18 credits)**ADDITIONAL COURSES** (0-6 credits)

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

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

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

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

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

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

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

Last Revised by the Department: Fall Semester 2013

Blue Sheet Item #: 42-04-065

Review Date: 01/14/2014

UCA Revision #1: 8/3/06

**Comments**

## Communications

*University College (COMCC): Penn State Beaver, Penn State Brandywine, Penn State Greater Allegheny, Penn State New Kensington*

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

With the rapid development of digital technologies over the last decade, the field of communications has seen unprecedented growth and convergence of medium in media both technologically and structurally. The communications degree program addresses strongly articulated employer requirements for the workplace through an integrated program model. The degree provides the basic theoretical foundations of the discipline, allows for appropriate branching outside the traditional curriculum, and permits a drawing from appropriate courses in the disciplines of information sciences and technology, communications, arts and sciences, English, and business.

The degree in communications provides two options for students who wish to develop their written and verbal skills in an effort to gain professional employment in fields such as public relations, publishing, speech writing, video and multimedia, production, and/or journalism.

**CORPORATE COMMUNICATIONS OPTION:** In extending traditional organizational communication, strategic communication, and public relations to the digital age, this option prepares students to compete in a global society. The program is also effective as preparation for e-commerce.

**JOURNALISM OPTION:** In today's workplace, journalism graduates are required to



regularly engage rapidly converging media in their work. This option offers graduates a competitive advantage by complementing traditional options (newspaper, magazine, radio, TV) with convergent course work designed to prepare students for professional journalism in the digital age.

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

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

**GENERAL EDUCATION:** 45 credits

(6-10 credits of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

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

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 5-17 credits

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

(0-12 credits are included in ELECTIVES if foreign language proficiency is demonstrated by examination.)

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

**REQUIREMENTS FOR THE MAJOR:** 49-56 credits

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

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 22 credits

**PRESCRIBED COURSES** (13 credits)**[1]**

COMM 160(1) (Sem: 1-2)

COMM 260W(3), COMM 270(3) (Sem: 3-4)

COMM 494(3), COMM 495(3) (Sem: 7-8)

**ADDITIONAL COURSES** (9 credits)

COMM 100 GS(3) or COMM 110 GH(3) (Sem: 1-2)**[1]**

CAS 201 GH(3)**[1]**; CAS 202 GS(3)**[1]** (Sem: 3-4)

Select 3 credits from the following in Communications Research Methods/Theory (may not double count with option additional courses requirement): CAS 204(3), CAS 471 US;IL(3), COMM 304(3)**[1]** (Sem: 5-6)

**REQUIREMENTS FOR THE OPTION:** 27-34 credits

**CORPORATE COMMUNICATIONS OPTION:** (30-34 credits)

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

CAS 252(3) (Sem: 3-4)

COMM 403(3)

**ADDITIONAL COURSES** (24-28 credits)**[1]**

Choose one of the following two tracks:

PR/MARKETING TRACK:

COMM 370(3) (Sem: 5-6)

COMM 471(3) Sem: 7-8)  
ECON 102 GS(3); ECON 104 GS(3) (Sem: 2-3)  
MKTG 301(3) (Sem: 5-6)

OR

**STRATEGIC COMMUNICATION TRACK:**

COMM 428A(3) (Sem: 5-6)  
COMM 428C(3) (Sem: 7-8)  
COMM 428E(3) (Sem: 7-8)

(Some courses in this category have prerequisites that are not required in the program. Credits applied may not double count with any other major or option requirements. Only 3 credits combined maximum or COMM 1, 2, 3 may apply. Only 3 credits maximum of COMM 297 may apply. Only 3 additional credits maximum of COMM 299 may apply. Only 3 additional credits of COMM 495 may apply. Courses from selected tracks (PR/MARKETING TRACK OR STRATEGIC COMMUNICATION TRACK) may not double count in this category. STAT 200 may double count as GQ. Courses may double count toward IL and US requirements.)

Select 15-16 credits from the following (at least 3 credits must be at the 400 level):  
CAS 203 GS(3), CAS 206(3), CAS 222 GS;US;IL(3), CAS 271 US;IL(3), CAS 352(3), CAS 404(3), CAS 426(3), COMM 1(1-3), COMM 2(1-3), COMM 3(1-3), COMM 205 US(3), COMM 215(3), COMM 241(3), COMM 251(3), COMM 282(3), COMM 292 GH(3), COMM 297(1-3), COMM 299 IL(1-3), COMM 320(3), COMM 370(3), COMM 407A(3), COMM 407B(3), COMM 407C(3), COMM 409(3), COMM 410 IL(3), COMM 412(3), COMM 413W(3), COMM 428A(3), COMM 428C(3), COMM 428D(3), COMM 462(3), COMM 468(3), COMM 471(3), COMM 473(3), COMM 476(3), COMM 495(3), COMM 496(3), ENGL 420(3), MKTG 301(3), STAT 200 GQ(4) (Sem: 5-8)

**JOURNALISM OPTION:** (27-28 credits)

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

COMM 403(3), COMM 409(3), COMM 460(3) (Sem: 5-8)

**ADDITIONAL COURSES** (18-19 credits)**[1]**

Take 3 Additional Credits in Professional Practices:

COMM 462(3); COMM 470A(3) (Sem: 7-8)

(Some courses in this category have prerequisites that are not required in the program. Credits applied may not double count with any other major or option requirements. Only 6 credits combined maximum of COMM 1, 2, 3, may apply. Only 6 credits maximum of COMM 297 may apply. Only 3 credits maximum of COMM 299 may apply. Only 3 additional credits of COMM 495 may apply. STAT 200 may double count as GQ. Courses may double count toward IL and US requirements.)

Select 15-16 credits from the following: CAS 203 GS(3), CAS 222 GS;US;IL(3), CAS 271 US;IL(3), CAS 404(3), COMM 1(1-3), COMM 2(1-3), COMM 3(1-3), COMM 205 US(3), COMM 215(3), COMM 241(3), COMM 251(3), COMM 269(3), COMM 282(3), COMM 292 GH(3), COMM 297(1-3), COMM 299 IL(1-3), COMM 370, COMM 410 IL(3), COMM 412(3), COMM 413W(3), COMM 428A(3), COMM 428C, COMM 428D(3); COMM 464(3), COMM 467(3), COMM 468(3), COMM 470B(3), COMM 470C(3), COMM 471(3), COMM 476(3), COMM 495(1-3), COMM 496(1-18), ENGL 420(3), STAT 200 GQ(4) (Sem: 3-8)

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

Last Reviewed by the Department: Fall Semester 2016

Blue Sheet Item #:45-03-065

Review Date: 10/4/2016

UCA Revision #1: 8/3/06

UC

# Electro-Mechanical Engineering Technology

*Altoona College*

*Berks College*

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

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

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

PROFESSOR JENNILYN VALLEJERA, Program Coordinator, Penn State Altoona

PROFESSOR TERRY SPEICHER, Program Coordinator, Penn State Berks

PROFESSOR JOSEPH CUIFFI, Program Coordinator, Penn State New Kensington

PROFESSOR HARLEY HARTMAN, Program Coordinator, Penn State York

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

The primary aim of the EMET program is to provide graduates with the knowledge and skills necessary to apply current methods and technology to the development, design, operation, and management of electro-mechanical systems, particularly in those industries where automated systems are prevalent.

## **Program Educational Objectives:**

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

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

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

At graduation, EMET students should have:

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

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

- a) Use computer-aided drafting or design tools to prepare graphical representations of electromechanical systems.
- b) Use circuit analysis, analog and digital electronics, basic instrumentation, and computers to aid in the characterization, analysis, and troubleshooting of electromechanical systems.
- c) Use statics, dynamics (or applied mechanics), strength of materials, engineering materials, engineering standards and manufacturing processes to aid in the characterization, analysis, and troubleshooting of electromechanical systems.
- d) Use appropriate computer programming languages for operating electromechanical systems.
- e) Use electrical/electronic devices such as amplifiers, motors, relays, power systems, and computer and instrumentation systems for applied design, operation, or troubleshooting electromechanical systems.
- f) Use advanced topics in engineering mechanics, engineering materials, and fluid mechanics for applied design, operation, or troubleshooting of electromechanical systems.
- g) Use basic knowledge of control systems for the applied design, operation, or troubleshooting of electromechanical systems.
- h) Use differential and integral calculus, as a minimum, to characterize the static and dynamic performance of electromechanical systems.
- i) Use appropriate management techniques in the investigation, analysis, and design of electromechanical systems.

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

institution or community college accredited by ETAC of ABET may transfer into the program with advanced standing.

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

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

**GENERAL EDUCATION:** 45 credits

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

**FIRST-YEAR EXPERIENCE:**

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

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in GENERAL EDUCATION course selection)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

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

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

**PRESCRIBED COURSES** (73 credits)

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

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

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

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

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

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

Select 10-11 credits from:

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

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

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

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

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

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

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

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

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

Select 3-4 credits of science courses, in consultation with an adviser, from the approved

department list (Sem: 4-6)

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

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

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

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

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

Last Revised by the Department: Fall Semester 2017

Blue Sheet Item #: 46-01-040

Review Date: 8/22/2017

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

Comments

EN

## Information Sciences and Technology

*Abington College (ISSAB)*

*Berks College (ISSBL)*

*Capital College (ISSCA)*

*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 Mont Alto, Penn State Schuylkill, Penn State Wilkes-Barre, Penn State Worthington Scranton, Penn State York (ISSCC)*

*World Campus (ISSWC\_BS)*

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

*Mary Beth Rosson, Associate Dean for Graduate and Undergraduate Studies, College of IST*

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

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 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.

**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.

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

1. have completed the following entrance-to-major requirements with a grade of C or better in each: IST 110(3); IST 140(3) (or equivalent CMPSC 101 GQ(3) or CMPSC 121 GQ(3)), IST 210(3), and IST 220(3).
2. have achieved a minimum cumulative grade point average of 2.00 prior to and through the end of the semester during which the entrance-to-major procedure is carried out.

The Integrated Undergraduate Graduate (IUG) program is available for strong undergraduate students who wish to pursue a bachelor's and master's degree in a shorter period of time than would be necessary if the degrees were pursued separately. Information Sciences and Technology undergraduates may apply for admission to the ISTBS/ISTMS IUG program as early as the end of their sophomore year but no later than the end of their junior year after completing a minimum of 60 credits, if they meet the following admission requirements:

1. Must be enrolled in the ISTBS undergraduate degree program.
2. Must have completed 60 credits of an ISTBS undergraduate degree program.
3. Must apply to the IUG program by the end of their junior year.
4. Must apply to and be accepted without reservation into the Graduate School and M.S. program in IST. Students must complete the **Graduate School application**.
5. Must have an overall GPA of 3.5 (on a 4.0 scale) in undergraduate coursework and a minimum GPA of 3.5 in all coursework completed for the major.
6. Must present an approved plan of study. The plan should cover the entire time period of the integrated program, and it should be reviewed periodically with an adviser.
7. Must present two letters of recommendation from faculty members. (Note: For Schreyer Honors College students, these can be the same two letters required by the Schreyer Honors College.)
8. Must meet with both the Director of Undergraduate Academic Affairs and the Graduate Program Coordinator to declare interest and receive information about the IUG program.

For Schreyer Honors College students, students admitted to the IUG program may double-count a maximum of 12 credits toward their graduate and undergraduate degrees in Information Sciences and Technology. Thesis or scholarly paper credits may not

double-count.

For the B.S. degree in 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:** 8 credits

**REQUIREMENTS FOR THE MAJOR:** 84 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):** 60 credits

**PRESCRIBED COURSES** (26 credits)

IST 110 GS(3)[1], IST 210(3)[1], IST 220(3)[1], IST 230(3)[1] (Sem: 1-4)

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

IST 495(1)[1] (Sem: 3-8)

IST 301(3)[1], IST 331(3)[1] (Sem: 5-8)

IST 440(3)[1] (Sem: 7-8)

**ADDITIONAL COURSES** (13 credits)

CMPSC 101 GQ(3)[1], CMPSC 121 GQ(3)[1], or IST 140(3)[1] (Sem: 1-4)

ECON 14 GS(3), ECON 102 GS(3), or ECON 104 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[1] at the 400 level in emerging issues and technologies from College-approved list (Sem: 5-8)

**REQUIREMENTS FOR THE OPTION:** 24 credits

**INFORMATION CONTEXT: PEOPLE, ORGANIZATIONS, AND SOCIETY OPTION:** 24 credits

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

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

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

IST 240(3) or IST 242(3) (Sem: 1-4)



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

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

Select 12 credits from College-approved list (at least 3 credits at the 400-level and no more than 6 credits below the 200-level.) (Sem: 5-8)

**INFORMATION SYSTEMS: DESIGN & DEVELOPMENT OPTION: 24 credits**

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

IST 242(3) (Sem: 1-4)

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

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

Select 3 credits from IST 261(3) or IST 361(3) (Sem: 5-8)

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

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

Select 9 credits from College-approved list (at least 3 credits must be at the 400-level.) (Sem: 5-8)

**INFORMATION TECHNOLOGY: INTEGRATION & APPLICATION OPTION: 24 credits**

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

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

**ADDITIONAL COURSES (3 credits)**[\[1\]](#)

IST 240(3) or IST 242(3) (Sem: 1-4)

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

Select 12 credits from College-approved list (at least 3 credits at the 400-level and no more than 6 credits below the 200-level.) (Sem: 5-8)

**Integrated B.S. in Information Sciences and Technology / M.S. in Information Sciences and Technology**

The College of Information Sciences and Technology offers an integrated B.S./M.S. (IUG) program designed to allow academically superior students in the Information Sciences and Technology major to obtain both the bachelor's in Information Sciences and Technology and M.S. degree in Information Sciences and Technology in a shorter period of time than would be necessary if the degrees were pursued separately. The first two to three years of undergraduate coursework follow the same undergraduate curriculum that other students follow in the Information Sciences & Technology major. Interested students may apply for admission to the IUG program as early as the end of their sophomore year but no later than the end of their junior year after completing a minimum of 60 credits. If admitted to the IUG, the final years of study include two graduate courses, Foundations of Theories and Methods of Information Sciences and Technology Research (IST 504) in the fall and Foundations of Research Design in Information Sciences and Technology (IST 505) in the spring, plus six credits of research methods courses, twelve credits of graduate specialty courses, and six credits of graduate thesis (IST 600) or scholarly paper (IST 594).

(Note: For Schreyer Honors College students, those who complete the graduate thesis for the Master's requirement may use the graduate thesis, itself, to fulfill the undergraduate honors thesis requirement, as well. Honors students who opt for the Master's scholarly paper must also complete an undergraduate honors thesis.)

The integrated B.S. in Information Sciences and Technology /M.S. in Information Sciences and Technology (IUG) degree meets the needs of the most academically talented students in the Information Sciences and Technology undergraduate major. A proportion of these successful students wish to pursue graduate studies sometime after graduation. Offering the IUG benefits these students by offering an accelerated path to a graduate degree.

Additionally, the IUG program can provide these students with a more cohesive program of study with opportunities to engage in more comprehensive research leading to both the Bachelor's and Master's degree.

For the B.S. in Information Sciences & Technology/M.S. in Information Sciences & Technology IUG program, a minimum of 125 credits are required for the bachelor's degree and 30 credits for the M.S. degree. Students admitted to the IUG program may double-count a maximum of 12 credits to their graduate and undergraduate degrees. The required 6 credits of IST 504 and IST 505 will apply to both the graduate program and the undergraduate program. Students may choose an additional 6 credits to double-count for both the undergraduate and graduate degrees from the following: IST 411, IST 412, IST 413, IST 420, IST 421, IST 431, IST 432. Graduate thesis or scholarly paper credits may not double-count.

The objectives of the Integrated Undergraduate Graduate Program include:

1. To offer highly qualified students the opportunity to earn two degrees in less time than it would take to do two sequential degrees. In particular, IUG students may count up to 12 credits towards both their B.S. and M.S. degree requirements.
2. To permit coherent planning of studies through the graduate degree, with advising informed by not only the requirements of the baccalaureate program, but also the longer-range goals of the graduate degree.
3. To introduce undergraduate students to the rigors of both graduate study and graduate faculty.
4. To make the resources of the Graduate School available to IUG students.
5. To allow students with IUG status to benefit from their association with graduate students whose level of work and whose intensity of interest and commitment parallel their own.

## Admission Requirements

To initiate the application process, students must submit an *Integrated Undergraduate-Graduate (IUG) Degree in Information Sciences and Technology Form*, a transcript, and two letters of recommendation (both from faculty members) to the IST Graduate Programs Office. The Director of Undergraduate Academic Affairs, in consultation with the Graduate Programs Coordinator, will help undergraduate candidates determine a proposed sequence of courses that will prepare them for acceptance into the Integrated Undergraduate-Graduate (IUG) degree program. Acceptance into the IST IUG program will be determined by the Graduate Recruitment Committee.

Information Sciences and Technology undergraduate majors may apply for admission no earlier than February 15th of their sophomore year and no later than the February 15th of their junior year after completing a minimum of 60 credits, if they meet the following admission requirements:

1. Must be enrolled in the ISTBS undergraduate degree program.
2. Must have completed 60 credits of an ISTBS undergraduate degree program.
3. Must apply to the IUG program by the end of their junior year.
4. Must apply to and be accepted without reservation into the Graduate School and M.S. program in IST. Students must complete the **Graduate School application**.
5. Must have an overall GPA of 3.5 (on a 4.0 scale) in undergraduate coursework and a minimum GPA of 3.5 in all coursework completed for the major.
6. Must present an approved plan of study. The plan should cover the entire time period of the integrated program, and it should be reviewed periodically with an adviser.
7. Must present two letters of recommendation from faculty members. (Note: For Schreyer Honors College students, these can be the same two letters required by the

Schreyer Honors College.)

8. Must meet with both the Director of Undergraduate Academic Affairs and the Graduate Program Coordinator to declare interest and receive information about the IUG program.

For Schreyer Honors College students, students must also follow guidelines and procedures for applying for IUG in the Schreyer Honors College:

<http://www.shc.psu.edu/students/iug/program/>

In addition, applicants must apply to and be admitted to the Graduate School of the Pennsylvania State University at the time of their application to the IUG degree program. These admission standards are high, as it is thought the program will only be appropriate for students with high levels of academic skills. The program area does have discretion in admitting Information Sciences and Technology majors into the integrated program, and extenuating circumstances can always be considered in terms of possible admission. Individuals who are unable to be admitted into the integrated program of study can apply for regular admission to the graduate program when they complete their undergraduate program of study.

### Sample Sequence of Graduate Coursework in Addition to Undergraduate Courses

Year	Fall	Spring	MS Credits
Year 1 (Senior Undergraduate Year)	IST 504: Foundations 3 Methods course (3)**	IST 505: Research Design (3) Methods course (3)**	30*
Year 2 (Super Senior Undergraduate Year)	IST 600 or IST 594 Thesis Research (3) Grad Speciality Course (3)** Grad Speciality Course (3)**	Methods course (3)** IST 600 or IST 594 Thesis Research (3) Grad Speciality Course (3)** Grad Speciality Course (3)**	

\* Students admitted to the IUG program may double-count a maximum of 12 credits toward their graduate and undergraduate degrees in Information Sciences and Technology. In their senior year, IUG students will take 6 credits of specified graduate work, courses IST 504 and IST 505, and 6 credits of methods courses. These 6 credits of IST 504 and IST 505 will apply to both the graduate program and the undergraduate IST/B.S. support of option requirement. In their super senior year, students may choose an additional 6 credits to double-count for both the undergraduate and graduate degrees. These courses must be at the 400-level or above. Students may choose any 400-level undergraduate option course (IST 411, IST 412, IST 413, IST 420, IST 421, IST 431, IST 432) that they are using to fulfill an undergraduate option requirement and apply the credits to both the undergraduate option requirement and the graduate specialty course requirement. Credits associated with the thesis or culminating scholarly paper, i.e., IST 600 and IST 594, may not be double-counted. However, for Schreyer Honors College students, the Master's thesis deliverable, itself, may double-count for the undergraduate thesis deliverable requirement.

\*\* Choose graduate level methods course after consultation in advance with the student's faculty adviser.

\*\*\* Choose any 400 or 500 level course that contributes to the student's chosen area of specialty with a maximum of six credits at the 400 level.

The total resulting credits will be a minimum of 155 credits, with 125 credits completed for the undergraduate IST degree. Twelve graduate credits will be completed in the senior year, and the remaining 18 graduate credits will be completed in the super senior year.

If for any reason a student admitted to the B.S./M.S. program is unable to complete the requirement for the Master of Science degree program in Information Sciences and Technology, the student will be permitted to receive the Bachelor's degree assuming all degree requirements have been satisfactorily completed.

Student performance will be monitored on an on-going basis by the student's adviser and Graduate Programs. Students admitted to the integrated program must maintain a minimum cumulative GPA of a 3.3 overall and a minimum 3.0 GPA in all courses used toward the M.S. degree in order to maintain good academic standing and meet graduation requirements. (See information on Grade-Point Average in the Graduate Bulletin: <http://bulletins.psu.edu/graduate/degree/requirements/masters#>) For Schreyer Honors College students in the IUG program, students must maintain a minimum cumulative GPA of 3.4 overall and a minimum 3.0 GPA in all courses used toward the M.S. degree in order to maintain good academic standing and meet graduation requirements. Successful completion of a Schreyer Scholar's Master's thesis will be accepted as completion of the honors thesis requirement.

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

[2] Students in the Information Systems: Design and Development Option are expected to take IST 242 prior to taking the prescribed and additional courses for that option.

Last Revised by the Department: Fall Semester 2017

Blue Sheet Item #: 46-01-087

Review Date: 8/22/2017

IS

## Nursing

*Altoona College*

*Penn State Abington*

*Penn State Erie, The Behrend College*

*Penn State Harrisburg*

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

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

*University Park, School of Nursing (NURN)*

*World Campus*

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

This major prepares registered nurse students as professional practitioners in areas of health promotion and maintenance, illness care, and rehabilitation. The major in Nursing is accredited by the Commission on Collegiate Nursing Education (CCNE), One DuPont

Circle, NW Suite 530, Washington, DC 20036 (202-463-6930). Part-time or full-time study is available at any of the campus sites. The University Park site is a blended program, which includes resident instruction and online nursing courses. The World Campus site is completely online.

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

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

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

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

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

**GENERAL EDUCATION:** 45 credits

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

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

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

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 3-5 credits

**REQUIREMENTS FOR THE MAJOR:** 91-93 credits<sup>[1]</sup>

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

**PRESCRIBED COURSES** (73 credits)

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

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

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

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

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

**ADDITIONAL COURSES** (12-14 credits)

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

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

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

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

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

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

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

[37] Credit by Portfolio Assessment

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

Last Revised by the Department: Fall Semester 2017

Blue Sheet Item #: 46-02-078

Review Date: 10/3/2017

UCA Revision #1: 8/9/06

HH

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

## **Project and Supply Chain Management**

*Penn State Erie, The Behrend College (PSCM)*

*Penn State Harrisburg, Capital College (PSMCA)*

*University College: Penn State Beaver, Penn State Fayette, Penn State Greater Allegheny, Penn State Lehigh Valley, Penn State New Kensington, and Penn State Shenango*

The Project and Supply Chain Management major concentrates on developing knowledge, skills, and abilities in both project and supply chain management, dynamic and important disciplines in modern corporations. Project management skills include the development of new projects, and coordinating procurement and project delivery systems. Supply chain management emphasizes the integration of manufacturing and service operations, logistics, purchasing, and distribution that enable organizations to develop value-creating supply chain networks. The major provides students with an opportunity to develop the quantitative and people skills necessary to design and operate today's complex management systems. Students learn how to manage critical components in organizational supply chains, and apply business analytic methods for organizing and fully integrating supply chain practices throughout the organization.

Graduates are uniquely well-prepared for careers in some of the highest in-demand professions in the modern business and government environments, managing the supply chain and project initiatives in world-class business firms, public sector organizations, construction, IT organizations, third-party logistics providers, and goods and services distribution operations.

### **Entry to Major Requirements:**

Entry to the Management major requires the completion of 5 entry-to-major courses: ACCTG 211(4); ECON 102 GS(3); ENGL 15 GWS(3) or ENGL 30 GWS(3); MATH 110 GQ(4) or MATH 140 GQ(4); STAT 200 GQ(4) or SCM 200(4), and a 2.00 or higher cumulative grade-point average.

For the B.S. degree in Project and Supply Chain Management, a minimum of 120 credits is required. Each student must earn at least a grade of C in each 300- and 400-level course in the major field.

*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 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:** 2 credits

**REQUIREMENTS FOR THE MAJOR:** 88 credits

(This includes 15 credits of General Education courses: 6 credits of GQ courses; 6 credits of GS courses; 3 credits of GWS courses.)

**PRESCRIBED COURSES (40 credits)**

ACCTG 211(4), ECON 102 GS(3), ECON 104 GS(3), ENGL 202D GWS(3) (Sem: 3-4)  
FIN 301(3)[1], MGMT 301(3)[1], MIS 204(3), MKTG 301(3)[1], SCM 301(3)[1] (Sem: 3-6)  
MGMT 341(3)[1] (Sem: 5-6)  
MGMT 418(3)[1], SCM 445(3)[1], SCM 460(3)[1] (Sem: 6-8)

**ADDITIONAL COURSES (36 credits)**

Select 4 credits from: MATH 110 GQ(4) or MATH 140 GQ(4) (Sem: 1-2)  
Select 4 credits from: SCM 200 GQ(4) or STAT 200 GQ(4) (Sem: 3-4)  
Select 4 credits from: BA 241(2) and BA 242(2); or BA 243(4) (Sem: 3-6)  
Select 3 credits from: MGMT 410(3)[1]; BA 421(3)[1] (Sem: 5-6)  
Select 3 credits from: BA 364(3)[1], ECON 470(3)[1], FIN 471(3)[1], MGMT 461 IL(3)[1],  
MKTG 445 IL(3)[1], IB 303 IL(3)[1], or other 400-level international business courses[1]  
(Sem: 5-8)  
Select 6 credits of 300- or 400-level courses in one business supporting area or PSCM  
electives from MGMT 420(3)[1], MGMT 431(3)[1], MGMT 432(3)[1], MGMT 433(3)[1],  
MGMT 440(3)[1], MGMT 453(3)[1], MGMT 466(3)[1], or MGMT 483(3)[1], BA 321(3)[1], or  
BA 322(3)[1] (Sem: 5-8)  
Select 3 credits from ECON 481(3)[1] or MIS 336(3)[1] or MIS 301(3)[1] (Sem: 6-8)  
Select 3 credits from: MGMT 415(3)[1] or SCM 416(3)[1] (Sem: 6-8)  
Select 3 credits from: SCM 320(3)[1] or SCM 455(3)[1] (Sem: 6-8)  
Select 3 credits from: BA 462(3)[1] or MGMT 471W(3)[1], BA 422W(3)[1] (Sem: 7-8)

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

Select 12 credits of approved electives courses from any area (see school list of  
suggested courses) (See the admission section in the general information section in this  
bulletin for the placement policy for Penn State foreign language courses.) (Sem: 1-8)

## **Integrated B.S. in Project and Supply Chain Management and M.B.A. in Business Administration, Penn State Harrisburg**

The School of Business Administration offers a limited number of academically superior Bachelor of Science in Project and Supply Chain Management candidates the opportunity to enroll in an integrated, continuous program of study leading to both the Bachelor of Science in Project and Supply Chain Management and the Master of Business Administration. The ability to coordinate as well as concurrently pursue the two degree programs enables the students to earn both degrees in five years. Specifically, as many as twelve of the credits required for the master's degree may be applied to both undergraduate and graduate degree programs. The Integrated Undergraduate-Graduate Program reduces the total number of credits needed to earn both degrees from 150 to 138.

Students in the IUG program must satisfy the requirements for both the Bachelor of Science in Project and Supply Chain Management and Master of Business Administration degrees. The total course load is reduced due to courses that can count towards both degrees. The first two years of the IUG program are identical to the first two years of the Bachelor of Science program. Students in the IUG program take three additional credits in their third year, and three fewer credits in their fourth year. The courses that count toward the Master of Business Administration degree requirements are included in the fourth year.

Student performance will be monitored on an on-going basis. In addition, a formal evaluation of student academic performance will be performed when the students have completed 100 to 105 credits, which is at the end of the first semester of the senior year for typical students in the program. Students who have not maintained a 3.0 GPA in their graduate courses will be put on probationary status with respect to the IUG program. They will receive a warning letter regarding probationary status. Their ability to continue in the IUG program will be based on their academic performance in the last semester of their senior year.

Students have the choice of receiving the B.S. in Project and Supply Chain Management degree at the end of the fourth year or waiting until the end of the fifth year to receive both degrees. Students who elect to receive the B.S. degree at the end of the fourth year will pay graduate tuition for courses taken in the fifth year; students opting to receive both degrees at the end of the fifth year will pay undergraduate tuition for all five years.

If for any reason students admitted to the IUG program are unable to complete the requirements for the Master of Business Administration degree, the students will be permitted to receive the Bachelor of Science in Project and Supply Chain Management degree assuming all the undergraduate degree requirements have been satisfactorily completed. If the students successfully complete courses listed in the recommended schedule, they will satisfy the requirements for the Bachelor of Science degree by the end of their fourth year.

## **ADMISSION REQUIREMENTS**

To initiate the application process, students must submit a resume, a personal statement including career goals and how MBA will enhance their career goals, transcripts of courses taken outside Penn State, two letters of recommendation, with at least one from the School of Business Administration faculty, and a plan of study that integrates both undergraduate and graduate requirements. A graduate faculty adviser in collaboration with the Director of MBA Program will help undergraduate candidates determine a sequence of courses that will prepare them for acceptance into the Integrated Undergraduate-Graduate (IUG) degree program.

The number of openings in the IUG program is limited. Applicants to the IUG program must have completed a minimum of 60 credits. Typical students would apply after completing between 60 and 90 credits, that is, after the fifth semester and before the end of the seventh semester. In addition, the applicants must earn a minimum of cumulative grade point average of 3.5 and complete the following Entry to Major courses or equivalent: ACCTG 211(4), ECON 102(3), ENGL 15 or 30(3), FIN 301(3), MATH 110 or 140(4), MGMT 301(3), MKTG 301(3) and STAT 200(4) or SCM 200(4).

To formally apply, students must submit a completed graduate school application. The students should mention in the notes section that the application is for the IUG program in Business Administration. The Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) is not required for admission into the program; however, if students are interested in applying for a graduate assistantship, GMAT or GRE



scores must be submitted by the end of the eighth semester.

Student applications will be evaluated based on their overall portfolio, in addition to the above requirements. In all cases, admission to the program will be at the discretion of the Graduate Admissions Committee in Business Administration.

## **DEGREE REQUIREMENTS**

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science in Project and Supply Chain Management and Master of Business Administration degrees. The total course load is reduced due to the maximum of 12 credits that can count towards both degrees. All courses counted for both degrees must be at the 500- or 800-level.

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

Last Revised by the Department: Fall Semester 2017

Blue Sheet Item #: 46-03-006

Review Date: 11/14/2017

UCA Revision #1: 8/8/06

UCA Revision #2: 7/27/07

BD

## **Psychology**

*Altoona College (PSCBA)*

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

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

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

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

**GENERAL EDUCATION:** 45 credits

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

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

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

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 14-18 credits

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

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

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

**REQUIREMENTS FOR THE MAJOR:** 41 credits<sup>[1]</sup>

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

**PRESCRIBED COURSES** (7 credits)

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

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

**ADDITIONAL COURSES** (34 credits)

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

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

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

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

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

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

Last Revised by the Department: Spring Semester 2012

Blue Sheet Item #: 40-05-071

Review Date: 02/21/2012

UCA Revision #1: 9/1/06

AL

## Psychology

*Altoona College (PSCBS)*

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

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

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

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

**GENERAL EDUCATION:** 45 credits

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

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

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

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 14-18 credits

**REQUIREMENTS FOR THE MAJOR:** 65 credits **[1]**  
(This includes 0-4 credits of General Education GQ courses.)

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

**PRESCRIBED COURSES** (7 credits)

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

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

**ADDITIONAL COURSES** (34 credits)

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

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

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

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

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

**REQUIREMENTS FOR THE OPTION:** 24 credits

**SCIENCE OPTION:** (24 credits)

**ADDITIONAL COURSES** (15 credits)

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

**SUPPORTING COURSES** (9 credits)

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

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

**BUSINESS OPTION:** (24 credits)

**ADDITIONAL COURSES** (15 credits)

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

**SUPPORTING COURSES** (9 credits)

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

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

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

Last Revised by the Department: Spring Semester 2012

Blue Sheet Item #: 40-05-072

Review Date: 02/21/2012

UCA Revision #1: 8/31/06

AL

## Associate Degrees

# Biomedical Engineering Technology

*University College: Penn State New Kensington (2 BET)*

PROFESSOR JOIE MARHEFKA, *Program Coordinator, Penn State New Kensington*

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

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

The medical community has grown to depend on medical devices and systems to diagnose, treat and monitor patients in health care. These medical devices have become very complex systems, as they are becoming microprocessor controlled, PC based, and networked to share information. Biomedical Equipment Technicians (BETs) are specialized individuals who are educated and trained on the methods of: physiological measurement; equipment application and operation; safety, performance and preventive maintenance testing; calibration; problem solving; and troubleshooting. In addition, BETs may be involved in equipment and technology management programs, selection and installation of medical equipment, manufacturer and FDA recalls of medical devices, quality improvement programs, and training programs for hospital personnel in the safe and proper use of medical equipment. The classroom and laboratory portions of this major focus on electronically and PC based medical devices for patient monitoring and life-support equipment. The student is exposed to a much broader spectrum of medical equipment through a 400-hour (ten-week) practical internship in an approved health care facility.

### Program Educational Objectives

The BET major prepares graduates who, during the first few years of professional practice, will be able to:

1. Apply knowledge of medical devices to install, perform acceptance testing and preventive maintenance (PMs) inspections, troubleshoot, and repair a wide variety of medical devices.
2. Be employed in the healthcare technology management (HTM) profession, and advance their careers by engaging in continuous learning through CBET certification and/or other professional training programs and independent study.
3. Identify and apply standards, regulations, and quality improvement plans regarding

medical equipment.

4. Work both independently and collaboratively in multi-disciplinary teams, communicating effectively with relevant healthcare related professionals.

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

The BET program outcomes are as follows:

1. Understand use, application, operation, installation, acceptance testing, preventive maintenance, performance assurance and safety inspections (PMs) on select medical devices.
2. Understand and apply a fundamental knowledge of electrical and electronic engineering technology fundamentals, components, circuits and networking fundamentals.
3. Apply basic mathematical and scientific principles to identify, analyze and solve technical problems.
4. Be aware of and understand diversity, professional and ethical responsibilities, applicable standards and regulations regarding medical equipment support.
5. Work with fellow technicians, clinical professionals and other related professionals by functioning effectively on teams and by independent work.
6. Communicate effectively with fellow technicians, clinical professionals and other related professionals.
7. Recognize and understand the need for continued professional development, including formal and informal study.
8. Recognize, observe and participate when possible in quality improvement programs, timeliness and commitment to continuous improvement that support medical equipment and systems.

Students completing the 2 BET degree need only complete several additional courses to obtain the Associate in Engineering Technology degree in Electrical Engineering Technology. Graduates of the program may qualify for admission to the baccalaureate degree major in Electrical Engineering Technology offered at Penn State Harrisburg, Electrical and Computer Engineering Technology offered at Penn State Erie, and Electro-Mechanical Engineering Technology offered at Penn State Altoona, Berks, New Kensington and York.

**ENTRANCE REQUIREMENTS:** Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

For the Associate in Engineering Technology degree in Biomedical Engineering Technology, a minimum of 71 credits is required. This program is accredited by the Engineering Technology Accreditation Commission of ABET, [www.abet.org](http://www.abet.org).

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

**GENERAL EDUCATION:** 21 credits

(12 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:** 62-63 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** (47 credits)

BE\_T 101(1), CHEM 101 GN(3), EET 105(3), CMPET 117(3), CMPET 120(1), ENGL 015 GWS(3), IST 110 GS(3)[1], IST 220(3) (Sem: 1-2)

BE\_T 201(5)[1], BE\_T 204(5)[1], BE\_T 205(4)[1], CAS 100 GWS(3), PHYS 150 GN(3), RADSC

230(3) (Sem: 3-4)  
BE\_T 203 (4)[1][2] (Sem: 5)

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

MATH 022 GQ(3) and MATH 026 GQ(3) or MATH 040 GQ(5) (Sem: 1-2)

BE\_T 202(4)[1] or BE\_T 206(4)[1] (Sem: 3-4)

BISC 004 GN(3) or BIOL 141 GN(3) (Sem: 3-4)

Select 3 credits from the following technical courses: BE\_T 210(3), BE\_T 296(1-18), BE\_T 297(1-9), BIOL 129 GN(4), CMPET 211(3), CMPSC 101 GQ(3), EDSGN 100(3), EET 213(5), EET 297(1-3), EGT 201(2) or MCHT 111(3) (Sem: 3-4)

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

[2] BE T 203(4) Internship must be the last course taken for the degree.

Last Revised by the Department: Summer Semester 2017

Blue Sheet Item #: 45-04-048A

Review Date: 01/10/2017

UCA Revision #1: 8/2/06

UCA Revision #2: 7/26/07

**Comments**

EN

# Business Administration

*Abington College (2BAAB)*

*Altoona College (2BAAL)*

*Berks College (2BABL)*

*Capital College (2BACA)*

*University College (2BACC): Penn State Brandywine, Penn State DuBois, Penn State Fayette, Penn State 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 an introductory foundation to core aspects of the business environment that prepares graduates for future baccalaureate study in business or for direct entry into the work place. The primary objective of this major is to provide a business-oriented program with sufficient communicative and mathematical skills, socially relevant course work, and specific business specialties to develop a well-rounded and knowledgeable graduate.

Students should work closely with academic advisers to schedule course work required to transition to baccalaureate business programs.

**ENTRANCE REQUIREMENTS:** Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

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

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

**GENERAL EDUCATION:** 21 credits

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

**REQUIREMENTS FOR THE MAJOR:** 48-50 credits

(This includes 3 credits of GQ General Education courses and 6 credits of GWS General Education courses.)

**PRESCRIBED COURSES** (13 credits)

CAS 100 GWS(3) (Sem: 2-4)

ACCTG 211(4), ENGL 202D GWS(3)**[1]**, MIS 204(3) (Sem: 2-4)

**ADDITIONAL COURSES** (23-24 credits)

ENGL 15 GWS(3)**[1]** or ENGL 30 GWS(3)**[1]** (Sem: 1-2)

MATH 21 GQ(3), MATH 22 GQ(3), or MATH 110 GQ(4) (Sem: 1-2)

BA 243(4) or BA 241(2) and BA 242(2) (Sem: 1-4)

ECON 102 GS(3) or ECON 104 GS(3) (Sem: 1-4)

MGMT 301(3)**[1]** or MGMT 301W(3)**[1]** (Sem: 3-4)

MKTG 301(3)**[1]** or MKTG 301W(3)**[1]** (Sem: 3-4)

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

**SUPPORTING COURSES AND RELATED AREAS** (12-13)

Select 12-13 credits from: BA 100(3); BA 250(3); BA 364(3); CAS 250(3) or CAS 252(3); CAS 352(3); MATH 22 GQ(3); MATH 110 GQ(4); ACCTG 300 to 399(3); ECON 100 to ECON 399(3); ENTR 100 to 399(3); FIN 100 to 399(3); HPA 100 to 399(3); IB 303 IL(3); LER 100 to 399(3); MGMT 100 to 399(3); MKTG 100 to 399(3); MIS 100 to 399(3); RM 100 to 399(3); or SCM 200 to 399(3) (Sem: 1-4)

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

Last Revised by the Department: Spring Semester 2017

Blue Sheet Item #: 45-04-001

Review Date: 1/10/17

UCA Revision #1: 8/9/06

UCA Revision #2: 7/26/07

UC

## Information Sciences and Technology

*Berks College (2ISBL)*

*Continuing Education, University Park (2 IST)*

*University College: Penn State DuBois, Penn State Great Allegheny, Penn State Hazleton, Penn State Lehigh Valley, Penn State Mont Alto, Penn State New Kensington, Penn State Wilkes-Barre, Penn State Worthington Scranton, Penn State York (2ISCC)*

*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 MARY BETH ROSSON, *Associate Dean for Graduate and Undergraduate Studies*

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.

**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.

**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.

**ENTRANCE REQUIREMENTS:** Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

For the Associate in Science degree in 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:** 4-7 credits

**REQUIREMENTS FOR THE MAJOR:** 44-46 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):** 29 credits

**PRESCRIBED COURSES** (25 credits)

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

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

IST 260(3)[11] (Sem: 3-4)

**ADDITIONAL COURSES** (4 credits)

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

IST 295A(1)[11] or IST 295B(1)[11] (Sem: 3-4)

**REQUIREMENTS FOR THE OPTION:** 15-17 credits

**BACCALAUREATE OPTION:** (17 credits)

**PRESCRIBED COURSES** (13 credits)

IST 230(3)[11] and IST 240(3)[11] (Sem: 3-4)

ECON 102 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 211(4), BA 250(3), MKTG 220(3), MKTG 221(3), MKTG 310(3), MKTG 327(3), MGMT 100(3), MGMT 150(3), MGMT 321(3), MGMT 341(3)

ECON 102 GS(3), ECON 104 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 with a grade of C or better required for all IST[11] courses. (Sem: 1-4)

**SOFTWARE OPTION:** (15 credits)

**PRESCRIBED COURSES** (12 credits)

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

IST 211(3)[11], IST 247(3)[11], and IST 256(3)[11] (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)[1], IST 226(3)[1], IST 227(3)[1], and IST 228(3)[1] (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)

**TELECOMMUNICATIONS OPTION:** (15 credits)**PRESCRIBED COURSES** (12 credits)

IST 221(3)[1], IST 222(3)[1], IST 223(3)[1], and IST 224(3)[1] (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: Spring Semester 2017

Blue Sheet Item #: 45-04-069A

Review Date: 1/10/2017

UCA Revision #2: 7/27/07

IS

## Letters, Arts, and Sciences

*Abington College (2LAAB)*

*Altoona College (2LAAL)*

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

*Berks College (2LABL)*

*Penn State Harrisburg (2LACA)*

*University College (2LACC): Penn State Brandywine, Penn State DuBois, Penn State Fayette,*

*Penn State Hazleton, Penn State Mont Alto, Penn State New Kensington, Penn State*

*Schuylkill, Penn State Shenango Valley, Penn State Wilkes-Barre, Penn State*

*Worthington-Scranton*

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

*World Campus*

The objectives of the Letters, Arts, and Sciences major are to broaden the student's understanding, interests, and skills; to help the student become a more responsible, productive member of the family and community; and to offer a degree program with sufficient electives to permit some specialization according to the student's interests or career plans. Letters, Arts, and Sciences is a complete two-year degree major. However, graduates who later seek admission to baccalaureate degree majors may apply baccalaureate credits toward the new degree.

In addition to a wide variety of baccalaureate majors offered at University Park campus, graduates of the Letters, Arts, and Sciences major may qualify for admission to the baccalaureate degree majors in Behavioral Sciences, Elementary Education, Humanities, or Public Policy offered at Penn State Harrisburg. Or they may qualify for any of a large

number of baccalaureate degree majors offered by Penn State Erie, The Behrend College, in business, the liberal arts, and sciences.

**ENTRANCE REQUIREMENTS:** Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

For the Associate in Arts degree in Letters, Arts, and Sciences, a minimum of 60 credits is required.

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

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

**ELECTIVES:** 15 credits

**REQUIREMENTS FOR THE MAJOR:** 30 credits#**[1]**  
(This includes 6 credits of General Education GWS courses.)

**PRESCRIBED COURSES** (6 credits)

ENGL 015 GWS(3) (Sem: 1-2)

CAS 100 GWS(3) (Sem: 3-4)

**ADDITIONAL COURSES** (3 credits)

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

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

Select 3 credits in any course designated as arts\* (Sem: 1-4)

Select 3 credits in any course designated as humanities\* (Sem: 1-4)

Select 3 credits in any course designated as social and behavioral sciences\* (Sem: 1-4)

Select 3 credits in any course designated as physical, biological, or earth sciences\* (Sem: 1-4)

Select 9 credits in any one of the following areas\*: arts, humanities, social and behavioral sciences, natural sciences and quantification, and foreign language skills. (If foreign language courses are chosen, it is recommended that these courses be in one foreign language sequence.) (Sem: 1-4)

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

#The required credits of General Education and Requirements for the Major must be baccalaureate-level courses. For students intending to seek admission to a baccalaureate program upon graduation, it is recommended that most, if not all, of the courses be at the baccalaureate level. For those students who will seek a bachelor of arts degree upon graduation from Letters, Arts, and Sciences, it is strongly recommended that a foreign language be taken since admission to a bachelor of arts program in the College of the Liberal Arts requires one college-level course, or the equivalent, in a foreign language.

\*Courses that will satisfy the arts, humanities, social and behavioral sciences, natural sciences, and quantification requirements are defined on the Letters, Arts, and Sciences checklist, which may be obtained from the College of the Liberal Arts associate dean for undergraduate studies at the University Park campus or from any Letters, Arts, and Sciences representative at other locations.

Last Revised by the Department: Spring Session 2017

Blue Sheet Item #: 45-04-071B

Review Date: 1/10/17

Reviewed by Publications: 06/23/06

LA

## Radiological Sciences

*University College: Penn State New Kensington (2RSCC), Penn State Schuylkill (2RSCC)*

For students interested in pursuing an education in the paramedical field of radiography (radiologic technology), the radiological sciences major meets the educational and clinical requirements for the graduate to function as an entry-level radiographer. Required course work is divided into three interrelated areas including general education, radiography specific, and clinical education components. During the clinical education component, students perform radiographic exams under the directed supervision of certified radiographers at multiple area clinical education settings. The clinical component emphasizes the concepts of team practice and patient-centered care. Both the radiography-specific course work and the clinical component are structured sequentially over six or seven consecutive semesters, commencing each fall semester. Upon successful completion of the 72-credit associate degree, the graduate will be eligible to attempt the American Registry of Radiologic Technologists (ARRT) examination for certification.

**ENTRANCE REQUIREMENTS:** Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

For the Associate in Science degree in Radiological Sciences, a minimum of 72 credits is required.

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

**GENERAL EDUCATION:** 21 credits

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

(See description of General Education in this bulletin.)

**REQUIREMENTS FOR THE MAJOR:** 66 credits

(This includes 15 credits of General Education courses: 3 credits of GH courses; 3 credits of GN courses; 3 credits of GQ courses; 3 credits of GS; 3 credits of GWS courses.)

**PRESCRIBED COURSES** (59 credits)

BIOL 129 GN(4)[1], RADSC 101(4)[1], RADSC 110(3)[1] (Sem: 1)

BIOL 141 GN(3), ENGL 015 GWS(3), IST 110 GS(3), MATH 021 GQ(3), PHIL 103 GH(3),

RADSC 102(4)[1], RADSC 103(3)[1], RADSC 204(3)[1], RADSC 205(3)[1], RADSC 210(3)[1],

RADSC 220(3)[1], RADSC 295B(1)[1], RADSC 295D(1)[1], RADSC 230(3)[1] (Sem: 1-5)

RADSC 206(3)[1], RADSC 240(2)[1] (Sem: 5-6)

RADSC 207(4)[1] (Sem: 6-7)

**ADDITIONAL COURSES** (7 credits)[1]

At Penn State New Kensington:

Take 7 credits from RADSC 295A(1.5), RADSC 295C(2), RADSC 295E(1.5), RADSC 295F(2) (Sem: 1-6)

OR

At Penn State Schuylkill:

Take 7 credits from RADSC 295A(1), RADSC 295C(1), RADSC 295E(2), RADSC 295G(1), RADSC 295I(2) (Sem: 1-7)

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

Last Revised by the Department: Spring Semester 2017

Blue Sheet Item #: 45-04-079

Review Date: 1/10/2017

CL/UC

## Minors

### Business Minor

Penn State Abington, Dr. Feng Zhang, fzz34@psu.edu  
University College via World Campus, Lehigh Valley

*Contacts: Business Minor Contact at campuses offering the BSB major or University College at: sah43@psu.edu; Lehigh Valley - Maung Min*

The Business minor is a strong complement to virtually any major. Courses prescribed for the minor are taught by Penn State faculty providing courses to the B.S. in Business and the A.S. in Business Administration. It provides students with the opportunity to develop and apply skills appropriate to the business contexts of their chosen majors. Students pursuing the Business minor must complete thirteen credits of prescribed course work and six credits of additional course work. A grade of C or better is required for all courses in the minor. The prescribed thirteen credits of coursework presents students with a critical foundation of core business disciplines: accounting, management, marketing, and either macro- or micro-economics. The six credits of additional coursework must be taken at the 400-level.

The additional coursework enables students to expand on the core foundation in one of two ways. They may choose to solidify their business knowledge base by exploring six credits of 400-level business courses in the following disciplines: Accounting; Business Administration; Business Law; Energy Business and Finance; Economics; Entrepreneurship; Finance; Financial Services; Health Policy and Administration; International Business; Labor Studies and Employment Relations; Management Information Systems; Management; Marketing; Risk Management; Supply Chain Management; or Statistics. Alternately, students can augment three credits of 400-level coursework in one of the above listed business disciplines with three credits of 400-level work from an approved list of specific business-related course in disciplines such as Communication Arts and Sciences; Corporate Communication; Communications; Criminal Justice; Engineering; English; Human Development and Family Studies; History; Hospitality Management; Information Sciences and Technology; Kinesiology; Philosophy; Political Science; Psychology; Recreation, Park and Tourism Management; or Sociology.

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

**REQUIREMENTS FOR THE MINOR:** 19 credits

**PRESCRIBED COURSES:** (10 credits)

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

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

**ADDITIONAL COURSES:** (3 credits)

Select 3 credits from ECON 102 GS(3) or ECON 104 GS(3) (Sem: 1-5)

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

Select 3-6 credits at the 400 level from:

ACCTG, BA, BLAW, EBF, ECON, ENTR, FIN, FINSV, HPA, IB, LER, MIS, MGMT, MKTG, RM, SCM, or STAT (Sem: 5-8)

Select 0-3 credits at the 400-level from:

CAS 404(3), CAS 452(3), CAS 483(3), CC 401(3), CC 403(3), COMM 421W(3), COMM 427(3), COMM 471(3), CRIMJ 408(3), CRIMJ/SOC 467(3), ENGL 419(3), ENGL 420(3), ENGR 425(3), HDFS 401(3), HDFS 424(3), HDFS 425(3), HDFS 455(3), HIST 458(3), HM 435(3), HM 471(3), HM 484(3), IST 402(3), IST 420(3), IST 425(3), IST 431(3), IST 432(3), IST 461(3), KINES 438(3), KINES 492(3), PHIL 406(3), PLSC 440 US;IL(3), PSYCH 404(3), PSYCH 408(3), PSYCH 423(3), PSYCH 482(3), PSYCH 484(3), PSYCH 485(3), RPTM 410(3), RPTM 415(3), RPTM 470(3), SOC 455(3), SOC 456(3) (Sem: 5-8)

Last Revised by the Department: Fall Semester 2014

Blue Sheet Item #: 43-03-174

Review Date: 11/18/2014

UCA Revision #1: 8/3/06

**Comments**

AB/BK/UC

## English Minor (ENGL)

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

*Contact: Abington College, Ellen Knodt, [eak1@psu.edu](mailto:eak1@psu.edu); Altoona College, Erin Murphy, [ecm14@psu.edu](mailto:ecm14@psu.edu); Capital College, Jennifer Hirt, [jlh73@psu.edu](mailto:jlh73@psu.edu); Penn State Brandywine, Adam Sorkin, [ajs2@psu.edu](mailto:ajs2@psu.edu); Penn State Fayette, Danielle Mitchell, [dmm52@psu.edu](mailto:dmm52@psu.edu); Penn State Greater Allegheny, James Jaap, [jaj15@psu.edu](mailto:jaj15@psu.edu); Penn State Mont Alto, Kevin Boon, [kab25@psu.edu](mailto:kab25@psu.edu); Penn State Wilkes-Barre, Steven Putzel, [sdp4@psu.edu](mailto:sdp4@psu.edu); College of the Liberal Arts, Elizabeth Brown, [eaf4@psu.edu](mailto:eaf4@psu.edu); Penn State York, Dr. Jennifer Nesbitt, [jpn12@psu.edu](mailto:jpn12@psu.edu)*

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

For the minor in English a minimum of 18 credits are required.

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

**REQUIREMENTS FOR THE MINOR:** 18 credits

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

*Students may not count courses used to satisfy General Education Writing/Speaking Skills*

Select 6 credits from ENGL 200-299 (Sem: 3-8)

Select 6 credits from ENGL 400-499 (Sem: 3-8)

Select 6 additional credits in English (Sem: 3-8)

Last Revised by the Department: Fall Semester 2015

Blue Sheet # 44-03-073

Review Date: 11/17/15

## Information Sciences and Technology Minor

Abington College - contact: Joe Oakes, jxo19@psu.edu

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, World Campus

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 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:** 18 credits

**PRESCRIBED COURSES** (9 credits)

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

**ADDITIONAL COURSES** (9 credits)

Select 3 credits from IST 140(3), IST/COMM 234 GS(3), IST/WMNST 235 US(3), IST 250(3), IST 301(3), or IST 302(3) (Sem 5-8)

Select 6 credits from IST 402(3), IST 431(3), IST 432(3), IST 442 IL(3), IST 445(3), IST 452(3), IST 453(3) (Sem 5-8)

Last Revised by the Department: Spring Semester 2017

Blue Sheet Item #: 45-06-037

Review Date: 4/4/2017

IS

## Security and Risk Analysis Minor

*Penn State Abington - contact: Joe Oakes, jxo19@psu.edu*

*Penn State Berks*

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



*Penn State Worthington Scranton, Galen Grimes, gag5@psu.edu, World Campus 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 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**<sup>[1]</sup>

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

**PRESCRIBED COURSES** (9 credits)

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

**ADDITIONAL COURSES** (12 credits)

Select 3 credits from: IST 140(3); CMPSC 101 GQ(3) (Sem: 1-6)

Select 3 credits from: IST 220(3); SRA 231(3) (Sem: 1-6)

Select 6 credits from: IST 432(3), IST 451(3), IST 452(3), IST 453(3), IST 454(3), IST 456(3), SRA 421(3), SRA 468(3), SRA 471(3), SRA 480(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 2017

Blue Sheet Item #: 45-06-038

Review Date: 4/4/17

IS

## **Technical Writing Minor (TEHWR)**

*Contact: College of the Liberal Arts, Elizabeth Brown, eaf4@psu.edu*

The Department of English offers an 18-credit minor leading to a Technical Writing certificate to all students, regardless of major or college, who want to do concentrated work in technical writing.

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 418(3) (Sem: 5-8)

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

(Some courses in this category may have prerequisites that are not required in the minor.)

Select 3-6 credits from CAS 452(3), CAS 452W(3), ENGL 470(3), ENGL 471(3), ENGL 472(3), ENGL 473(3), ENGL 474(3), S T S/PHIL 407(3); PHIL/S T S 433(3) (Sem: 3-8)

Select 6-9 credits from ENGL 415(3), ENGL 416(3), ENGL 417(3), ENGL 419(3), ENGL 420(3), ENGL 421(3), ENGL 480(3); ENGL 495(3) (Sem: 3-8)

Select 3-6 credits from ART 002 GA(3); ART 003 GA(3); ART 101 GA(3); GD 100 GA(3); LDT 100 GS;IL(3); INSYS 441(3), PSYCH 444(3), PSYCH 456(3) (Sem: 3-8)

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

(Some courses in this category may have prerequisites that are not required in the minor.)

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-01-114

Review Date: 8/23/16

UCA Revision #1: 9/1/06

LA

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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.

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