



# University Bulletin

## Undergraduate Degree Programs

### Primary Navigation

## Penn State Harrisburg

Penn State Harrisburg is an undergraduate college and graduate school of the University. The Harrisburg campus enrolls more than 5,000 students and offers more than 65 associate, bachelor's, master's, and doctoral degree programs. The college has nationally accredited programs, award-winning faculty who are accomplished teachers and scholars, and the resources of a world-class research university.

The college also offers all four years of study in 35 of its baccalaureate programs as well as the first two years of study leading to more than 160 baccalaureate majors offered throughout the University.

The college serves students from all campuses of Penn State, as well as transfer students from community colleges and other accredited colleges and universities.

Penn State Harrisburg is located on a suburban campus in Middletown, Pennsylvania, eight miles east of Harrisburg. The campus is easily accessible via major interstate routes and the Pennsylvania Turnpike's Exit 247. Harrisburg International Airport is within one mile of the campus, public transportation serves the college, and rail service affords convenient access from locations throughout the nation.

Because specific requirements of particular programs vary, students should contact the Office of Admissions, Penn State Harrisburg, 777 W. Harrisburg Pike, Middletown, PA 17057; 717-948-6250, or by email at [hbgadmit@psu.edu](mailto:hbgadmit@psu.edu). Additional information about Penn State Harrisburg is available at [harrisburg.psu.edu](http://harrisburg.psu.edu).

Note: Concerning undergraduate programs, see <http://bulletins.psu.edu/undergrad/barequirements> for courses that meet University-wide bachelor of arts degree requirements.

Note: Recommended academic plans for undergraduates 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 [dus.psu.edu/semplans.htm](http://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.

### CAPITAL COLLEGE

MUKUND S. KULKARNI, *Chancellor*

OMID ANSARY, *Senior Associate Dean for Academic Affairs*

SUSANNAH GAL, *Associate Dean for Research and Outreach*

PETER B. IDOWU, *Assistant Dean for Graduate Studies*

### COLLEGE ORGANIZATION

School of Behavioral Sciences and Education — HOLLY L. ANGELIQUE, *Interim Director*

School of Business Administration — STEPHEN P. SCHAPPE, *Director*

School of Humanities — JEFFREY BECK, *Director*

School of Public Affairs — PATRIA de LANCER JULNES, *Director*

School of Science, Engineering, and Technology — RAFIC BACHNAK, *Director*

### Baccalaureate Degrees

# Accounting

Penn State Abington (ACCAB)  
Penn State Berks (ACCBL)  
Capital College (ACCT)  
World Campus

JANE KOCHANOV, *Director of Undergraduate Studies, School of Business Administration*

This major helps students prepare for careers in auditing and public accounting, industrial and managerial accounting, and in governmental and not-for-profit accounting. It also provides a sound background for students who plan to pursue graduate studies in accounting or related fields. Students who complete the prescribed courses and earn a Bachelor of Science degree will satisfy the academic requirements to sit for the Certified Public Accountant (CPA) examination. Graduates may also elect to pursue other professional certifications, including Certified Management Accountant (CMA), Certified Internal Auditor (CIA), Certified Fraud Examiner (CFE), and Certified Government Financial Manager (CGFM).

For a B.S. in Accounting a minimum of 120 credits is required. Consistent with Senate policy, at least 24 credits of course work in the major and the capstone course must be completed in the respective College to earn the degree. No more than 60 credits should be from business and business-related courses.

Students wishing to fulfill the 150 credit-hour education option to become a CPA in Pennsylvania (which reduces the experience requirement for certification) are encouraged to enter Capital College's Master of Professional Accounting program, or the Master of Business Administration program, or the Master of Science in Information Systems program subsequent to receiving their undergraduate accounting degree.

## Entry to Major Requirements:

Entry to the Accounting major requires the completion of 8 entry-to-major courses: ACCTG 211(4)[\[1\]](#); ECON 102 GS(3); ENGL 015 GWS(3)[\[1\]](#) or ENGL 030 GWS(3)[\[1\]](#); FIN 301(3); MATH 110 GQ(4)[\[1\]](#) or MATH 140 GQ(4)[\[1\]](#); MGMT 301(3); MKTG 301(3); SCM 200 GQ(4)[\[1\]](#) or STAT 200 GQ(4)[\[1\]](#); and a 2.00 or higher cumulative grade-point average.

*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 Course Requirements 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: 8 credits of non-business courses

## REQUIREMENTS FOR THE MAJOR: 79 credits

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

## PRESCRIBED COURSES (55 credits)

ACCTG 211(4)[\[1\]](#) (Sem: 1-4)  
ECON 102 GS(3) (Sem: 1-4)  
ENGL 202D GWS(3) (Sem: 1-4)  
FIN 301(3), MKTG 301(3), MGMT 301(3) (Sem: 1-4)  
BA 364 US;IL(3), BA 462(3)[\[1\]](#), MIS 390(3), SCM 301(3) (Sem: 5-8)  
ECON 104 GS(3), MIS 204(3) (Sem: 5-8)  
ACCTG 310(3)[\[1\]](#), ACCTG 340(3)[\[1\]](#), ACCTG 403(3)[\[1\]](#), ACCTG 471(3)[\[1\]](#), ACCTG 472(3)[\[1\]](#), ACCTG 473(3)[\[1\]](#) (Sem: 5-8)

## ADDITIONAL COURSES (18 credits)

Select 4 credits from MATH 110 GQ(4)[\[1\]](#) or MATH 140 GQ(4)[\[1\]](#) (Sem: 1-4)  
Select 4 credits from SCM 200 GQ(4)[\[1\]](#) or STAT 200 GQ(4)[\[1\]](#) (Sem: 1-4)  
BA 243(4) or BA 241(2) and BA 242(2) (Sem: 5-6)

Select 6 credits[1] from the following: ACCTG 410(3), ACCTG 431(3), ACCTG 432(3), ACCTG 440(3), ACCTG 461 IL(3), ACCTG 462(3), ACCTG 463(3), ACCTG 489(3), ACCTG 494(1-12), ACCTG 496(1-18), ACCTG 497(1-9) (Sem: 5-8)

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

Select 6 credits from 200-400 level business courses from: ACCTG, BA, ECON, FIN, MGMT, MIS, MKTG, or SCM in consultation with an academic adviser and in support of the student's interests. (Sem: 3-8)

## **Integrated B.S. in Accounting and M.B.A. in Business Administration**

The School of Business Administration offers a limited number of academically superior Bachelor of Science in Accounting candidates the opportunity to enroll in an integrated, continuous program of study leading to both the Bachelor of Science in Accounting 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 Accounting 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 six additional credits in their third year, and six 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 Accounting 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 Accounting 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 the 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(3), 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 Admission

Committee in Business Administration.

## DEGREE REQUIREMENTS

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science in Accounting 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 Reviewed by the Department: Fall Semester 2017

Blue Sheet Item #:46-01-066

Review Date: 8/22/2017

UCA Revision #1: 8/2/06

UCA Revision #2: 7/26/07

CL

## American Studies

*Abington College (AMSAB)*

*Penn State Harrisburg (AMSCA)*

*University College (AMSCC): Penn State Brandywine*

PROFESSOR JOHN HADDAD, *Program Coordinator*

This interdisciplinary major is designed to provide students with an integrated and critical knowledge of American culture, drawing on courses in American Studies and in the traditional disciplines and culminating in two senior seminars. A number of interests may be pursued within the major, including popular culture, art, technology, business, law, archives, museology, and conservation. The major helps prepare students for careers in business, teaching, government, and a number of other areas, and for enrollment in law and other professional programs.

For entrance into the major, the following must be met:

1. At the end of the sophomore year, any student in good standing may gain entrance into the major without having completed specific courses.
2. Any student seeking entrance during the fifth semester will be granted entrance at the discretion of the American Studies Committee and/or Director following evaluation of the student's record.
3. Any student seeking entrance during or after the sixth semester will be expected to have completed at least 12 credits, which may be counted toward the major in American Studies.

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

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

**GENERAL EDUCATION:** 45 credits

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in 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:** 21 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:** 33 credits[1]

**PRESCRIBED COURSES** (6 credits)

AMST 491W(6) (Sem: 5-8)

**ADDITIONAL COURSES** (3 credits)

AMST 100 GH(3) or AMST 100Y GH(3) (Sem: 1-4)

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

(Include 12 credits at the 400 level distributed in at least two of the areas.)

Select 9 credits in each of two of the following areas; select 6 credits in one other of the areas: (Sem: 3-8)

- a. American literature
- b. American history
- c. American art, philosophy, and religion (humanities)
- d. American social sciences

## Integrated B.A./M.A. in American Studies

The American Studies Program offers an integrated B.A./M.A. program that is designed to allow academically superior baccalaureate students enrolled in the American Studies major to obtain both the B.A. and the M.A. degrees in American Studies within five years of study. The first two years of undergraduate coursework typically include the University General Education requirements and lower-level courses. In the third year, students typically take upper-division coursework in American Studies and define areas of interest. The fourth year involves graduate-level American Studies coursework including required courses in American Studies Theory and Methods (AMST 500). The fifth and final year of the program typically consists of graduate coursework in American Studies including Seminar (AMST 591) and identification of a research project that will culminate in the completion of a M.A. project (AMST 580) or thesis (AMST 600).

By encouraging greater depth and focus in the course of study beginning in the third undergraduate year, this program will help the student more clearly define his/her area of interest and expertise in the broad field of American Studies. As a result, long-range academic planning for exceptional students pursuing doctoral degrees or other professional goals after leaving Penn State will be greatly enhanced. For most students, the total time required to reach completion of the higher degree will be shortened by about a year. The student will have earlier contact with the rigors of graduate study and with graduate faculty. The resources of the Graduate School are accessible to students accepted into the IUG program. Students in their third and fourth year of study with IUG status benefit from their association with graduate students whose level of work parallel their own.

For the IUG American Studies B.A./M.A. degree, a minimum of 123 credits are required for the B.A. and a minimum of 30–33 credits for the M.A. (30 for non-thesis; 33 for thesis). Twelve credits at the 400 level or higher, in consultation with the adviser, can apply to both the B.A. and M.A. degrees; at least 6 of these 12 credits must be at the 500 level.

If for any reason a student admitted to the B.A./M.A. program is unable to complete the requirement for the Master of Arts degree program in American Studies, the student will be permitted to receive the B.A. degree assuming all degree requirements have been satisfactorily completed.

### Admission Requirements

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

1. Must be enrolled in the American Studies B.A. program and meet the admission requirements of the American Studies M.A. program.
2. Must apply and be admitted to the Graduate School.
3. Shall be admitted no earlier than the beginning of the third semester of undergraduate study at Penn State (regardless of transfer or AP credits accumulated prior to enrollment) and no later than the end of the second week of the semester preceding the semester of expected conferral of the undergraduate degree, as specified in the proposed IUG plan of study.
4. Must have completed at least one 400-level American Studies course (AMST prefix) with a grade of A.
5. Must submit transcript(s) of previous undergraduate work, recommendations from two faculty members, writing sample, and statement of goals.
6. Must have an overall GPA at or above 3.3 (on a 4.0 scale) in undergraduate coursework and a GPA at or above 3.5 in all coursework completed for the American Studies major.
7. Must present a plan of study approved by the student's adviser in the application process.

### Course Load

As many as 12 of the credits required for the master's degree may be applied to both undergraduate and graduate degree programs. The courses to be double counted are:

AMST 491W (two seminars on different topics)—6 credits during the student's fourth (senior) year  
 AMST 500 –3 credits during the student's fourth (senior) year  
 AMST 591—3 credits during the student's fifth year

With the approval of the student's adviser, students may take American Studies courses from the 100 to 400 levels at Penn State campuses other than Harrisburg, but 500-level courses must be taken at the Harrisburg campus.

### Sample Sequence of Coursework

A typical sequence of coursework for the integrated program would appear as follows (AM ST 491W, AM ST 500, and AM ST 591 are applied to both undergraduate and graduate degree programs):

YEAR	FALL		SPRING	
3rd (Junior)	AMST 100	3	AMST supporting course	3
	AMST supporting course	3	400-level AMST course	3
	BA Requirement: Other Cultures	3	400-level AMST course	3
	BA Requirement: Knowledge Domain	3	Elective	3
	Elective	3	Elective	3
	Total	15	Total	15
4th (Senior)	<b>AMST 491W*</b>	3	<b>AMST 491W*</b>	3
	400-level AMST course	3	400 level AMST course	3
	400-level AMST supporting course	3	<b>AMST 500*</b>	3
	Elective	3	500 level AMST course	3
	Elective	3	Elective	3
	Total	15	Total	15
5th (Graduate)	500-level AMST course	3	500-level AMST course	3
	500-level AMST course	3	AMST 580 or AMST 600	3-6
	500-level AMST course	3	<b>AMST 591*</b>	3
	Total	9	Total	9-12

\*Satisfies requirements for both the undergraduate and graduate program for a total of 12 credits

As stated in the Graduate Bulletin, a minimum grade-point average of 3.00 for work done at the University is required for graduation and to maintain good academic standing. See [http://bulletins.psu.edu/bulletins/whitebook/degree\\_requirements.cfm?section=masters](http://bulletins.psu.edu/bulletins/whitebook/degree_requirements.cfm?section=masters).

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

Last Revised by the Department: Spring Semester 2013

Blue Sheet Item #: 42-01-026

Review Date: 08/20/13

# Biology

*Abington College (BIOAB)*

*Altoona College (BIOAL)*

*Berks College (BIOBL)*

*Capital College (BIOCA)*

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

*University College, Penn State Beaver, Penn State Brandywine, Penn State Schuylkill, Penn State Worthington*

*Scranton, Penn State York (BIOCC)*

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

*Carla Hass, Person-In-Charge*

The curriculum in Biology is planned for preparation for professions requiring competence in biological science or for gaining an understanding of the world of living things. The professional group includes students who intend to secure advanced degrees through graduate study, students who are interested in work with various governmental agencies or industries having biological responsibilities, and students who want to prepare for careers in medicine or other health-related professions. Students whose interests are not professional select the curriculum because its broad approach can result in an educated view of the structure and function of living things. Achievement of these goals, including a special interest in a particular area of biology, can be met by selecting one of five options offered by the Department of Biology that will lead to the B.S. degree in Biology. The options and their key areas are 1) Plant Biology--morphology, systematics, and physiology of plants and fungi; 2) Ecology--behavior, and population and community biology of plants and animals; 3) General Biology--all aspects of modern biology; 4) Genetics and Developmental Biology--genetics, genetic engineering, and plant and animal development; 5) Neuroscience--development, biochemistry, physiology and aging of the central and peripheral nervous system; 6) Vertebrate Physiology--pre-medicine, pre-dentistry, pharmacology, and animal physiology.

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

## **TO VIEW THE [Biology Minor \(BIOL\)](#)**

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

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

**GENERAL EDUCATION:** 45 credits

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

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in GENERAL EDUCATION course selection)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**REQUIREMENTS FOR THE MAJOR:** 94 credits

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

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

**PRESCRIBED COURSES** (32 credits)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**ADDITIONAL COURSES** (27-30 credits)

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

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

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

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

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

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

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

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

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

**SUPPORTING COURSES AND RELATED AREAS** (20-27 credits)

Select 20-27 credits from department list (Sem: 1-8)

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

**PRESCRIBED COURSES** (19 credits)

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

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



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

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

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

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

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

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

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

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

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

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

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

**PRESCRIBED COURSES** (19 credits)

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

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

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

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

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

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

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

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

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

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

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

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

**PRESCRIBED COURSES** (22 credits)

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

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

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

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

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

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

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

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

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

## **VERTEBRATE PHYSIOLOGY OPTION: (50-54 credits)**

### **PRESCRIBED COURSES (18 credits)**

CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-4)  
B M B 401(2), B M B 402(3), BIOL 472(3), BIOL 473(2) (Sem: 5-8)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

There are a number of other requirements for Pennsylvania teacher certification, including state-required tests and clearances, as well as coursework that can be completed at either the undergraduate or graduate level. Some courses, not enumerated above, that are usually required to satisfy teacher certification

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

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

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-01-132

Review Date: 8/23/16

UCA Revision #1: 8/2/06

UCA Revision #2: 7/26/07

SC

## Civil Engineering

*Capital College (CE CA)*

PROFESSOR SEROJ MACKERTICH, *Program Chair*

The program in Civil and Environmental Engineering is designed to provide the basic undergraduate education required for private practice and public service in civil engineering, and/or continue formal education. Emphasis is placed on the fundamentals of civil engineering principles and design techniques. Students utilize basic engineering science concepts in several of the different specialty areas (e.g., construction/management, environmental, materials/pavement design/geotechnical, structures, transportation, and water resources). Finally the students are able to choose an area of specialization for professional practice or graduate studies.

The objective of the Civil Engineering program is to prepare students for a wide range of career paths that use civil engineering principles and methodologies. A curriculum is provided that prepares our recent graduates to:

begin and sustain a career in consulting, industry, or state and federal government agencies, such as the departments of transportation and departments of environmental protection;

lead and work in interdisciplinary teams needed to design sustainable and resilient infrastructure through knowledge and application of environmental, geotechnical, materials, structural, transportation, and water resources engineering;

engage in life-long learning opportunities, including graduate school; and

obtain and maintain professional licensure

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

The undergraduate program will provide students with:

- a. an ability to apply knowledge of mathematics, science, and engineering;
- b. an ability to design and conduct experiments, as well as to analyze and interpret data;
- c. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- d. an ability to function on multidisciplinary teams;
- e. an ability to identify, formulate, and solve engineering problems;
- f. an understanding of professional and ethical responsibility;
- g. an ability to communicate effectively;
- h. an understanding of the impact of engineering solutions in a global, economic, environmental, and societal context;

- i. a recognition of the need for, and an ability to engage in, life-long learning;
- j. knowledge of contemporary issues in civil engineering;
- k. an ability to use modern engineering techniques, skills, and tools necessary for engineering practice.

The program is broadened by courses in communication, arts, humanities, social and behavioral sciences, as well as other engineering disciplines. Students gain experience in working as members of a team and using interdisciplinary approaches to solve problems. These experiences, as well as those related to engineering principles and design, are provided through exercises in the classroom, laboratory, and field. The program culmination is a capstone design course wherein the students' knowledge and skills are applied to actual engineering problems.

**ENTRANCE TO MAJOR** -- In addition to the minimum grade point average (GPA) requirements\* described in the University Policies, all College of Engineering entrance to major course requirements must also be completed with a minimum grade of C: CHEM 110 (GN), MATH 140 (GQ), MATH 141 (GQ) and PHYS 211 (GN). All of these courses must be completed by the end of the semester during which the admission to major process is carried out.

\*In the event that the major is under enrollment control, a higher minimum cumulative grade-point average is likely to be needed and students must be enrolled in the College of Engineering or Division of Undergraduate Studies at the time of confirming their major choice.

For the B.S. degree in Civil Engineering, a minimum of 127 credits is required. The baccalaureate program in Civil Engineering at Harrisburg is accredited by the Engineering Accreditation Commission of ABET, Inc., [www.abet.org](http://www.abet.org).

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

**GENERAL EDUCATION:** 45 credits

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

**FIRST-YEAR SEMINAR:**

(Included in REQUIREMENTS FOR THE MAJOR)

**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:** 112 credits

(This includes 27 credits of General Education courses: 9 credits of GN courses; 6 credits of GQ courses; 3 credits of GS courses; 9 credits of GWS courses.)

**PRESCRIBED COURSES** (71 credits)

CHEM 110 GN(3)[1], CHEM 111 GN(1), EMCH 211(3)[1], EDSGN 100(3), MATH 140 GQ(4)[1], MATH 141 GQ(4)[1], PHYS 211 GN(4)[1] (Sem: 1-2)  
EMCH 212(3)[1], EMCH 213(3)[1], STAT 401(3), GEOSC 001(3), MATH 220 GQ(2), MATH 251(4)[1], PHYS 212 GN(4)[1] (Sem: 3-4)  
CE 310(3)[1], CE 321(3)[1], CE 332(3)[1], CE 335(3)[1], CE 336(3)[1], CE 340(3)[1], CE 360(3)[1], CE 370(3)[1], ENGL 202C GWS(3) (Sem: 5-6)

**ADDITIONAL COURSES** (29-32 credits)

CE 100(1) or 1 credit of First-Year Seminar or elective (Sem: 1-2)

ENGL 015 GWS(3) or ENGL 030 GWS(3) (Sem: 1-2)

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

CMPSC 200 GQ(3) or CMPSC 201 GQ(3) (Sem: 3-4)

ECON 102 GS(3), ECON 104 GS(3), or ECON 014 GS(3) (Sem: 3-4)

ME 201(3) or CHE 220(3)[30] (Sem: 5-6)

CE 337(1) or CE 475(4) (Sem: 5-6)[+ 1]

Select 9 credits from CE 341(3), CE 342(3), CE 371(3), CE 422(3), CE 423(3), CE 432(3), CE 435(3), CE 436(3), CE 437(3), CE 441(3), CE 447(3), CE 461(3), CE 462(3), CE 475(4), CE 476(3), CE 479(3) (Sem: 5-8)[#]

Select 3 credits of CE level "W" courses (Sem: 5-8)

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

Select 9 credits of technical elective from CE 300-level courses, CE 400-level courses, or department list. (Sem: 7-8)

**Integrated B.S. in Civil Engineering/M.Eng. in Environmental Engineering Program**

The Civil Engineering undergraduate and Environmental Engineering graduate program offers a limited number of academically superior Bachelor of Science candidates the opportunity to enroll in an integrated, continuous program of study leading to both the Bachelor of Science in Civil Engineering and the Master of Engineering in Environmental Engineering. The ability to coordinate as well as concurrently pursue the two degree programs enables the student to earn the two degrees in five years.

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science and Master of Engineering degrees. However, the total course load is reduced due to the maximum of 10 credits that can count towards both degrees. A minimum of 7 credits proposed to count for both degrees must be at the 500 level. Master's paper credits may not be double counted. The first three years of the IUG program are identical to the first three years of the Bachelor of Science program. The fourth year of the IUG program differs from that of the Bachelor of Science program due to the courses that count toward the Master of Science degree requirements.

Students will be admitted on a provisional basis late in their 6th semester so that they may be advised appropriately for the IUG 7th semester courses. Formal acceptance is contingent upon maintaining a 3.0 cumulative GPA through the 6th semester, and a collective GPA of 3.3 or better in courses designated MATH, CHEM, CE, or ENVE.

Student performance will be monitored on an on-going basis. In addition, a formal evaluation of student academic performance will be performed when the student has completed 114 to 115 credits, the end of the first semester of the senior year for a typical student in the program. Students who have not maintained a collective 3.3 GPA in courses designated MATH, CHEM, CE, or ENVE will be transferred to a probationary status. Students who have not maintained a collective GPA of 3.3 or better in courses designated MATH, CHEM, CE, or ENVE by end of their eighth semester will be **dropped** from the graduate program but will continue in the Bachelor of Science C E degree program.

If for any reason a student admitted to the IUG program is unable to complete the requirements for the Master of Engineering degree, the student will be permitted to receive the Bachelor of Science degree, assuming all the undergraduate degree requirements have been completed satisfactorily.

Students have the choice of receiving the B.S. 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. Note that students who are awarded a graduate assistantship must elect to receive the B.S. degree at the end of the fourth year. If for any reason a student admitted to the IUG program is unable to complete the requirements for the Master of Science degree, the student will be permitted to receive the Bachelor of Science degree assuming all the undergraduate degree requirements have been satisfactorily completed. Students who successfully complete the courses listed in the recommended schedule will satisfy the requirements for the Bachelor of Science degree by the end of their fourth year.

### **Admission Requirements**

To apply, students must be enrolled in the PSH Civil Engineering B.S. program. To initiate the application process, students must submit an *Integrated Undergraduate-Graduate (IUG) Degree in Civil Engineering Application Form*, a transcript, and three faculty recommendations. If the student expresses interest early in their undergraduate career, their faculty adviser will help undergraduate candidates determine a sequence of courses that will prepare them for acceptance into the Integrated Undergraduate-Graduate (IUG) degree program. In order to apply for the IUG program, students must have completed a minimum of 82 credits. At the time of the application, students must have completed or be enrolled in CE 335, 336, 360, and 370.

A typical student would apply by the sixth semester and before the beginning of the seventh semester. For consideration for acceptance into the program, students must have earned a minimum cumulative grade-point average of 3.0, and a collective GPA of 3.3 or better in courses designated MATH, CHEM, CE, or ENVE.

To apply formally, students must submit a completed Graduate School application. The student should mention in the notes section that the application is for the IUG program in Civil Engineering/Environmental Engineering.

Students will be admitted on a provisional basis late in the spring semester of their application year so that they may be advised appropriately for the IUG 7th semester courses. Formal acceptance is contingent upon maintaining the 3.0 cumulative GPA through the 6th semester, and a collective GPA of 3.3 or better in courses designated MATH, CHEM, CE, or ENVE.

### **Degree Requirements**

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science and Master

of Engineering degrees. The total course load is reduced due to a maximum of 10 credits that can count towards both degrees. The minimum of 7 credits double-counted must be at the 500 level. Master's paper credits may not be double counted.

**[1]** A student enrolled in this major must receive a grade of C or better, as specified in Senate Policy 82-44.  
**[30]** Students may substitute 6 credits of ROTC for 3 credits of 400-level CE courses and 3 credits of ME or EE.

**[+]** If CE 475 is taken, one credit goes toward lab requirement and remaining three go towards CE or general technical electives.

**[#]** Those courses must be selected from at least 4 of the 5 technical areas in the Civil Engineering program--transportation (x20), construction (x30), structures (x40), hydrosystems (x60), and environmental (x70).

Last Revised by the Department: Fall 2016

Blue Sheet Item #: 44-01-046

Review Date: 8/25/15

UCA Revision #1: 8/3/06

UCA Revision #2: 7/27/07

EN

## Communications

*Capital College (COMCL)*

ASSOCIATE PROFESSOR CATHERINE McCORMICK, *Program Coordinator, Communications, School of Humanities*

Communications is an interdisciplinary program that combines practical, professional instruction with critical and cultural examinations of mass media. Our interdisciplinary and theoretical approach enables our students to understand the contextual relationships between contemporary media and ethics, history, drama, and art, as well as the mechanics of emerging information technologies. We feature small classes, a multidisciplinary faculty with real-world professional experience, high-technology laboratories, and an excellent location for media internships. This major prepares students for careers in areas such as public relations, journalism, graphic design, photography, new media, advertising, media production, and telecommunications. Because of our analytical approach, students can use the major to prepare for postgraduate studies.

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

Entry to the Communications major requires a 2.00 or higher cumulative grade-point average.

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

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

**GENERAL EDUCATION:** 45 credits

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES)

**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:** 13-15 credits

(These elective credits may be applied to a minor in consultation with an academic adviser. The number of elective credits needed varies depending on whether the student participates in an internship.)

**BACHELOR OF HUMANITIES DEGREE REQUIREMENTS:** 18 credits

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

**REQUIREMENTS FOR THE MAJOR:** 42-44 credits

*At least 12 credits of Communications courses must be taken at the 400 level.*

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

COMM 251(3), COMM 456(3) (Sem: 5-8)

**ADDITIONAL COURSES** (18-20 credits)**[1]**

COMM 230(3) or COMM 260W(3) (Sem: 3-8)

Select two courses (6-8 credits) in visual communication from the following: COMM 215(3), COMM 241(3), COMM 363(3), COMM 371(4), COMM 415(3), COMM 441(3), COMM 482(4) (Sem: 3-8)

Select 9 credits in Communications from the following: COMM 215(3), COMM 241(3), COMM 250(3), COMM 320(3), COMM 332(3), COMM 346(3), COMM 350(3), COMM 360(3), COMM 363(3), COMM 370(3), COMM 374(3), COMM 414(3), COMM 415(3), COMM 430(3), COMM 457(3), COMM 458(3), COMM 459(3), COMM 462(3), COMM 474(3), COMM 488(3), COMM 495(1-6) (Sem: 5-8)

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

Select 6 additional credits in Communications (Sem: 5-8)

Select 12 credits from the School of Humanities approved list in consultation with an academic adviser.

These credits may be applied to a minor in support of the student's interests (Sem: 5-8)

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

Last Revised by the Department: Fall Semester 2007

Blue Sheet Item #: 35-07-130

Review Date: 6/12/07

CL

## Computer Science

*Capital College (COMP)*

PROFESSOR THANG N. BUI, *Program Chair, School of Science, Engineering, and Technology*

This program is designed to prepare students for employment as computer scientists in engineering, scientific, industrial, and business environments as software developers, programmers, and systems analysts. While most students will enter the job market directly upon graduation, graduate school in computer science or related areas is also an option. Selection of electives can be tailored for students pursuing this path.

The Computer Science major provides a solid foundation in the areas of systems programming, algorithm design, artificial intelligence, and engineering large software systems using state-of-the-art methodologies and programming languages.

Students may expect to: develop a solid foundation in mathematical studies relevant to computer science; master skills in computer science; enjoy possibilities for internships and part-time employment with local companies; and become problem solvers. These goals are consistent with the goals outlined by the Association of Computing Machinery.

For a B.S. degree in Computer Science, a minimum of 120 credits is required.

**Entry to Major Requirements:**

Entry to the Computer Science major requires that the student has earned a C or better in the following courses: MATH 140 GQ(4), MATH 141 GQ(4), CMPSC 121(3), and CMPSC 122(3). A 2.00 or higher cumulative grade-point average is required.

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

**GENERAL EDUCATION:** 45 credits

(13 of these 45 credits are included in REQUIREMENTS FOR THE MAJOR.)

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

Incoming first-year students are required to complete a course with the suffix S, T, or X, or the PSU abbreviation.

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

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

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**REQUIREMENTS FOR THE MAJOR: 88 credits**

(This includes 13 credits of General Education courses: 3 credits of GWS courses, 6 credits of GQ courses, and 4 credits in GN courses.)

**PRESCRIBED COURSES (59 credits) [2]**

MATH 140 GQ(4)[1], MATH 141 GQ(4)[1] (Sem: 1-2)

CMPSC 121 GQ(3)[1], PHYS 211 GN(4) (Sem: 2)

CMPSC 122(3)[1], CMPSC 360(3)[1] (Sem: 3)

CMPSC 221(3), CMPSC 312(3), MATH 220(2) (Sem: 4)

CMPSC 430(3), CMPSC 460(3), CMPSC 462(3), CMPSC 463(3), CMPSC 469(3), CMPSC 470(3), CMPSC 472(3),

CMPSC 487(3), CMPSC 488(3), ENGL 202C GWS(3) (Sem: 5-8)

**ADDITIONAL COURSES (18 credits)**

MATH 318(3), STAT 301 GQ(3), or STAT 318(3) (Sem: 5-8)

Select 15 credits from the following (9 of which must have a CMPSC prefix): CMPSC 313(3), CMPSC

412(1.5), CMPSC 413(1.5), CMPSC 426(3), CMPSC 428(3), CMPSC 438(3), CMPSC 441(3), CMPSC 444(3),

CMPSC 455(3), CMPSC 457(3), CMPSC 475(3), CMPSC 496(1-9), CMPSC 497(1-9), MATH 401(3), MATH

411(3), MATH 412(3), MATH 425(3), MATH 430(3), MATH 431(3), MATH 435(3), MATH 449(3), MATH 450(3),

MATH 455(3), MATH 465(3), MATH 468(3), MATH 496(1-9), MATH 497(1-9) (Sem: 5-8)

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

Select 6 credits of 300-400 level courses in consultation with an academic adviser and in support of the student's interests. (Sem: 5-8)

Select 5 credits of 100-400 level courses (Sem: 5-8)

## Integrated B.S./M.S. Program in Computer Science

The Computer Science program offers a limited number of academically superior Bachelor of Science candidates the opportunity to enroll in an integrated, continuous program of study leading to both the Bachelor of Science and the Master of Science in Computer Science. The ability to coordinate as well as concurrently pursue the two degree programs enables the student to earn the two degrees in five years.

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science and Master of Science degrees. However, the total course load is reduced due to the maximum of 12 credits that can count towards both degrees. A minimum of 6 credits proposed to count for both degrees must be at the 500 level. Thesis credits may not be double counted. The first two years of the IUG program are identical to the first two years of the Bachelor of Science program. The third and fourth years of the IUG program differ from those of the Bachelor of Science program due to the courses that count toward the Master of Science degree requirements. Student performance will be monitored on an on-going basis. In addition, a formal evaluation of student academic performance will be performed when the student has completed 100 to 105 credits, which is at the end of the first semester of the senior year for a typical student in the program.

Students who have not maintained a 3.5 GPA in their Math and Computer Science courses will be put on probationary status with respect to the IUG program. Their ability to continue in the IUG program will be based on their academic performance in the last semester of their senior year. As part of the review in the senior year, students will be advised about the paper option and thesis option in the graduate program. Students intending to pursue the thesis option would be advised to do so only if they have been doing very well in the program and are in no danger of not being able to continue into the fifth year. A minimum grade point average of 3.5 must be earned in all math and computer science course work that is applied toward the graduate degree. This includes any courses that count toward both the undergraduate and graduate degrees, as well as all courses taken during the fifth year.

Students have the choice of receiving the B.S. 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. Note that students who are awarded a graduate assistantship must elect to receive the B.S. degree at the end of the fourth year. If for any reason a student admitted to the IUG program is unable to complete the requirements for the Master of Science degree, the student will be permitted to receive the Bachelor of Science degree assuming all the undergraduate degree requirements have been satisfactorily completed. Students who successfully complete the courses listed in the recommended schedule 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 an Integrated Undergraduate-Graduate (IUG) Degree in Computer Science Application Form, a transcript, and a faculty recommendation, in addition to



applying for admission to the Graduate School. A faculty adviser will help undergraduate candidates determine a sequence of courses that will prepare them for acceptance into the Integrated Undergraduate-Graduate (IUG) degree program. In order to apply for the IUG program, students must have completed a minimum of 45 credits. A typical student would apply after completing between 45 to 60 credits, that is, after the fourth semester and before the end of the fifth semester. For consideration for acceptance into the program, students must have completed and earned a minimum grade point average of 3.0 in the following Computer Science and Mathematics courses: MATH 140, MATH 141, MATH 220, CMPSC 121, CMPSC 122, and CMPSC 360. Student applications will be evaluated based on their overall academic performance, in addition to the above requirements. In all cases, admission to the program will be at the discretion of the Graduate Admissions Committee in Computer Science.

## **Degree Requirements**

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science and Master of Science degrees. The total course load is reduced due to the maximum of 12 credits that can count towards both degrees. The minimum of 6 credits double-counted must be at the 500 level. Thesis credits may not be double counted.

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

**[2]** Students must earn a 2.5 or higher grade point average in the following courses: CMPSC 221, CMPSC 312, CMPSC 360, CMPSC 430, CMPSC 460, CMPSC 462, CMPSC 463, CMPSC 469, CMPSC 470, CMPSC 472, CMPSC 487, and CMPSC 488.

Last Revised by the Department: Spring Semester 2013

Blue Sheet Item #: 41-06-032

Review Date: 04/09/2013

Retention and Transfer # 236 updated 5/22/13

UCA Revision #1: 8/3/06

UCA Revision #2: 7/27/07

CL

## **Criminal Justice**

*Capital College (CRIMJ): Penn State Harrisburg  
World Campus*

PROFESSOR DONALD HUMMER, *Program Chair, School of Public Affairs*

The Bachelor of Science degree program in Criminal Justice helps provide its graduates with the communications and analytical skills critical to succeed in criminal justice and related careers. Through an interdisciplinary approach to the problems of crime and society, the program also equips students to pursue graduate study in criminal justice or related disciplines, and educates students to become effective problem-solvers as professionals in the field of criminal justice.

The study of criminal justice is approached as an applied interdisciplinary science, teaching students both the theoretical and the practical aspects of crime control and the administration of justice. The Criminal Justice curriculum provides students with the opportunity and assistance to acquire knowledge of the roles of policing, courts, laws, and corrections as they relate to both the adult and juvenile justice system. Students also gain knowledge of the history, concepts, and critical issues related to the role of gender and race/ethnicity in the criminal justice system, victimology, and ethics in criminal justice. The curriculum further provides a theoretical foundation of the discipline, combined with a thorough understanding of the scientific method as it applies to criminal justice. This combination is expected to sharpen the students' talents of reasoning and judgment, qualities imperative to rational functioning in criminal justice and related professions.

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

### **Admission Requirements for Transfer Students:**

Transfer applicants must have at least a 2.0 cumulative grade-point average (4.0 scale). The evaluation of prior college work is conducted on an individual basis by the Office of Enrollment Services at both campuses.

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

The student must have a 2.00 cumulative grade-point average and an average of C (2.00) or better in any

course already taken in the major.

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

**GENERAL EDUCATION:** 45 credits

(3-4 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)

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

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 17-19 credits

**REQUIREMENTS FOR THE MAJOR:** 60-61 credits

(This includes 3-4 credits of General Education courses: 3-4 credits of GQ courses.)

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

CRIMJ 012 GS(3), CRIMJ 100 GS(3), CRIMJ 210(3), CRIMJ 220(3), CRIMJ 230(3), CRIMJ 250(3), CRIMJ 450(3), CRIMJ 465(3) (Sem: 5-8)

(At least 9 credits in Additional Courses and/or Supporting Courses must be at the 400 level.)

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

Select 3-4 credits from CRIMJ 260 GQ(3) or STAT 200 GQ(4) (Sem: 5-8)

Select 6 credits from the following: CRIMJ 201(3), CRIMJ 221(3), CRIMJ 234(3), CRIMJ 241(3) (Sem 5-8)

Select 6 credits from the following: CRIMJ 300(3-6), CRIMJ 301(3-6), CRIMJ 304(3), CRIMJ 389(3), CRIMJ 406(3), CRIMJ 407 US(3), CRIMJ 408(3), CRIMJ 410(3), CRIMJ 413(3), CRIMJ 414(3), CRIMJ 415(3), CRIMJ 421(3), CRIMJ 423 US(3), CRIMJ 425(3), CRIMJ 426(3-6), CRIMJ 430(3), CRIMJ 431(3), CRIMJ 441 US(3), CRIMJ 453 US(3), CRIMJ 460(3), CRIMJ 462(3), CRIMJ 489(3), CRIMJ 495(3-12), CRIMJ 496(1-18), CRIMJ 497(1-9) (Sem: 5-8)

Or Select 12 credits from the following: CRIMJ 300(3-6), CRIMJ 301(3-6), CRIMJ 304(3), CRIMJ 389(3), CRIMJ 406(3), CRIMJ 407 US(3), CRIMJ 408(3), CRIMJ 410(3), CRIMJ 413(3), CRIMJ 414(3), CRIMJ 415(3), CRIMJ 421(3), CRIMJ 423 US(3), CRIMJ 425(3), CRIMJ 426(3-6), CRIMJ 430(3), CRIMJ 431(3), CRIMJ 441 US(3), CRIMJ 453 US(3), CRIMJ 460(3), CRIMJ 462(3), CRIMJ 489(3), CRIMJ 495(3-12), CRIMJ 496(1-18), CRIMJ 497(1-9) (Sem: 5-8)

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

Select 6 credits: 3 credits at the 200 level and 3 credits at the 300 and 400 level or 6 credits at the 300 and 400 level from the following: AFRAS, BE SC, PL SC, PUBPL, PSYCH, SOC (Sem: 5-8)

Select 15 credits in consultation with an academic adviser and in support of the student's interests. For information about specific courses in this area, contact the School of Public Affairs. (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 2013

Blue Sheet Item #: 42-04-018

Review Date: 01/14/2014

UCA Revision #1: 8/20/06

UCA Revision #2: 7/27/07

## Electrical Engineering

*Capital College (E ENG)*

*AB SHAFAYE, Program Chair, School of Science, Engineering, and Technology*

The Bachelor of Science degree in Electrical Engineering provides a solid background in electrical engineering sciences. It also provides an opportunity for students to pursue interests in electrical and electronic circuits, including digital circuits and VLSI and its fabrication, microprocessors and their applications, electromagnetics, communications, control systems, and digital image processing and

computer vision. Through participation in a senior capstone design, the curriculum emphasizes written as well as verbal communication and teamwork approach among the students to attain a common goal.

This program helps its graduates develop capabilities to analyze and design a variety of electrical and electronic systems found in many industrial and government settings as well as provide a foundation for further graduate studies. A strong background in the fundamentals is built through a broad base core in basic sciences (physics and chemistry) and mathematics as well as engineering sciences.

For a B.S. degree in Electrical Engineering a minimum of 134 credits is required.

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

Entry to the Electrical Engineering major requires that the student has completed: MATH 140 GQ(4), MATH 141 GQ(4), PHYS 211 GN(4), and CHEM 110 GN(3), CHEM 111 GN(1). A 2.00 or higher cumulative grade-point average is required.

*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 this bulletin.)

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

(Included in ELECTIVES)

#### **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:** 3-5 credits

#### **REQUIREMENTS FOR THE MAJOR:** 113-115 credits

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

#### **PRESCRIBED COURSES** (93 credits)

CHEM 110 GN(3), CHEM 111 GN(1), EDSGN 100(3) (Sem: 1-2)

ENGR 320Y GS;US;IL(3), EMCH 211(3), MATH 140 GQ(4)[1], MATH 141 GQ(4)[1], MATH 220 GQ(2), MATH 230(4), MATH 250(3), PHYS 211 GN(4)[1], PHYS 212 GN(4)[1], PHYS 213 GN(2), PHYS 214 GN(2) (Sem: 1-4)

EE 330(4), ENGL 202C GWS(3) (Sem: 3-4)

SSET 295(1) (Sem: 4)

EE 485(3) (Sem: 5-6)

CMPEH 472(4), CMPEN 271(3)[1], CMPEN 275(1)[1], EE 210(4), EE 310(4)[1], EE 311(3), EE 317(2), EE 341(3),

EE 352(4)[1], EE 405(1), EE 406(3)[1], EE 461(4), EE 481(4) (Sem: 7-8)

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

Select 3 credits from: ECON 102 GS(3) or ECON 104 GS(3) or ECON 14 GS(3) (Sem: 1-4)

Select 3 credits from: CMPSC 201 GQ(3), or CMPSC 121 GQ(3), or CMPSC 202 GQ(3) (Sem: 3-4)

Select 3-4 credits from MATH 444(3)[1] or MATH 446(3)[1] or STAT 200 GQ(4)[1] (Sem: 4-6)

#### **SUPPORTING COURSES AND RELATED AREAS** (11-12 credits)

Select 11-12 credits in consultation with an academic adviser and in support of the student's interests. (Sem: 7-8)

## **Integrated B.S./M.S. Program in Electrical Engineering**

The Electrical Engineering program offers a limited number of academically superior Bachelor of Science candidates the opportunity to enroll in an integrated, continuous program of study leading to both the Bachelor of Science and the Master of Science in Electrical Engineering. The ability to coordinate as well as concurrently pursue the two degree programs enables students to earn the two degrees in five years.

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science and Master of Science degrees. However, the total course load is reduced due to the maximum of 12 credits that can count towards both degrees. A minimum of 7 credits proposed to count for both degrees must be at the 500 level. Thesis credits may not be double counted. The fourth year of the IUG program differs from the fourth year of the Bachelor of Science program due to the courses that count toward the Master of Science Degree requirements. Student performance will be monitored on an on-going basis. In addition, a formal evaluation of student's academic performance will be conducted at the end of the first semester of the senior year for a typical student in the program. Students who have not maintained a 3.4 GPA in their Math

and Electrical Engineering courses will be put on probationary status with respect to the IUG program. Their ability to continue in the IUG program will be based on academic performance in the last semester of their senior year. As part of the review in the senior year, students will be advised about the thesis requirement in the graduate program.

Students have the choice of receiving the B.S. 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 a student admitted to the IUG program is unable to complete the requirements for the Master of Science degree, the student will be permitted to receive the Bachelor of Science degree assuming all the undergraduate degree requirements have been satisfactorily completed. If 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 an *Integrated Undergraduate-Graduate (IUG) Degree in Electrical Engineering Application Form*, an official transcript, three letters of professional recommendation from individuals who can evaluate the applicant's potential, and a personal statement of technical interest and goals. A faculty adviser will help undergraduate candidates determine a sequence of courses that will prepare them for acceptance into the Integrated Undergraduate-Graduate (IUG) degree program. In order to apply for the IUG program, students must have completed a minimum of 81 credits; therefore a typical student would apply after completing the fifth semester and before the end of the sixth semester. For consideration for acceptance into the program, students must have cumulative grade point average (GPA) of 3.4 or better and collective GPA of 3.4 or better in the following courses: CMPEN 271, CMPEN 275, E E 315 (or equivalent), E E 341, CMPEH 472 and all the designated MATH, PHYS, and CMPSC courses. Applications will be evaluated based on students' overall academic performance, in addition to the above requirements. In all cases, admission to the program will be at the discretion of the Graduate Admissions Committee of the Electrical Engineering program.

## Degree Requirements

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science and Master of Science degrees. The total course load is reduced due to the maximum of 12 credits that can count towards both degrees. The minimum of 7 credits double-counted must be at the 500 level. Thesis credits may not be double counted.

B.S. Degree Portion:

TOTAL B.S. REQUIREMENTS: 134 credits  
(12 double-counted with the M.S. Requirements)

General Education: 45 credits  
(21 of these are included in the REQUIREMENTS FOR MAJOR)

Electives: 0-4 credits

Requirements for the Major: 110-113 credits

Prescribed Courses: 87 credits  
As listed by the B.S. E ENG bulletin with the following change  
CMPSC 436 can be replaced by an EEO 400 or System 400 Elective

Additional Courses: 14-17 credits  
Select 3 credits from ECON 102 GS(3) or ECON 104 GS(3) or ECON 014 GS(3)  
Select 3 credits from CMPSC 201 GQ(3) or CMPSC 121 GQ(3) or CMPSC 202 GQ(3)  
Select 3-4 credits from MATH 444(3) or MATH 446(3) or STAT 200 GQ(4)  
Select 5-7 credits from EE 315(5) or EE 210(4) and EE 314(3)

Supporting Courses and Related Areas: 9 credits  
EMCH 524A (3), and  
Electronics-Electromagnetics- Optics Option: one EEO 400-level (3) and One EEO 500-level (3), or  
Systems Option: one System 400 (3) and One System 500-level (3).

M.S. Degree Portion:  
TOTAL M.S. REQUIREMENTS: 31 credits  
(12 double-counted with B.S. Requirements)

[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 #: 45-04-056

Review Date: 1/10/2017

UCA Revision #1: 8/3/06

UCA Revision #2: 7/27/07

CA

## Electrical Engineering Technology

*Capital College (E E T)*

*University College, Penn State Wilkes-Barre*

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

*AB SHAFAYE, Program Chair, School of Science, Engineering, and Technology*

The Bachelor of Science graduate with a major in Electrical Engineering Technology (E E T) is an engineering technologist who can bridge the gap between scientific advancement and practical electrical devices and systems. Research in all fields of electrical engineering has produced an abundance of new knowledge in recent years. Many of these advanced scientific achievements have been unused due to the shortage of engineering technologists specifically educated to convert scientific information into practical devices and systems.

The E E T major helps equip students with the various skills necessary to adapt new scientific knowledge to new products. Technical selections are offered in the senior year to provide some degree of specialization, but all graduates receive a well-rounded basic education in electrical and electronic design principles. The strengths of the program include: an applied hands-on program; extensive laboratory experience; promising job placement; and accreditation by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone 410-347-7700, Web at [www.abet.org](http://www.abet.org).

E E T graduates who wish to continue their professional development can take the Fundamentals of Engineering examination in Pennsylvania, a prerequisite for taking the Professional Engineering examination.

For a B.S. degree in Electrical Engineering Technology, a minimum of 128 credits is required.

### **Admission Requirements for Transfer Students:**

Applicants must have earned a high school diploma or equivalent and have attempted at least 18 semester credits at a regionally accredited college or university with at least a 2.0 cumulative grade-point average (4.0 scale). The evaluation of prior college work is done on an individual basis by the Office of Enrollment Services at Penn State Harrisburg.

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

Entry to the Electrical Engineering Technology major requires a 2.00 or higher cumulative grade-point average.

### **Re-enrollment:**

Associate degree students should file a re-enrollment form during the final semester of their associate degree. Students re-enrolling from an associate's degree into the bachelor's degree should run a degree audit from LionPATH, using the E E T major code, to determine their curriculum requirements. Similar considerations apply to students changing majors from programs in science or engineering.

Students are directed to <http://www.psu.edu/bulletins/bluebook/gened/> for an explanation of the Penn State General Education requirements.

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

**GENERAL EDUCATION:** 45 credits

(18 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)

**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:** 5-16 credits

**REQUIREMENTS FOR THE MAJOR:** 85-96 credits

(This includes 18 credits of General Education courses: 3 credits of GWS courses; 9 credits of GN courses; 6 credits of GQ courses.)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 59-70 credits

**PRESCRIBED COURSES** (27 credits)

CHEM 110 GN(3), CHEM 111 GN(1), MATH 140 GQ(4), MATH 141 GQ(4) (Sem: 1-6)

EET 312(4)[1], EET 331(4)[1], ENGL 202C GWS(3) (Sem: 5-6)

EET 419(1), EET 420(3)[1] (Sem: 7-8)

**ADDITIONAL COURSES** (32-43 credits)

Select 2\*-3 credits from: EGT 101(1) and EGT 102(1) or EDSGN 100(3) (Sem: 1-2)

Select 3 credits from: CMPSC 101 GQ(3), CMPSC 121 GQ(3) or CMPSC 201 GQ(3) (Sem: 1-5)

Select 6\*-8 credits from sequence a or b:

a.) PHYS 150 GN(3) and PHYS 151 GN(3) (Sem: 3-4)

b.) PHYS 211 GN(4) and PHYS 212 GN(4) (Sem: 1-4)

Select 3-4 credits from MATH 230(4), MATH 250(3), MATH 408(3), MATH 411(3), MATH 444(3), MATH 446(3), or STAT 200 GQ(4) (Sem: 5-6)

Select 5-8\* credits from course sequence a, b, or c:

a.) EET 114(4) and EET 311(4)[1] (Sem: 1-6)

b.) EE 210(4)[1] and EE 314(3)[1] (Sem: 3-6)

c.) EE 315(5)[1] (Sem: 5-6)

Select 4\* credits from: CMPEN 271(3) and CMPEN 275(1) or CMPET 117(3) and CMPET 120(1) (Sem: 1-4)

Select 3\*-4 credits from: CMPEH 472(4) or CMPET 211(3) (Sem: 3-6)

Select 3\*-4 credits from: EET 205(1) and EET 210(2) or EE 310(4) (Sem: 3-6)

Select 3-5\* credits from: EET 213W(5) or EE 485(3) (Sem: 3-6)

\*Courses required by PSU 2 EET programs

**REQUIREMENTS FOR THE OPTION:** 26 credits

**COMPUTER ENGINEERING TECHNOLOGY OPTION:** (26 credits)

**PRESCRIBED COURSES** (11 credits)

CMPEN 431(3) , CMPET 403(4), CMPET 401(3), CMPET 402(1) (Sem: 5-8)

**ADDITIONAL COURSES** (15 credits)

2nd Programming Elective: Select 3 credits from: CMPSC 305(3), CMPSC 402(3), CMPSC 422(3), CMPSC 122(3) (Sem: 7-8)

Applications Elective: Select 4 credits of technical electives from: CMPET 412(4), EET 423(4), EET 456(4) (Sem: 7-8)

CMPET Technical Electives: Select 8 credits from CMPEH 449(3), EE 341(3), EE 418(3), EE 453(3), EET 402(4), EET 408(4), EET 413(4), EET 414(4), EET 431(4), EET 433(4), EET 478(4), ET 496(1) (Sem: 7-8)

**GENERAL ELECTRICAL ENGINEERING TECHNOLOGY OPTION:** (26 credits)

**ADDITIONAL COURSES** (26 credits)

System Elective: Select 8 credits of technical electives from: EET 408(4), EET 409(4), EET 433(4) (Sem: 7-8)

Electronics Elective: Select 4 credits from: EET 402(4), EET 423(4), EET 431(4) (Sem: 7-8)

GEET Technical Electives: Select 8 credits of GEET technical electives from: CMPEH 449(3), CMPET 401(3), CMPET 402(1), CMPEN 431(3), EE 418(3), EE 453(3), EE 458(3), EET 401(4), CMPET 403(3), EET 410(4), CMPET 412(4), EET 413(4), EET 414(4), EET 456(4), EET 478(4), ET 496(1) (Sem: 7-8)

Select 6 credits from any previous elective list plus CMPSC 452(3), EMCH 211(3), EMCH 212(3), ME 201(3) (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: Summer Session 2007

Blue Sheet Item #: 35-06-217

Review Date: 2/20/08

UCA Revision #1: 8/3/06

UCA Revision #2: 7/27/07

CL

## Elementary Education

*Capital College (ELEM)*

PROFESSOR CAROLYN GRIESS, [cjg130@psu.edu](mailto:cjg130@psu.edu), *Elementary Education Coordinator, School of Behavioral Sciences and Education*

The Elementary Education program at Penn State Harrisburg embodies the four tenets of our conceptual framework: constructivism, authenticity, reflectivity, and standards-based curriculum. Constructivism entails a student-centered approach in which teachers help learners build their own understandings. Authenticity refers to developing professional and pedagogical skills in authentic classroom settings; for example, in the junior and senior years prior to student teaching, the program offers extensive field experiences in a variety of settings enrolling students with diverse backgrounds and needs. Reflectivity relates to consciously analyzing course content and one's own learning for the purpose of deeper understanding and self-improvement. Standards-based curriculum means that our candidates are steeped in Pennsylvania Academic Standards as well as the standards of relevant professional organizations. Taken together, these tenets enable our candidates to become *lifelong reflective professionals committed to the learning of all students*.

Students will choose one of four options for the degree: PK-4 Early Childhood Education, Grades 4-8 English/Language Arts and Reading, Grades 4-8 Mathematics, and Grades 4-8 Social Studies. Upon successful completion of this major, students will have met all of the requirements for either the Grades PK-4, Grades 4-8 English/Language Arts and Reading, Grades 4-8 Mathematics, or Grades 4-8 Social Studies Instructional I certification issued by the Pennsylvania Department of Education. Students must apply for admission to the major.

Prior to the full-time student teaching experience in the senior year, candidates are expected to complete all other courses required for certification, including two field placements. On-campus courses are scheduled three or four days a week, while field experiences in nearby schools are scheduled part-time, three or four days per week.

For a B. ELED. degree in Elementary Education, PK-4 Early Childhood Option a minimum of 126 credits are required; Grade 4-8 English/Language Arts and Reading Option a minimum of 126 credits are required; Grade 4-8 Mathematics Option a minimum of 126 credits are required; and Grade 4-8 Social Studies Option a minimum of 126 credits are required.

### **Admission Requirements:**

Applicants should have completed most of their first two years of college as well as the Entry to Major Requirements listed below with at least a 3.0 cumulative GPA (4.0 scale). The evaluation of prior college work is done on an individual basis by the Office of Enrollment Services at Penn State Harrisburg. Students admitted to the program must have the appropriate clearances. These include FBI fingerprint check, Act 151 child abuse history clearance, and Act 34 criminal record check.

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

Entry to the Elementary Education major requires the completion of 57 or more credits in required courses and the state's minimum cumulative GPA criteria of 3.0. Candidates must complete, with a grade of "C" or better, six (6) credits of college-level mathematics (MATH prefix), three (3) credits of college-level English literature and three (3) credits of college-level English composition. Candidates must submit scores on any entrance testing requirements established by the Pennsylvania Department of Education that are applicable at the time of application for entrance to major. Candidates who desire to pursue this major should plan their freshman and sophomore years carefully to ensure their successful progress during very structured junior and senior years. Semesters 5 through 8 are very structured.

### **Selective Retention:**

Monitoring candidate progress in the elementary education program will occur each semester while the candidate is participating in the elementary education program. Candidates will be evaluated for retention in the program based on (1) maintaining a cumulative GPA of 3.0 or higher; (2) performance on any test requirements set out by the Pennsylvania Department of Education in force at the time of application for entrance to major; (3) satisfactory completion of required courses, including the field experience component; (4) adequate writing and speaking skills as demonstrated in various classroom assignments;

and (5) a positive rating on the Penn State Harrisburg Professional Dispositions for Teacher Education Programs monitoring form. Candidates must pass any entrance test requirements set out by the Pennsylvania Department of Education in effect at the time of application for entrance to the major.

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

**GENERAL EDUCATION:** 45 credits

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

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

**FIRST-YEAR SEMINAR:**

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

**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)

**REQUIREMENTS FOR THE MAJOR:** 114 credits<sup>[1]</sup>

(This includes 33 credits of General Education courses: 9 credits of GN courses; 6 credits of GQ courses; 3-6 credits of GH courses; 6 credits of GS courses; 6 credits of GWS)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 90 credits

**PRESCRIBED COURSES** (72 credits)

GEOG 40 GS;IL(3), CI 280 GH(3), CI 295(2), EDPSY 14(3), EDTHP 115 US(3), ENGL 202A GWS(3), MATH 200 GQ(3) (Sem: 1-4)

EDMTH 301(3), EDSCI 454(3), EDUC 302(3), EDUC 304(3), EDUC 305(3), EDUC 315 US(3), EDUC 320(3), EDUC 352(3), EDUC 495A(1) (Sem: 5-6)

EDMTH 302(3), EDUC 303(3), EDUC 321(3), EDUC 353(3), EDUC 490(12), EDUC 495B(1), HLTH 306(2) (Sem: 7-8)

**ADDITIONAL COURSES** (6 credits)

Select 3 credits from: ENGL 15 GWS(3) or ENGL 30 GWS(3) (Sem: 1-2)

Select 3 credits from: ECON 102 GS(3), ECON 104 GS(3), or ECON 14 GS(3) (Sem: 1-4)

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

Select 9 credits from GN courses from approved list: 3 credits each (including one with a lab) from biological science, earth science, and physical science. (Sem: 1-4)

Select 3 credits from any MATH (GQ) (Sem:1-4)

**REQUIREMENTS FOR THE OPTION:** 24 credits

**PK-4 EARLY CHILDHOOD EDUCATION OPTION:** (24 credits)

**PRESCRIBED COURSES** (18 credits)

HDFS 229 GS(3) (Sem:1-4)

EDUC 402(3), EDUC 403(3), EDUC 404(3), EDUC 410(3), EDUC 421(3) (Sem: 5-7)

**ADDITIONAL COURSES** (6 credits)

Select 3 credits from: HIST 3 GH;US(3), HIST 12 GH;US(3), HIST 20 GH;US(3), or HIST 21 GH;US(3) (Sem: 1-4)

Select 3 credits of literature from: CMLIT 1 GH;IL(3), CMLIT 2 GH;IL(3), CMLIT 3 GH;IL(3), CMLIT 4 GH;IL(3), CMLIT 5 GH;US;IL(3), CMLIT 6 GH;IL(3), CMLIT 10 GH;IL(3), CMLIT 11 GH;IL(3), CMLIT 100 GH;IL(3), CMLIT 101 GH;US;IL(3), CMLIT 105 GH;IL(3), CMLIT 106 GH;IL(3), CMLIT 107 GH;IL(3), CMLIT 108 GH;IL(3), CMLIT 110 GH;US;IL(3), CMLIT 111 GH;IL(3), CMLIT 141 GH;US;IL(3), CMLIT 184 GH;IL(3), CMLIT 185 GH;IL(3), CMLIT 189 GH;IL(3), ENGL 1 GH(3), ENGL 2 GH(3), ENGL 103 GH(3), ENGL 104 GH(3), ENGL 129 GH(3), ENGL 133 GH(3), ENGL 134 GH(3), ENGL 135 GH;US(3), ENGL 135S GH;US(3), ENGL 139 GH;US(3), ENGL 140 GH(3), ENGL 180 GH(3), ENGL 182A GH;US;IL(3), ENGL 182C GH;IL(3), ENGL 184 GH;IL(3), ENGL 184S GH(3), ENGL 185 GH;IL(3), ENGL 189 GH;IL(3), ENGL 191 GH(3), ENGL 194 GH;US;IL(3), ENGL 262 GH(3), ENGL 263 GH(3), ENGL 265 GH(3), ENGL 268 GH(3) (Sem: 1-4)

**ENGLISH/LANGUAGE ARTS AND READING (4-8) OPTION:** (24 credits)

**PRESCRIBED COURSES** (15 credits)

HDFS 239 GS(3) (Sem:1-4)

EDUC 321(3), EDUC 322(3), EDUC 416(3), ENGL 470(3) (Sem: 5-7)

**ADDITIONAL COURSES** (9 credits)

Select 3 credits from: HIST 3 GH;US(3), HIST 12 GH;US(3), HIST 20 GH;US(3), or HIST 21 GH;US(3) (Sem: 1-4)

Select 3 credits of British Literature: ENGL 221 GH(3), ENGL 222 GH(3), ENGL 440(3), ENGL 441(3), ENGL



442(3), ENGL 443(3), ENGL 444(3), ENGL 445(3), ENGL 446(3), ENGL 447(3), ENGL 448(3), ENGL 449 US;IL(3), ENGL 450(3), ENGL 451(3), ENGL 452(3), ENGL 453(3), ENGL 454(3), ENGL 455(3), ENGL 456(3), ENGL 457(3), or ENGL 458(3) (Sem: 1-6)

Select 3 credits of American Literature: ENGL 231 GH(3), ENGL 232 GH(3), ENGL 432(3), ENGL 433(3), ENGL 434(3), ENGL 435(3), ENGL 436(3), ENGL 437(3), ENGL 438(3), or ENGL 439(3) (Sem: 1-6)

**MATHEMATICS (4-8) OPTION:** (24 credits)

**PRESCRIBED COURSES** (18 credits)

HDFS 239 GS(3), MATH 22 GQ(3), MATH 26 GQ(3), MATH 140 GQ(4), MATH 220 GQ(2) (Sem: 1-4)  
EDUC 417(3) (Sem: 6-7)

**ADDITIONAL COURSES** (6 credits)

Select 3 credits from: HIST 3 GH;US(3), HIST 12 GH;US(3), HIST 20 GH;US(3), or HIST 21 GH;US(3) (Sem: 1-4)

Select 3 credits of literature from: CMLIT 1 GH;IL(3), CMLIT 2 GH;IL(3), CMLIT 3 GH;IL(3), CMLIT 4 GH;IL(3), CMLIT 5 GH;US;IL(3), CMLIT 6 GH;IL(3), CMLIT 10 GH;IL(3), CMLIT 11 GH;IL(3), CMLIT 100 GH;IL(3), CMLIT 101 GH;US;IL(3), CMLIT 105 GH;IL(3), CMLIT 106 GH;IL(3), CMLIT 107 GH;IL(3), CMLIT 108 GH;IL(3), CMLIT 110 GH;US;IL(3), CMLIT 111 GH;IL(3), CMLIT 141 GH;US;IL(3), CMLIT 184 GH;IL(3), CMLIT 185 GH;IL(3), CMLIT 189 GH;IL(3), ENGL 1 GH(3), ENGL 2 GH(3), ENGL 103 GH(3), ENGL 104 GH(3), ENGL 129 GH(3), ENGL 129H GH(3), ENGL 133 GH(3), ENGL 134 GH(3), ENGL 135 GH;US(3), ENGL 135S GH;US(3), ENGL 139 GH;US(3), ENGL 140 GH(3), ENGL 180 GH(3), ENGL 182A GH;US;IL(3), ENGL 182C GH;IL(3), ENGL 184 GH;IL(3), ENGL 184S GH;IL(3), ENGL 185 GH;IL(3), ENGL 189 GH;IL(3), ENGL 191 GH(3), ENGL 194 GH;US;IL(3), ENGL 262 GH(3), ENGL 263 GH(3), ENGL 265 GH(3), ENGL 268 GH(3) (Sem: 1-4)

**SOCIAL STUDIES (4-8) OPTION:** (24 credits)

**PRESCRIBED COURSES** (21 credits)

HDFS 239 GS(3), HIST 12 GH;US(3), HIST 20 GH;US(3), HIST 21 GH;US(3); HIST 320(3), PLSC 1 GS(3) (Sem:1-4)  
EDUC 415(3) (Sem: 6-7)

**ADDITIONAL COURSES** (3 credits)

Select 3 credits of literature from: CMLIT 1 GH;IL(3), CMLIT 2 GH;IL(3), CMLIT 3 GH;IL(3), CMLIT 4 GH;IL(3), CMLIT 5 GH;US;IL(3), CMLIT 6 GH;IL(3), CMLIT 10 GH;IL(3), CMLIT 11 GH;IL(3), CMLIT 100 GH;IL(3), CMLIT 101 GH;US;IL(3), CMLIT 105 GH;IL(3), CMLIT 106 GH;IL(3), CMLIT 107 GH;IL(3), CMLIT 108 GH;IL(3), CMLIT 110 GH;US;IL(3), CMLIT 111 GH;IL(3), CMLIT 141 GH;US;IL(3), CMLIT 184 GH;IL(3), CMLIT 185 GH;IL(3), CMLIT 189 GH;IL(3), ENGL 1 GH(3), ENGL 2 GH(3), ENGL 103 GH(3), ENGL 104 GH(3), ENGL 129 GH(3), ENGL 129H GH(3), ENGL 133 GH(3), ENGL 134 GH(3), ENGL 135 GH;US(3), ENGL 135S GH;US(3), ENGL 139 GH;US(3), ENGL 140 GH(3), ENGL 180 GH(3), ENGL 182A GH;US;IL(3), ENGL 182C GH;IL(3), ENGL 184 GH;IL(3), ENGL 184S GH;IL(3), ENGL 185 GH;IL(3), ENGL 189 GH;IL(3), ENGL 191 GH(3), ENGL 194 GH;US;IL(3), ENGL 262 GH(3), ENGL 263 GH(3), ENGL 265 GH(3), ENGL 268 GH(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.

Lasted Revised by the Department: Fall Semester 2015

Blue Sheet Item #: 44-02-000

Review Date: 10/13/2015

R & T: 01/14/2014

UCA Revision #1: 8/3/06

**Comments**

CL

# English

*Capital College (ENGCL)*

PROFESSOR JENNIFER HIRT, *Program Coordinator, School of Humanities*

This English major, with its three options, offers students the unique opportunity to study literature in an interdisciplinary context where the relationships among literature and art, history, music, philosophy, media, and American Studies can be investigated. The major offers courses in American, British, and world literatures, emphasizing their cultural and historical contexts as well as teaching students to interpret them from a variety of critical perspectives. Small classes in both creative and expository writing encourage students to develop their writing skills by working closely with faculty.

For a B. HUM. degree in English with a General English Option, a minimum of 120 credits is required. For the

B. HUM. degree in English with Secondary Education Option, a minimum of 122 credits is required. For the B.HUM. degree in English with a Creative Writing Option, a minimum of 120 credits is required.

**Entry to Major Requirements:**

Entry to the English major requires: 1) a 2.00 or higher cumulative grade-point average; and 2) satisfaction of any entrance testing requirements set out by the Pennsylvania Department of Education in effect at the time of application for entrance to major.

**CREATIVE WRITING OPTION:** Emphasizing original works of fiction, poetry, creative nonfiction, and hybrid genres, the Creative Writing Option provides aspiring authors with a literary foundation in the craft of writing and revising original work, as well as practical skills in editing and publishing in traditional and new media formats.

**GENERAL ENGLISH OPTION:** With its emphases on interpretive skills, creativity, and writing, the General English Option provides a foundation for careers in such fields as publishing, public relations, communication, government and law, as well as a strong basis for graduate education.

**SECONDARY EDUCATION OPTION:** The Secondary Education Option enables the graduate to meet all the academic requirements for the Instructional I certificate for teaching at the secondary-school level, which is issued by the Pennsylvania Department of Education.

Students admitted to the program must have the appropriate clearances. These include FBI fingerprint check, Act 151 child abuse history clearance, and Act 34 criminal record check.

Students thinking seriously about entering the education program should plan their freshman and sophomore years carefully. Semesters 5 through 8 are very structured.

**Entry to English Major, Secondary Education option requires the following additional requirements:**

1. A minimum grade point average of 3.0.
2. Completion of ENGL 15 GWS(3) or ENGL 30 GWS(3) and three credits of literature from approved list with a C or higher grade.
3. Completion of six credits of college-level mathematics (MATH or STAT prefixes) with a C or higher grade.
4. Satisfaction of any entrance testing requirements set out by the Pennsylvania Department of Education in effect at the time of application for the major.

**Selective Retention (Secondary Education Option):**

Following entrance to the major, STUDENTS will be evaluated for retention in the program based on:

1. maintaining a cumulative GPA of 3.0 or higher;
2. completion of required courses with a C or higher grade;
3. an acceptable or above rating on the Penn State Harrisburg Professional Dispositions for Teacher Education.\*

To be eligible to student teach, STUDENTS must:

1. maintain a cumulative GPA of 3.0 or higher;
2. complete with a C or higher grade all required Content and Education Courses;
3. Satisfaction of any entrance testing requirements set out by the Pennsylvania Department of Education in effect at the time of application for entrance to major;
4. submit and pass the Writing Proficiency Portfolio that demonstrates their proficiency as writers (see English Program Coordinator for specific instructions and deadlines);
5. be rated acceptable or above on the Penn State Harrisburg Professional Dispositions for Teacher Education.\*

In order to successfully complete the Secondary Education option, STUDENTS must:

1. complete EDUC 490 with a grade of C or higher;
2. maintain a cumulative GPA of 3.0 or higher;
3. complete with a grade of C or higher, all required Content and Education Courses;
4. complete a presentation portfolio; and
5. be rated acceptable or above on the Penn State Harrisburg Professional Dispositions for Teacher Education.\*

\*FOR MORE DETAILED INFORMATION SEE THE SECONDARY EDUCATION HANDBOOK.

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

**GENERAL EDUCATION:** 45 credits

(6-15 of these credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

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

**WRITING ACROSS THE CURRICULUM:**

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

**ELECTIVES:** 0-18 credits

**BACHELOR OF HUMANITIES DEGREE REQUIREMENTS:** 18 credits

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

**REQUIREMENTS FOR THE MAJOR:** 45-74 credits

(This includes 6-15 of General Education courses: General English Option, 6 credits of General Education Arts (GA) and/or Social and Behavioral Science (GS) courses; Secondary Education Option, 6 credits of General Education Quantification (GQ) courses, 3 credits of General Education Social Sciences (GS) courses, and 6 credits of General Humanities (GH) courses.

*At least 15 credits of Prescribed, Additional, and/or Supporting courses must be taken at the 400 level.*

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 21 credits

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

ENGL 200W(3) (Sem: 5-6)

ENGL 444(3) (Sem: 7-8)

**ADDITIONAL COURSES** (3 credits)

Select 3 credits from the following: ENGL 221 GH(3), ENGL 221W(3), ENGL 222 GH(3), ENGL 222W(3), ENGL 231 GH(3), ENGL 231W(3), ENGL 232 GH(3), ENGL 232W(3) (Sem: 3-8)

**SUPPORTING COURSES AND RELATED AREAS** (12 credits) (At least 9 credits must be at the 300-400 level)

Select 3 credits in American ethnic literature or African-American literature from department list (Sem: 3-8)

Select 3 credits in world literature or comparative literature from department list (Sem: 3-8)

Select 3 credits in American literature at the 300 or 400 level from department list (Sem: 5-8)[\[1\]](#)

Select 3 credits in British literature at the 300 or 400 level from department list (Sem: 5-8)[\[1\]](#)

**REQUIREMENTS FOR THE OPTION:** 24-53 credits

**CREATIVE WRITING OPTION:** (27 credits)

**PRESCRIBED COURSES** (12 credits)

ENGL 212(3)[\[1\]](#), ENGL 213(3)[\[1\]](#), ENGL 214(3)[\[1\]](#), COMM 342 WAC(3)[\[1\]](#) (Sem: 2-4)

**ADDITIONAL COURSES** (12 credits)

In semesters 3-5, take 6 credits from this list: ENGL 136 GH(3)[\[1\]](#), ENGL 180 GH(3)[\[1\]](#), ENGL 191 GH(3), ENGL 192 GH(3), ENGL 209(3), ENGL 210(3), ENGL 211(3), ENGL 262 GH(3), ENGL 263 GH(3), ENGL 265 GH(3) or COMM 346(3)

In semesters 5-8, take 6 credits from this list: ENGL 412(3), ENGL 413(3), ENGL 415(3), ENGL 420(3), ENGL 422(3), ENGL 423(3), ENGL 424(3), ENGL 425(3), ENGL 497(3), ENGL 498(3) or COMM 446(3)

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

Select 3 credits from courses designated as Literature, Writing, or Rhetoric (any courses with an ENGL, except ENGL 4, 5, 15, 202, or CMLIT prefix) (Sem: 3-8) or from the department approved list.

**GENERAL ENGLISH OPTION:** (24 credits)

**ADDITIONAL COURSES** (6 credits)

Select 3 credits from the following: ENGL 50 GA(3), ENGL 210(3), ENGL 212(3), ENGL 213(3), ENGL 215(3), ENGL 250(3), ENGL 412(3), ENGL 413(3), ENGL 415(3), ENGL 416(3), ENGL 417(3), ENGL 418(3), ENGL 419(3), ENGL 420(3), ENGL 421(3), ENGL 422(3), ENGL 423(3), ENGL 425(3), ENGL 470(3), ENGL 491(3) (Sem: 3-8)[\[1\]](#)

Select 3 credits from the following ENGL 100(3), ENGL 191 GH(3), ENGL 196 GH:US:IL(3), ENGL 261(3), ENGL 262 GH(3), ENGL 263 GH(3), ENGL 265 GH(3), ENGL 268 GH(3), ENGL 400(3), ENGL 401(3), ENGL 407(3), ENGL 458(3), ENGL 482(3) (Sem: 3-8)

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

Select 12 credits in Literature, Writing, and/or Rhetoric (Sem: 3-8)

Select 6 credits from General Education Arts (GA) and/or Social and Behavioral Sciences (GS) (Sem: 3-8)

**SECONDARY EDUCATION OPTION:** (53 credits)

**PRESCRIBED COURSES** (44 credits)

HDFS 239 GS(3) (Sem: 1-2)

EDPSY 14(3) (Sem: 1-3)

CI 280 GH(3) (Sem: 3-4)

EDUC 313(2), EDUC 314(3), EDUC 315 US(3), EDUC 322(3), EDUC 416(3), EDUC 458(3), EDUC 490(12) (Sem: 5-8)

EDUC 459(3), ENGL 470(3) (Sem: 6-7)**[1]**

**ADDITIONAL COURSES** (9 credits)

Select 6 credits of General Education Quantification courses (GQ) with a MATH or STAT prefix (Sem: 1-4)

Select 3 credits of GH literature from department list (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: Fall Semester 2017

Blue Sheet Item #:46-01-067

Review Date: 8/22/2017

R & T: 02/24/2015

Program coordinator updated: 6/12/17

CL

## Finance

*Penn State Abington  
Capital College (FINCE)*

JANE S. KOCHANOV, *Director of Undergraduate Studies, School of Business Administration*

The finance major emphasizes analytic, problem solving, and computer skills which are necessary for finance and investment industry. The major prepares students for careers in corporate finance, investment and portfolio management, banking, public finance, and international finance. The major also prepares students who want to pursue graduate study in finance. Depending on their interests, graduates may then seek financial services credentials such as Certified Financial Planner (CFP) and Chartered Financial Analyst (CFA).

The requirements in the major complement basic business instruction in accounting, management, marketing, and information systems. With business and non-business electives, the program is designed to develop necessary skills to be an effective financial manager. Because the Harrisburg area is the center of industry and economic development for south-central Pennsylvania, students are provided with many opportunities to experience the world of business.

For a B.S. degree in Finance, a minimum of 120 credits is required. At least 50 percent of the business credit hours required for the degree must be taken at Capital College. No more than 60 credits should be from business and business-related courses.

**Entry to Major Requirements:**

Entry to the Finance major requires the completion of 8 entry-to-major courses: ACCTG 211(4)**[1]**; ECON 102 GS(3)**[1]**; ENGL 015 GWS(3) or ENGL 030 GWS(3); FIN 301(3)**[1]**; MATH 110 GQ(4)**[1]** or MATH 140 GQ(4)**[1]**; MGMT 301(3); MKTG 301(3); SCM 200 GQ(4)**[1]** or STAT 200 GQ(4)**[1]**; and a 2.00 or higher cumulative grade-point average. Additional information about this major is available in the office of the Director of Undergraduate Studies, School of Business at Penn State Harrisburg.

*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 Course Requirements 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:** Select 8 credits of non-business courses.

**REQUIREMENTS FOR THE MAJOR:** 79 credits  
(This includes 12 credits of General Education Courses: 3 credits of GWS courses; 3 credits of GS courses; 6 credits of GQ courses)

**PRESCRIBED COURSES** (49 credits)  
ACCTG 211(4)[1]; ECON 102 GS(3)[1], ENGL 202D GWS(3), FIN 301(3)[1], MGMT 301(3), MKTG 301(3) (Sem: 1-4)  
ECON 104 GS(3)[1], ECON 351(3)[1], FIN 302(3)[1], MIS 204(3), MIS 390(3) (Sem: 5-6)  
BA 364 US;IL(3), FIN 420(3)[1], SCM 301(3) (Sem: 6-7)  
BA 462(3)[1], FIN 475(3)[1] (Sem: 8)

**ADDITIONAL COURSES** (21 credits)  
Select 4 credits from MATH 110 GQ(4)[1] or MATH 140 GQ(4)[1] (Sem: 1-4)  
Select 4 credits from SCM 200 GQ(4)[1] or STAT 200 GQ(4)[1] (Sem: 1-4)  
Select 4 credits from BA 243(4) or BA 241(2) and BA 242(2) (Sem: 5-6)  
Select 9 credits[1] from the following: ACCTG 481(3), FIN 305(3), FIN 306(3), FIN 407(3), FIN 408(3), FIN 409(3), FIN 413(3), FIN 427(3) FIN 456 IL(3), FIN 461(3), FIN 489(3), FIN 496(3), or other finance courses approved by the Program (Sem: 6-8)  
(For students considering CFA exam, FIN 407, FIN 427 and FIN 461 are recommended.)

**SUPPORTING COURSES AND RELATED AREAS** (9 credits)  
Select 9 credits from 200-400 level business courses from: ACCTG, BA, ECON, FIN, MGMT, MIS, MKTG, or SCM in consultation with an academic adviser and in support of the student's interests. (Sem: 5-8)

## **Integrated B.S. in Finance and M.B.A. in Business Administration**

The School of Business Administration offers a limited number of academically superior Bachelor of Science in Finance candidates the opportunity to enroll in an integrated, continuous program of study leading to both the Bachelor of Science in Finance 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 Finance 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 four additional credits in their third year, and four 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 Finance 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 Finance 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 M.B.A. 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 Admission Committee in Business Administration.

## **DEGREE REQUIREMENTS**

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science in Finance 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 Reviewed by the Department: Fall Semester 2017

Blue Sheet Item #:46-01-068

Review Date: 8/22/2017

UCA Revision #1: 8/4/06

UCA Revision #2: 7/27/07

### **Comments**

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## **Health Policy and Administration**

*Capital College (HPACA)*

*University Park, College of Health and Human Development (H P A)*

*University College: Penn State Lehigh Valley, Penn State Mont Alto (HPACC)*

*Penn State World Campus*

PROFESSOR MARIANNE HILLEMIER, *Head of the Department*

This major helps prepare students for management and policy positions or graduate study in the field of health care. Students in the major develop the skills and knowledge needed to understand the complex societal problem of providing access to quality health care at reasonable cost. All Health Policy and Administration students complete an internship in a health-care-related setting, giving them valuable experience and contacts in the industry. HPA students study a multidisciplinary curriculum that prepares them to work as health services managers or health analysts. Health services managers, also called health care executives or health care administrators, plan, direct, and coordinate medical, health, and/or long-term care services. They might manage an entire facility or specialize in managing a specific clinical area or department, administrate a program or manage a practice for a group of providers. Health analysts are employed throughout the health care industry gathering, compiling, modeling, validating, and analyzing data needed by different organizations of providers, payers, and policy makers. Analysts help these organizations understand the current trends in the health care system and to make well-informed decisions.

Both health services managers and analysts must be able to adapt to changes in health care laws, regulations, and technology. HPA students have also used the degree to prepare for graduate study in business, law, medicine or allied health fields, health administration, health services research or policy, and public health.

The requirements for the major are outlined below. Students may select courses in the Supporting Courses and Related Areas category to fulfill requirements for a minor, to develop a specialization, or to complete courses required for admission to medical, dental, law, or other graduate schools.

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

The integrated B.S. in Health Policy and Administration/Master of Health Administration (MHA) program allows qualified undergraduate students to earn both degrees in five calendar years of full time academic study.

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. H P A requires students to complete 24 credits for the major through courses taken at University Park. Courses taken at other Penn State campuses may not be counted toward this 24 credit minimum. For more information, check the Recommended Academic Plan for this major.

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

**GENERAL EDUCATION:** 45 credits

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

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 4-6 credits

**REQUIREMENTS FOR THE MAJOR:** (81-83 credits)

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

**PRESCRIBED COURSES** (36 credits)[\[1\]](#)

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

HPA 101(3), HPA 210(3), HPA 211(3), HPA 301(3), HPA 310(3), HPA 311(3), HPA 332(3), HPA 390(3), HPA 395(3), HPA 455(3) (Sem: 1-8)

**ADDITIONAL COURSES** (15-17 credits)[\[1\]](#)

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

CMPSC 101 GQ(3) or CMPSC 203 GQ(4) (Sem: 3-4)

Select 9 credits from HPA 401 IL(3), HPA 410(3), HPA 420(3), HPA 430(3), HPA 433(3), HPA 440 US;IL(3), HPA 442(3), HPA 445(3), HPA 447(3), HPA 450(3), HPA 460(3), HPA 470(3), HPA 490(3) or HPA 497 (Sem: 5-8)

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

(Must include at least 9 credits at the 400 level)

Select 30 credits from University-wide offerings on department list in consultation with adviser (Sem: 5-8)

## **Integrated B.S. in Health Policy and Administration/Master of Health Administration (M.H.A.) Admission and Degree Requirements**

The following credentials will be considered for admission:

A demonstrated ability to communicate effectively, an advanced level of maturity, and high motivation to pursue a career in the health care field

Academic references

Successful completion of 60 credits having maintained a cumulative GPA of 3.4 or better

Students admitted to the B.S. in Health Policy and Administration/MHA integrated program are able to earn

both the B.S. and MHA in five calendar years of full time academic study.

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 (H P A); Summer Session 2005 (Integrated B.S./H P A-M.H.A.)

Blue Sheet Item #: 44-02-032 (H P A); 38-06-114A (Integrated B.S./H P A-M.H.A.)

Review Date: 10/13/2015

HH

## Human Development and Family Studies

*Penn State Altoona (HFSAL)*

*Penn State Harrisburg (HFSCA)*

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

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

*World Campus*

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

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

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

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

**LIFE SPAN HUMAN SERVICES OPTION:** This option focuses on the acquisition and application of scientific knowledge about development and family functioning across the life span for the purposes of enhancing personal and family development. Courses emphasize: (1) understanding the biological, psychological, and social development across the life span, and the structuring and functioning of families; (2) understanding basic theoretical and methodological issues; and (3) the development of applied skills in intervention and evaluation, prevention, and in the formulation of social policy. An approved field experience in a setting that serves children, youth, adults, or the aged is required for this option. Typical employment settings include preschools, daycare centers, hospital programs for children, youth, and families, institutional and community mental health programs for individuals and families, programs for abused or neglected children and adolescents, women's resource centers, human resources programs, employee assistance programs, nursing homes, area agencies on aging and other community settings for older adults, and public welfare and family service agencies. Typical postgraduate pursuits of students completing this option include graduate study in human development, family studies, psychology, or sociology, or advanced professional training in psychology, law, behavioral health, counseling or social work.

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



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

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

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

**GENERAL EDUCATION:** 45 credits

(3-4 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

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

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 3-5 credits

**REQUIREMENTS FOR THE MAJOR:** 73-76 credits

(This includes 3-4 credits of General Education GQ courses.)

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

**PRESCRIBED COURSES** (18 credits)[\[1\]](#)

HDFS 129 GS(3), HDFS 301(3), HDFS 311(3), HDFS 312(3), HDFS 315 US(3)[\[93\]](#), HDFS 418(3) (Sem: 3-6)

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

Select 6 credits from HDFS 229 GS(3), HDFS 239 GS(3), HDFS 249 GS(3) (Sem: 1-4)

STAT 200 GQ(4) or EDPSY 101 GQ(3) (Sem: 1-4)

Select 3 credits of United States Cultures (US)[\[92\]](#) (Sem: 4-8)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Last Revised by the Department: Summer Session 2006

Blue Sheet Item #: 34-02-111

Review Date: 10/11/05

HH

## Humanities

*Capital College (HUMN)*

Troy M. Thomas, Ph.D., *Program Coordinator, School of Humanities*

This major helps students appreciate, understand, and interpret relationships among the arts, ideas, media, and values that have shaped Western and world cultures. Students are taught to become active learners who can synthesize, interpret, and communicate knowledge and experience through writing, speaking, and creative expression in a variety of media. The School helps students meet these goals by offering a range of interdisciplinary and discipline-based courses in the arts, art history, communication studies, English, history, literature, music, philosophy, theatre, and writing. The course of study includes interdisciplinary courses which examine topics and time periods from the perspectives of multiple Humanities disciplines. These courses engage students in cross-disciplinary critical thinking and analysis and prepare them for work in an increasingly interdisciplinary world. Students also choose two Humanities subfields to investigate in greater depth, choosing from history and global cultures; the visual and performing arts; philosophy and religious studies; and literature and writing. Students are also encouraged to combine this major with a minor in such fields as business administration, writing, and communications. The Humanities major prepares students for careers in the arts, arts administration, business, corporate communications, government, teaching, museum work, and law, as well as providing a foundation for graduate study in a liberal arts field.

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

Entry to the Humanities major requires the completion of 27.1 or more credits and a 2.00 or higher cumulative grade-point average.

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

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

**GENERAL EDUCATION:** 45 credits

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES)

**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:** 0-15 credits

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

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

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

**REQUIREMENTS FOR THE MAJOR:** 51 credits

(At least 36 of the last 60 credits must be earned at Penn State, according to University Policy 83-80.)

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

HUM 100 GH(3), HUM 200 GH(3), HUM 300(3), HUM 400(3) (Sem: 1-8)

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

Select 6 credits from Humanities (HUM) courses: HUM 150(3), HUM 311(3), HUM 410(3), HUM 430(3), HUM 453(3), HUM 460(3), HUM 461(3), HUM 491(3), HUM 494(3), HUM 495(3), HUM 496(3), HUM 497(3), HUM 499(3) (Sem: 3-8)

### **SUPPORTING COURSES AND RELATED AREAS (33 credits)**

(At least 15 credits of supporting courses must be at the 400 level.)

Select 12 credits in one of the four following areas; select 9 credits in a second area: (Sem: 1-8)

- History and global cultures: select from HIST, CMLIT, SPAN (all courses with those prefixes), CAS 271 US;IL(3), COMM 350 IL(3), ENGL 486 IL(3), ENGL 488 IL(3), INTST 100 GS;IL(3)
- Performing and visual arts and art history: select from ART, ARTH, INART, MUSIC, THEA (all courses with those prefixes), COMM 215(3), COMM 241(3), COMM 242(3), COMM 250 GA(3)
- Philosophy and religious studies: select from PHIL, RLST (all courses with those prefixes)
- Literature and writing: select from ENGL, CMLIT (all courses with those prefixes), COMM 230(3), COMM 260W(3), COMM 332(3), COMM 346(3), COMM 474(3)

Select 12 credits from AMST, ART, ARTH, CAS, CHNS, CMLIT, COMM, ENGL, FR, HIST, HUM, INART, MUSIC, PHIL, RLST, SPAN, or THEA and/or 12 credits that can be used toward a minor in an area of the student's interests. (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 2015

Blue Sheet Item #: 43-05-026

Review Date: 02/24/2015

Coordinator updated: 05/19/16

CL

## **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/degreerequirements/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

## Information Systems

*Capital College (INFSY)*

JANE S. KOCHANOV, *Director of Undergraduate Studies, School of Business Administration*

This major prepares students to enter rapidly expanding fields associated with technology. This includes programming, systems analysis and design, database administration, network management, support services and training, and management of information resources. Students obtain competence both in information technology and in business theory. Thus, the curriculum combines technical content with managerial aspects of information systems. Each student's background is complemented with basic business instruction in accounting, marketing, management, and finance. With business and non-business electives, the program is designed to develop necessary skills to be an effective Information Systems employee. Because the Harrisburg area is the center of industry and economic development for South Central Pennsylvania, students are provided with many opportunities to experience the exciting and challenging world of business.

Students will obtain:

Knowledge in technologies that support the information environment.

Knowledge in business or organizational processes that are supported by technology.

General skills and abilities that promote good communication, problem-solving and analytical abilities, and the ability to work in a team environment.

Skills to participate in and lead multidisciplinary teams in the development, implementation, and management of information technology solutions.

The program meets the objectives through varied experiences and an emphasis on good communication skills.

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

Entry to the Information Systems major requires the completion of 8 entry-to-major courses: ACCTG 211(4); ECON 102 GS(3); ENGL 15 GWS(3) or ENGL 30 GWS(3); FIN 301(3); MATH 110 GQ(4) or MATH 140 GQ(4); MGMT 301(3); MKTG 301(3); SCM 200 GQ(4) or STAT 200 GQ(4); and a 2.00 or higher cumulative grade-point average. Additional information about this major is available in the office of the Director of Undergraduate Studies, School of Business Administration at Penn State Harrisburg.

For a B.S. in Information Systems, a minimum of 120 credits is required. Consistent with Senate policy, at least 24 credits of course work in the major and the capstone course must be completed at the Capital College to earn the degree.

*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 Course Requirements in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES 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:** 79 credits

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

**PRESCRIBED COURSES** (49 credits)

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

ECON 102 GS(3), FIN 301(3), MGMT 301(3), MKTG 301(3) (Sem: 1-4)

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

BA 364 US;IL(3), BA 462(3), ECON 104 (3), MIS 204(3), MIS 307(3)[1], MIS 390(3)[1], MIS 448(3)[1], MIS 450(3)[1], MIS 465(3)[1], SCM 301(3) (Sem: 5-8)

**ADDITIONAL COURSES** (24 credits)

Select 3 credits from CMPSC 101 GQ(3) or CMPSC 121 GQ(3) or IST 140(3) (Sem: 1-4)

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

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

Select 4 credits from BA 243(4) or BA 241(2) and BA 242(2) (Sem: 5-6)

Select 9 credits from one of the following three areas of concentration A, B, or C:

A. Application Development Concentration

IST 302(3)[1]; MIS 413(3)[1]; MIS 466(3)[1]; MIS 489(3)[1] (Sem: 5-8).

B. Network Security Concentration

IST 302(3)[1]; IST 451(3)[1]; IST 456(3)[1]; MIS 489(3)[1] (Sem: 5-8)

C. Individualized Concentration

IST 302(3)[1]; IST 451(3)[1]; IST 456(3)[1]; MIS 413(3)[1]; MIS 446 (3)[1]; MIS 461(3)[1]; MIS 466(3)[1]; MIS 489(3)[1] (Sem: 5-8)

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

Select 6 credits from 200-400 level business courses from: ACCTG, BA, ECON, FIN, MGMT, MIS, MKTG, or SCM in consultation with an academic adviser and in support of the student's interests. (Sem: 3-8)

## **Integrated B.S. in Information Systems and M.B.A. in Business Administration**

The School of Business Administration offers a limited number of academically superior Bachelor of Science in Information Systems candidates the opportunity to enroll in an integrated, continuous program of study leading to both the Bachelor of Science in Information Systems 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 Information Systems 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 five additional credits in their third year, and five 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 Information Systems 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 Information Systems 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.

Students 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 Information Systems 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 Reviewed by the Department: Fall 2017

Blue Sheet Item #:46-01-069

Review Date: 8/22/2017

UCA Revision #1: 8/8/06

UCA Revision #2: 7/27/07

CL

# Kinesiology

Penn State Altoona  
Berks College (KINBL)  
Penn State Harrisburg (KINCA)  
University Park, College of Health and Human Development (KINES)

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

PROFESSOR NANCY I. WILLIAMS, Head, Department of Kinesiology

Kinesiology offers a comprehensive program of study in the science of human movement and is designed for students who want to prepare for professions involving physical activity and for graduate study in related areas. The Kinesiology major options are: Applied Exercise and Health; Movement Science; and Exercise Science (offered only at Penn State Berks). All options require a culminating practicum or research experience. Relocation away from the University Park campus is generally necessary for the practicum. All options require a minimum of 120 credits for graduation. Additional requirements are mandated by the Pennsylvania Department of Education (PDE) for entrance to the Health and Physical Education (HPE) certification emphasis in the Applied Exercise and Health Option (AEH). Additional requirements are mandated by the Pennsylvania Department of Education (PDE) for entrance to the Health and Physical

Education (HPE) certification emphasis in the Applied Exercise and Health Option (AEH). Information about the major and its options can be found at <http://www.hhdev.psu.edu/kines/index.html>.

Students who have completed a minimum of 28 credits and have a 2.00 cumulative grade-point average are eligible for entrance into the major after completing an Entrance to Major form.

**APPLIED EXERCISE AND HEALTH OPTION:** This option provides applied interdisciplinary training in the foundations of the scientific understanding of exercise and health through the lifespan. Students identify one of two areas of emphasis that are certification-based and practice-oriented: (a) courses and practical experiences directed toward certification by organizations such as the American College of Sports Medicine (ACSM) or the National Strength and Conditioning Association (NSCA), or (b) a series of courses and student teaching leading to teacher certification. In order to qualify for the teacher certification track, students must meet the requirements mandated by the Pennsylvania Department of Education (PDE). PDE requirements can be found at <http://www.hhdev.psu.edu/kines/undergraduate/physical-health-education>. The completion of the Applied Exercise and Health Option will prepare students to work in the private or corporate fitness arenas, community-based fitness organizations, and university or hospital settings, or be Pennsylvania certified in health and physical education (K-12) and secure teaching positions in public or private schools.

**MOVEMENT SCIENCE OPTION:** This option provides interdisciplinary scientific training in academic areas such as biomechanics, exercise physiology, movement neuroscience, psychology of physical activity, and sport history and philosophy to understand movement for prevention and diagnosis of chronic disease, rehabilitation and treatment, and/or theoretical study. Students are prepared for graduate study in many clinical fields including medicine, physical therapy, occupational therapy, physical assistant, cardiac rehabilitation, as well as a broad range of careers in biomedical and health-related fields.

**EXERCISE SCIENCE OPTION:** (offered only at Penn State Berks and Penn State Harrisburg) This option is a program of study in the science of exercise. This program offers Kinesiology background and applied experience in fitness assessment, exercise physiology, exercise psychology, motor skill development, nutrition and healthy living skills. Graduates will be able to scientifically assess fitness levels of individuals. Analyzing those assessments, graduates will then be capable of designing and implementing appropriate exercise programs. Students in the Business Emphasis can obtain a Business Minor through this program. Students acquire basic business skills in accounting, marketing, management and entrepreneurial skills. Students choosing the Science Emphasis will select courses from a department list that will enhance their opportunity for graduate studies in Kinesiology-related fields, physical therapy and medical schools. The completion of the Exercise Science Option will enable graduates to compete for employment in the corporate fitness arena, private fitness clubs, community-based fitness organizations, hospital and university settings or possibly to operate their own health and fitness company.

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. KINES requires students to complete 24 credits for the major through courses taken at University Park. Courses taken at other Penn State campuses may not be counted toward this 24 credit minimum. For more information, check the Recommended Academic Plan for this major.

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

**GENERAL EDUCATION:** 45 credits  
(18-27 of these credits are included in the REQUIREMENTS FOR THE MAJOR)  
(See description of General Education in this bulletin.)

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

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

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

**ELECTIVES:** 0-2 credits

**REQUIREMENTS FOR THE MAJOR:** 95-109 credits  
(This includes 18-27 credits of General Education courses: Applied Exercise and Health Option - 9 credits GN, 6 credits GQ, 3 credits of GH, 6 credits of GS and 3 credits of GHA. Movement Science Option--9 credits of GN courses; 6 credits of GQ courses; 3 credits of GS courses; 3 credits of GHA courses. Exercise Science Option--9 credits of GN courses; 6 credits of GQ courses; 3 credits of GHA courses.)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 41-43 credits

**PRESCRIBED COURSES (28 credits)[1]**

BIOL 141 GN(3) (Sem: 1-4)

KINES 202(4), NUTR 251 GHA(3) (Sem: 3-4)

KINES 321(3), KINES 341 US;IL(3), KINES 345(3), KINES 350(3), KINES 360(3), KINES 384(3) (Sem: 3-6)

**ADDITIONAL COURSES (13-15 credits)[1]**

Select 3 credits: KINES 100(3); KINES 141 US;IL(3) (Sem 1-4)

Select 3 credits: KINES 180(3); KINES 101(3) (Sem 1-4)

Select 1 credit: KINES 295B(1); KINES 295(1) (Sem 1-4)

Select 3-4 credits: PHYS 150 GN(3); PHYS 250 GN(4) (Sem: 1-4)

Select 3-4 credits: STAT 200 GQ(4); or STAT 250 GQ(3); or SCM 200 GQ(4) (Sem: 2-6)

**REQUIREMENTS FOR THE OPTION: 54-66 credits****APPLIED EXERCISE AND HEALTH OPTION: (62-66 credits)****PRESCRIBED COURSES (34 credits)**

CHEM 101 GN(3)[1], CI 280 GH(3), EDPSY 010 GS(3)[1], KINES 200(3)[1], KINES 201(3)[1], KINES 267(1)[1], KINES 367(1)[1], KINE3S 368 (2)[1], KINES 401(3)[1], KINES 455(3)[1], KINES 456(4)[1], PSYCH 100 GS(3)[1] (Sem: 2-6)

**ADDITIONAL COURSES (3 credits)**

MATH 026 GQ(3)[1] or Satisfactory performance on the MATH placement examination--i.e., placement beyond the level of MATH 026 (Sem: 1-2)

**SUPPORTING COURSES AND RELATED AREAS (25-29 credits)**

Take the following required courses with selected emphasis area:

a. HPE Certification Emphasis (Sem: 7-8)

KINES 366(3), KINES 395A(1), KINES 400(3), KINES 464(3), KINES 468W(3), SPLED 400(4) (Sem: 7)

KINES 495A(12) (Sem: 8)

b. ACSM/NSCA Certification Emphasis (Sem: 7-8)

KINES 395(1), KINES 421(3), KINES 457(3), KINES 485(3), KINES 492(3)

Select 3 credits from approved 400-level KINES courses: KINES 410(3), KINES 411(3), KINES 422(3), KINES 424 US(3), KINES 425(3), KINES 460(3), KINES 465(3), KINES 467(3), KINES 481(3), KINES 483(3), KINES 493(3) (Sem: 7)

KINES 495B(6), KINES 495E(3) (Sem: 8)

**MOVEMENT SCIENCE OPTION: (54-56 credits)****PRESCRIBED COURSES (24 credits)[1]**

BIOL 110 GN(4), BIOL 142(1), CHEM 111 GN(1), CHEM 112 GN(3), CHEM 113 GN(1) (Sem: 1-4)

PHYS 251 GN(4), PSYCH 100 GS(3) (Sem: 3-6)

KINES 395B(1) (Sem: 5-8)

KINES 495B(6) (Sem: 7-8)

**ADDITIONAL COURSES (21-23 credits)**

CHEM 106 GN(5)[1]; or CHEM 110 GN(3)[1] (Sem: 1-4)

MATH 026 GQ(3)[1]; or Satisfactory performance on the MATH placement examination--i.e., placement beyond the level of MATH 026 (Sem: 1-4)

Select an additional 15 credits from approved 400-level KINES courses:

KINES 410(3), KINES 411(3), KINES 420(3), KINES 421(3), KINES 422(3), KINES 423(3), KINES 424 US(3), KINES 425(3), KINES 426(3), KINES 427(3), KINES 428(3), KINES 429(3), KINES 439(3), KINES 440(3), KINES 441 US(3), KINES 442 IL(3), KINES 443 IL(3), KINES 444 US(3), KINES 446 IL(3), KINES 447(3), KINES 450(3), KINES 452(3), KINES 453(3), KINES 454(3), KINES 455(3), KINES 456(4), KINES 457(3), KINES 460(3), KINES 463(3), KINES 465(3), KINES 467(3), KINES 481(3), KINES 483(3), KINES 484(3), KINES 485(3), KINES 488(3), KINES 492(3), KINES 493(3), KINES 495E(3), KINES 499 IL(1-12) (Sem: 5-8)

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

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

**EXERCISE SCIENCE OPTION: (54-56 credits)****PRESCRIBED COURSES (29 credits)[1]**

KINES 200(3), KINES 201(3), KINES 260(3), (Sem: 3-4)

KINES 356(3), KINES 358(I) (Sem: 5-6)

KINES 420(3), KINES 456(4), KINES 457(3), KINES 495C(6) (Sem: 7-8)

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

CHEM 101 GN(3)[1]; or CHEM 106 GN(5)[1]; or CHEM 110 GN(3)[1] and CHEM 111 GN(1)[1] (Sem: 1-2)

MATH 022 GQ(3)[1]; or Satisfactory performance on the MATH placement examination--i.e., placement

beyond the level of MATH 022 (Sem: 1-2)  
Select 3 credits from KINES 001 GHA(1.5) to KINES 099(3) (Sem: 1-2)

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

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

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

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

Lasted Revised by the Department: Fall Semester 2015

Blue Sheet Item #: 44-03-043

Review Date: 11/17/2015

UCA Revision #1: 8/8/06

HH

## Letters, Arts, and Sciences

*Abington College (LASAB)*

*Altoona College (LASAL)*

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

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

*World Campus*

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

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

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

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

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

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

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

**GENERAL EDUCATION:** 45 credits

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

**WRITING ACROSS THE CURRICULUM:**

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

**ELECTIVES:** 15 credits

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

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

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

**REQUIREMENTS FOR THE MAJOR:** 36 credits<sup>[1]</sup>**ADDITIONAL COURSES** (24 credits)

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

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

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

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

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

Last Revised by the Department: Summer Session 2008

Blue Sheet Item #: 36-04-042

Review Date: 1/15/08

Reviewed by Publications: 06/23/06

LA

## Management

*Capital College (MNGMT)*

JANE S. KOCHANOV, *Director of Undergraduate Studies, School of Business Administration*

This major provides students with the knowledge and skills managers need in today's dynamic business environments. Core management courses provide a general overview of key management competencies including effective leadership, team building, managing and motivating human resources, facilitating organizational change and learning, and fostering and applying organizational knowledge for competitive advantage. Students complement this general management foundation with a human resource management, entrepreneurship, or individualized concentration.

**HUMAN RESOURCE MANAGEMENT CONCENTRATION:** This concentration prepares students for a career in human resource management by developing skills and competencies in managing diversity and equal opportunity, ethical and fair treatment of employees, human resource planning and staffing, employee training and development, compensation and benefits, performance management, labor relations, and protecting employee safety and health. Students completing this concentration would be prepared to demonstrate their knowledge of the core principles of human resource practices and the application of those principles for potential certification as a Professional in Human Resources (PHR), Senior Professional in Human Resources (SPHR), or Global Professional in Human Resources (GPHR).

**ENTREPRENEURSHIP CONCENTRATION:** The Entrepreneurship concentration is designed to introduce undergraduate students to the process of new venture development. Topics covered in the concentration include business plan development, the nature of management in small business, and the role of creativity and innovation in the entrepreneurial process. Opportunities are provided for student participation in the development of an actual new business venture.

**INDIVIDUALIZED CONCENTRATION:** The Individualized concentration is designed to provide students with a customized specialization that enables them to develop their own concentration in a management field of

their choice. It allows flexibility in developing student knowledge and competencies in accordance with their personal, professional, and career interests.

**Entry to Major Requirements:**

Entry to the Management major requires the completion of 8 entry-to-major courses: ACCTG 211(4); ECON 102 GS(3); ENGL 15 GWS(3) or ENGL 30 GWS(3); FIN 301(3); MATH 110 GQ(4) or MATH 140 GQ(4); MGMT 301(3)[1]; MKTG 301(3); SCM 200 GQ(4) or STAT 200 GQ(4); and a 2.00 or higher cumulative grade-point average. Additional information about this major is available in the office of the Director of Undergraduate Studies, School of Business Administration at Penn State Harrisburg.

For a B.S. degree in Management, a minimum of 120 credits is required. Consistent with Senate policy, at least 24 credits of course work in the major and the capstone course must be completed at the Capital College to earn the degree.

*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 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:** Select 8 credits of non-business courses.

**REQUIREMENTS FOR THE MAJOR:** 79 credits

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

**PRESCRIBED COURSES** (46 credits)

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

ECON 102 GS(3), FIN 301(3), MGMT 301(3)[1], MKTG 301(3) (Sem: 1-4)

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

BA 364 US;IL(3), BA 462(3)[1], ECON 104 GS(3), MGMT 341(3)[1], MGMT 433(3)[1], MGMT 466(3)[1], MIS 204(3), MIS 390(3), SCM 301(3) (Sem: 5-8)

**ADDITIONAL COURSES** (21 credits)

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

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

Select 4 credits from BA 243(4) or BA 241(2) and BA 242(2) (Sem: 5-6)

**Select 9 credits from one of the following four areas of concentration A, B, C:**

**A. HUMAN RESOURCE MANAGEMENT CONCENTRATION**

MGMT 440(3)[1], MGMT 450(3)[1] (Sem: 5-8)

Select 3 credits in MGMT [1] at the 300-400 level from department list in consultation with academic adviser (Sem: 5-8)

**B. ENTREPRENEURSHIP CONCENTRATION**

MGMT 431(3)[1], MGMT 453(3)[1] (Sem: 5-8)

Select 3 credits in MGMT [1] at the 300-400 level from department list in consultation with academic adviser (Sem: 5-8)

**C. INDIVIDUALIZED CONCENTRATION**

Select 9 credits in MGMT [1] at the 300-400 level from department list in consultation with academic adviser (Sem: 5-8)

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

Select 12 credits from 200-400 level business courses from: ACCTG, BA, ECON, FIN, MIS, MGMT, MKTG, or SCM in consultation with an academic adviser and in support of the student's interests. (Sem: 3-8)

## **Integrated B.S. in Management and M.B.A. in Business Administration**

The School of Business Administration offers a limited number of academically superior Bachelor of Science

in Management candidates the opportunity to enroll in an integrated, continuous program of study leading to both the Bachelor of Science in 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 Management and Master of Business Administration degrees. The total course load is reduced due to courses that can count towards both degrees. The first three years of the IUG program are identical to the first three years of the Bachelor of Science program. The fourth year of the IUG program differs from the fourth year of the Bachelor of Science program because of the inclusion of courses that count toward the Master of Business Administration degree requirements.

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 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 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 unless students have completed fewer than 24 credits at Penn State, in which case they must take GMAT and earn a score of at least 450. 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 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 Reviewed by the Department: Fall Semester 2017

Blue Sheet Item #:46-01-070

Review Date: 8/22/2017

UCA Revision #1: 8/8/06

UCA Revision #2: 7/27/07

CL

## Marketing

*Capital College (MRKT)*

*Capital College via the World Campus*

JANE S. KOCHANOV, *Director of Undergraduate Studies, School of Business Administration*

This major is designed for students interested in careers involving sales, promotion, services, distribution, research, and planning for business and the public sector. The major provides students with key concepts and methods of analysis in marketing. It focuses on understanding customer needs, developing products or services, creating and implementing marketing plans, monitoring customer responses, and projecting marketing activities for the future.

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

Entry to the Marketing major requires the completion of 8 entry-to-major courses: ACCTG 211(4); ECON 102 GS(3); ENGL 15 GWS(3) or ENGL 30 GWS(3); FIN 301(3); MATH 110 GQ(4) or MATH 140 GQ(4); MGMT 301(3); MKTG 301(3)[1]; SCM 200 GQ(4) or STAT 200 GQ(4); and a 2.00 or higher cumulative grade-point average. Additional information about this major is available in the office of the Director of Undergraduate Studies, School of Business at Penn State Harrisburg.

For the B.S. degree in Marketing, a minimum of 120 credits is required. At least 50 percent of the business credit hours required for the degree must be taken at the Capital College. No more than 60 credits should be from business and business-related courses.

*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 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:** Select 8 credits of non-business courses.

**REQUIREMENTS FOR THE MAJOR:** 79 credits

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

**PRESCRIBED COURSES** (46 credits)

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

ENGL 202D GWS(3), ECON 102 GS(3), FIN 301(3), MGMT 301(3), MKTG 301(3)[1] (Sem: 1-4)

BA 364 US;IL(3), BA 462(3), ECON 104 GS(3), MIS 204(3), MIS 390(3), SCM 301(3) (Sem: 5-8)

MKTG 330(3)[1], MKTG 342(3)[1], MKTG 450(3)[1] (Sem: 5-8)

**ADDITIONAL COURSES** (21 credits)

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

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

BA 243(4) or BA 241(2) and BA 242(2) (Sem: 5-6)

Select 9 credits [1] from the following: ECON 342(3), MKTG 302(3), MKTG 327(3), MKTG 422(3), MKTG 445 IL(3), MKTG 476(3), MKTG 478(3), MKTG 485(3) (Sem: 5-8)

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

Select 12 credits from 200-400 level business courses from: ACCTG, BA, ECON, FIN, MIS, MGMT, MKTG, or SCM in consultation with an academic adviser and in support of the student's interests. (Sem: 3-8)

## **Integrated B.S. in Marketing and M.B.A. in Business Administration**

The School of Business Administration offers a limited number of academically superior Bachelor of Science in Marketing candidates the opportunity to enroll in an integrated, continuous program of study leading to both the Bachelor of Science in Marketing 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 Marketing 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 six additional credits in their third year, and six 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 Marketing 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 Marketing 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 Marketing 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 Reviewed by the Department: Fall Semester 2017

Blue Sheet Item #:46-01-071

Review Date: 8/22/2017

UCA Revision #1: 8/3/06

UCA Revision #2: 7/27/07

CL

## Mathematical Sciences

*Capital College (MA SC)*

PROFESSOR THANG N. BUI, *Program Chair, School of Science, Engineering, and Technology*

The two options and the variety of the course offerings provide concentrations in various areas such as actuarial science, management science/operation research, statistics, education, and preparation for graduate studies.

Small classes, excellent faculty, opportunities to work with faculty on projects, and strong employment prospects are just some of the strengths of the program. Students will be helped to develop: a solid foundation in mathematical studies; an awareness of the utility of mathematics, statistics, and computers; skills in translating practical problems into mathematical terms; a competency in the use of modern mathematical tools; problem-solving skills; and an awareness of the importance of mathematics in society.

The program is designed to prepare students for employment in business, industry, government, and education immediately after graduation, but graduate study in mathematics or related disciplines is also a viable alternative. Mathematical modeling is emphasized, and all students are required to take courses in statistics and computer science.

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

Entry to the Mathematical Sciences major requires that the student has completed with a grade of C or higher: MATH 140 GQ(4), MATH 141 GQ(4). A 2.00 or higher cumulative grade-point average is required.

The Mathematical Sciences Secondary Education Option prepares students to meet the requirements, as established by the Pennsylvania Department of Education, to be certified for the Instructional I Certificate in Mathematics at the secondary level.

Students admitted to the program must have the appropriate clearances. These include FBI fingerprint check, Act 151 child abuse history clearance, and Act 34 criminal record check.

Students thinking seriously about entering the education program should plan their freshman and sophomore years carefully. Semesters 5 through 8 are very structured.

### **Entry to the Mathematical Sciences Secondary Education option requires the following additional requirements:**

1. a minimum cumulative grade-point average of 3.0
2. completion of ENGL 15 GWS(3) or ENGL 30 GWS(3) and three credits of literature from approved list with a C or higher grade
3. Satisfaction of any entrance testing requirements set out by the Pennsylvania Department of Education in effect at the time of application for the major

### **Selective Retention:**

Following entrance to the major, students will be evaluated for retention in the program based on:

1. maintaining a cumulative GPA of 3.0 or higher;
2. completion of required courses with a C or higher grade;
3. an acceptable or above rating on the Penn State Harrisburg Professional Dispositions for Teacher Education.\*

To be eligible to student teach, students must:

1. maintain a cumulative GPA of 3.0 or higher;
2. complete all required Content and Education Courses with a C or higher grade;
3. satisfy any entrance testing requirements set out by the Pennsylvania Department of Education in effect at the time of application for entrance to major;
4. be rated acceptable or above on the Penn State Harrisburg Professional Dispositions for Teacher Education.\*

In order to successfully complete the Secondary Education Mathematics Program, students must:

1. complete EDUC 490 with a grade of C or higher;
2. maintain a cumulative GPA of 3.0 or higher;
3. complete all required Content and Education Courses with a C or higher grade;
4. pass the Penn State Harrisburg Mathematics Content Exam with an 80% or higher
5. complete a presentation portfolio; and
6. be rated acceptable or above on the Penn State Harrisburg Professional Dispositions for Teacher Education.\*

For a B. S. degree in Mathematical Sciences, a minimum of 120 credits is required.

For a B. S. degree in Mathematical Sciences with the Secondary Education option, a minimum of 121 credits is required.

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

**GENERAL EDUCATION:** 45 credits

(9 to 18 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 REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**REQUIREMENTS FOR THE MAJOR:** 83-96 credits

(This includes 9-18 credits of General Education courses: 3 credits of GWS courses; 6 credits of GQ courses. In addition, the Secondary Education option includes 6 credits of GH courses and 3 credits of GS courses)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 20-21 credits

**PRESCRIBED COURSES** (20-21 credits)

MATH 140 GQ(4)[1], MATH 141 GQ(4)[1] (Sem: 1-2)

ENGL 202C GWS(3) (Sem: 4)

MATH 311W(3-4)[1], MATH 430(3)[1] (Sem: 5)

MATH 401(3)[1], (Sem: 6)

**REQUIREMENTS FOR THE OPTION:** 63-75 credits

**GENERAL MATHEMATICAL SCIENCES OPTION:** (64-65 credits)

**PRESCRIBED COURSES** ( 28-29 credits)

CMPSC 121 GQ(3), MATH 230(4) (Sem: 3)

MATH 220 GQ(2-3), MATH 251(4) (Sem: 4)

MATH 318(3) (Sem: 5)

MATH 455(3)[1], STAT 301GQ(3) (Sem: 6)

MATH 435(3), MATH 475 US;IL(3) (Sem: 7)

**ADDITIONAL COURSES** (3 credits)

Select 3 credits from: MATH 412(3) or MATH 425(3) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (33 credits)

Select 6 credits of 200 level or above courses. (Sem: 5-6)

Select 18 credits of 300-400 level Mathematics courses in consultation with an academic adviser. Up to 6 of these credits may be replaced by any 200 or greater level CMPSC courses or CMPSC 122. (Sem: 5-8)

Select 9 credits of 300-400 level courses in consultation with an academic adviser and in support of the student's interests. (Sem: 5-8)

**SECONDARY EDUCATION IN MATHEMATICAL SCIENCES OPTION:** (63-75 credits)

**PRESCRIBED COURSES** (51-63 credits)

HDFS 239 GS(3) (Sem: 1-4)  
CMPSC 121 GQ(3)[1], EDPSY 14(3)[1], MATH 230(4)[1] (Sem: 3)  
CI 280 GH(3)[1], MATH 220 GQ(2-3)[1], MATH 250(3)[1] (Sem: 4)  
EDUC 313(2)[1], EDUC 314(3)[1] (Sem: 5)  
EDUC 315 US(3)[1], EDUC 458(3)[1], MATH 427(3)[1], STAT 301 GQ(3)[1] (Sem: 6)  
EDUC 417(3)[1], EDUC 459(3)[1], MATH 435(3)[1], MATH 475 US;IL(3)[1] (Sem: 7)  
EDUC 490(1-12)[1] (Sem: 8)

**ADDITIONAL COURSES** (3 credits)

Select 3 credits from MATH 425(3) or MATH 412(3)[1] (Sem: 7-8)

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

Select 3 credits of literature (GH) from department list.[1] (Sem: 1-3)

Select 3 credits of 100-400 level courses (Sem: 4)

Select 3 credits of 300-400 level courses in Mathematics, Computer Science, Statistics, or Education.[1] (Sem: 5-8)

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

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-03-016

Review Date: 11/15/2016

R & T: 02/24/2015

UCA Revision #1: 8/9/06

UCA Revision #2: 7/30/07

CL

## Mechanical Engineering

*Penn State Berks (ME BL)*

*Penn State Erie, The Behrend College (ME BD)*

*Penn State Harrisburg (ME CA)*

Built upon a broad foundation in physics, chemistry, and mathematics, this major has the objective of educating graduates to be problem solvers. Graduates of this program will have had opportunities to learn about applying scientific principles, engineering analysis, and engineering design to solve unstructured problems that are typical of those found in mechanical engineering. The major helps prepare graduates for a lifelong productive career, whether they choose professional practice, graduate school, or some other career path. Graduates will have had opportunities to learn how to work with others toward a common goal, to clearly express their ideas in written and verbal form, and to be independent and capable of adapting to the continuously changing technology of the work environment.

After completing the fundamental science core, students may pursue their interest in mechanical engineering by studying fluid and solid mechanics, engineering materials and their properties, thermodynamics and heat transfer, computer-aided design, kinematics and dynamics of machine elements, machine design, finite elements, control systems, electricity, and electronic instrumentation and machinery. The students will be required to analyze and solve a significant mechanical engineering design problem during their senior year.

**Entrance Requirement:** In addition to the Carnegie unit and minimum GPA requirements\* described by University policies, all students applying for entrance to any of the engineering majors at Behrend, Berks, or Capital college must have at least a 2.0 cumulative GPA by the end of the semester prior to applying for entrance to the major and have completed, with a minimum grade of C: CHEM 110 GN(3), MATH 140 GQ(4), MATH 141 GQ(4), and PHYS 211 GN(4). These courses must be completed by the end of the semester during which the admission to major process is carried out.

\*In the event that the major is under enrollment control, a higher minimum cumulative grade-point average is likely to be needed.

For the B.S. degree in Mechanical Engineering, a minimum of 131 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

(21 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 REQUIREMENTS FOR THE MAJOR)

**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:** 107-108 credits

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

**PRESCRIBED COURSES** (88-89 credits)

CHEM 110 GN(3)[1], EDSGN 100S(3) (Sem: 1-2)

EE 211(3), EMCH 211(3)[1], EMCH 212(3)[1], EMCH 213(3)[1], ME 300(3)[1], MATH 140 GQ(4)[1], MATH 141 GQ(4)[1], MATH 220(2-3)[1], MATH 230(4), MATH 251(4)[1], PHYS 211 GN(4)[1], PHYS 212 GN(4) (Sem: 1-4)

CMPSC 200 GQ(3), ENGL 202C GWS(3) (Sem: 3-6)

ME 320(3)[1], ME 345W(4)[1], ME 349(3)[1], ME 357(3)[1], ME 365(1)[1], ME 367(3)[1], ME 380(3)[1], ME 410(3)[1] (Sem: 5-6)

ME 448(3)[1], ME 449(3)[1], ME 468(3)[1], MATSE 259(3)[1] (Sem: 7-8)

**ADDITIONAL COURSES** (6 credits)

ECON 102 GS(3) or ECON 104 GS(3) (Sem: 1-6)

CHEM 111 GN(1) and PHYS 214(2); or CHEM 112 GN(3), or BIOL 141 GN(3) (Sem: 3-4)

**SUPPORTING COURSES AND RELATED AREAS** (13 credits)

Select 13 credits of program elective courses[1] from school-approved list. (These credits must be selected to fulfill the thematic requirements of the major.) (Sem: 7-8)

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

Last Revised by the Department: Spring Semester 2011

Blue Sheet Item #: 39-04-098

Review Date: 01/11/2011

UCA Revision #1: 8/9/06

UCA Revision #2: 7/30/07

BD

## Mechanical Engineering Technology

*Capital College (M E T)*

PROFESSOR RICHARD CIOCCI, *Associate Professor Mechanical Engineering*

The goal of the Mechanical Engineering Technology program is to provide our students with the necessary training and education so that they can provide high-level technical support to a variety of industrial, commercial, consulting, and governmental organizations. The emphasis of our program is in the application of scientific and engineering principles. Technical communication in oral and written form is also emphasized. Our graduates are expected to appreciate the ethical and societal responsibilities of a technologist, the concepts of Continuous Quality Improvement and the continuing impact of globalization of design, manufacturing and marketing of technical goods and services. Our graduates are trained to deal with choice of materials and methods that are safe, environmentally and aesthetically acceptable and economically competitive. Typical responsibilities that may be assigned to our graduates are the development and evaluation of machines and mechanisms; development, organization and supervision of manufacturing processes and procedures; the instrumentation, control and testing of a process; quality control; technical marketing and sales; design of mechanical systems for heating and cooling and energy management.

The strengths of our program include: hands-on training; extensive laboratory experience; state of the art

computer methods, excellent job placement and accreditation by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

Graduates who wish to continue their professional development can take the Fundamentals of Engineering exam in Pennsylvania, a prerequisite for taking the Professional Engineering exam.

**Entry to Major Requirements:**

Entry to the Mechanical Engineering Technology major requires a 2.00 or higher cumulative grade-point average.

**Re-enrollment:**

Associate degree students should file a re-enrollment form during the final semester of their associate degree. Students re-enrolling from an associate's degree into the bachelor's degree should run a degree audit from LionPATH, using the M E T major code, to determine their curriculum requirements.

For a B.S. degree in Mechanical Engineering Technology, a minimum of 128 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 front of *Bulletin*.)

**FIRST-YEAR SEMINAR:**

(Included in GENERAL EDUCATION or REQUIREMENTS FOR THE MAJOR course selection including Supporting Courses and Related Areas)

**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:** 104 credits

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

**PRESCRIBED COURSES** (49 credits)

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

MATH 140 GQ(4) (Sem: 1-5)

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

ENGR 320Y GS;US;IL(3)[1], IET 321(3), MET 321(2), MET 332(3)[1], MET 336(3)[1], MET 338(1), MET 341(3)[1], MET 358(3), MET 370(1), MET 431(3)[1], MET 438(3), MET 454(3), MET 458(1), MET 481(3), MET 486(3) (Sem: 5-8)

**ADDITIONAL COURSES** (34-38 credits)

Select 3 credits from: EDSGN 100(3) or EGT 120(3) (Sem: 1-2)

Select 3-4 credits from: PHYS 150 GN(3) or PHYS 211 GN(4) (Sem: 1-2)

Select 3 credits from: EMCH 211(3) or ET 300(3) or MCHT 111(3) [1] (Sem: 2-3)

Select 3-4 credits from: PHYS 151GN(3) or PHYS 212 GN(4) (Sem: 2-4)

Select 3 credits from: IET 101(3) or IET 311(3) (Sem: 2-5)

Select 3-4 credits from: IET 215(2) and IET 216(2) or IET 321(3) (Sem: 2-5)

Select 4 credits from: STAT 200 GQ(4) or MATH 141 GQ(4) (Sem: 2-6)

Select 3 credits from: EMCH 212(3), ET 321(3), or MET 206(3) [1] (Sem: 3-4)

Select 3 credits from: EMCH 213(3), ET 322(3), or MCHT 213(3) [1] (Sem: 3-4)

Select 3 credits from: MET 210(3) or MET 365(3) (Sem: 3-6)

Select 3-4 credits from: EET 101(3) and EET 109(1); or EET 320(3) (Sem: 3-7)

**SUPPORTING COURSES AND RELATED AREAS** (17-21 credits)

Select 5-9 credits from the department approved list of courses. (Sem: 5-8)

Select 12 credits from 300-400 level technology and engineering elective courses in consultation with an academic adviser and in support of the student's interests. (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 #: 45-05-015

Review Date: 2/21/17

UCA Revision #1: 8/9/06  
UCA Revision #2: 7/30/07

## Comments

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# 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)[38] or NURS 352(3)[38] (Sem: 3-4)

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

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

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

**[37]** Credit by Portfolio Assessment

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

Last Revised by the Department: Fall Semester 2017

Blue Sheet Item #: 46-02-078

Review Date: 10/3/2017

UCA Revision #1: 8/9/06

HH

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

## **Nursing**

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

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

*Penn State Harrisburg (Second Degree)*

*University Park (General Nursing)*

*University College: Penn State Fayette, Penn State Mont Alto, Penn State Worthington Scranton (General Nursing)*

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

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

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

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

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

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

#### **Undergraduate Academic Progression Policy**

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

(<http://www.nursing.psu.edu/undergrad/handbooks/>).

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

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

**GENERAL EDUCATION:** 45 credits

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

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

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selection)

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

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 4-9 credits

**REQUIREMENTS FOR THE MAJOR:** 87-92 credits **[1]** **[2]**

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

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

**PRESCRIBED COURSES** (21 credits)

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

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

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

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

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

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

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

**PRESCRIBED COURSES** (54 credits)

NURS 225(3)**[38]**, NURS 230(4)**[38]**, NURS 250 US(2)**[38]**, NURS 251(3)**[38]** (Sem: 3-4)

NURS 200W(3)**[38]**, NURS 301(4)**[38]**, NURS 305(3)**[38]**, NURS 306(3)**[38]**, NURS 310(3)**[38]**, NURS 320(3)**[38]**, NURS 350(2)**[38]** (Sem: 5-6)

NURS 405A(4)**[38]**, NURS 405B(4)**[38]**, NURS 415 US;IL(4)**[38]**, NURS 420(4)**[38]**, NURS 450A(2)**[38]**, NURS 450B(3)**[38]** (Sem: 7-8)

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

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

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

**PRESCRIBED COURSES** (60 credits)

NURS 225(3)**[38]**, NURS 230(4)**[38]**, NURS 250 US(2)**[38]**, NURS 251(3)**[38]** (Sem: 1)

NURS 200W(3)**[38]**, NURS 301(4)**[38]**, NURS 305(3)**[38]**, NURS 310(3)**[38]**, NURS 350(2)**[38]** (Sem: 2)

NURS 306(3)**[38]**, NURS 320(3)**[38]**, NURS 415 US;IL(4)**[38]**, NURS 420(4)**[38]** (Sem: 3)

NURS 405A(4)**[38]**, NURS 405B(4)**[38]**, NURS 450A(2)**[38]**, NURS 450B(3)**[38]**, NURS 495(6)**[38]** (Sem: 4)

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

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

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

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-03-056

Review Date: 11/15/2016

(R&T 2/28/06)

UCA Revision #1: 8/9/06

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

### Comments

HH

## Political Science

*Altoona College (PLSAL)*

*Capital College (PLSCA)*

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

*World Campus*

PROFESSOR LEE ANN BANASZAK, *Head, University Park*

PROFESSOR MATTHEW EVANS, *Penn State Altoona*

PROFESSOR ALEXANDER SIEDSCHLAG, *Capital College*

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

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

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

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

**GENERAL EDUCATION:** 45 credits

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES or GENERAL EDUCATION course selections)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

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

**WRITING ACROSS THE CURRICULUM:**

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

**ELECTIVES:** 18 credits

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

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

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

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

**SUPPORTING COURSES AND RELATED AREAS** (36 credits)

(In meeting these requirements, students must take at least one course at any level from the four fields offered in the department: Political Theory/Methodology, American Politics/Public Administration, Comparative Politics, and International Relations)

Select 12 credits from below the 400 level (Sem: 1-6)

Select 15 credits from the 400 level and above in political science (Sem: 3-8)

Select 9 credits in political science or in related disciplines from departmental list of approved courses. Substitutions may be made with the written permission of the faculty adviser. (Sem: 3-8)

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

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

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

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

### **Admission Requirements**

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

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

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

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

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

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

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

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

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

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

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

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

Last Revised by the Department: Fall Semester 2013

Blue Sheet Item #: 42-03-079

Review Date: 11/19/2013

LA

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

# 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

*Capital College (PSYC)*

*COBI MICHAEL, Program Coordinator, School of Behavioral Science and Education*

The Psychology major emphasizes the scientific study of human behavior in areas such as cognition, development, learning, physiology, personality, and social processes. The curriculum is designed to provide students with a broad background in psychological theory and research and to develop the analytical and critical thinking skills necessary to be good consumers of scientific information.

The Psychology program exposes students to a number of areas of psychology but allows flexibility in the specific courses that are taken in each sub-area. Students are also required to obtain applied experience by completing an internship or by assisting faculty with their research. Elective credits can be used for additional internship or research experience.

The Psychology program prepares students for careers in local, state, and federal government and for entry-level psychological services positions in human service, applied behavior, human resources, and related fields. The Psychology program also provides a strong background for graduate education at both the master's and the doctoral level in counseling, social work, and many areas of psychology.

The Integrated Undergraduate Graduate (IUG) program is available for strong undergraduate students who wish to pursue a bachelor's and master's degree in five years. Psychology undergraduates may apply for admission to the IUG program in Applied Research Psychology by no later than February 15th the spring of their junior year after completing a minimum of 45 credits, if they meet the following admission requirements:

1. Grade point average of 3.50 or above cumulative.
2. Completion of undergraduate statistics and an undergraduate research course with an A- or above in both.
3. Completing 18 credits or more in psychology with a psychology GPA of 3.67 or above.
4. Typical successful candidates will obtain GRE scores of 146 or above on both the verbal and quantitative sections, with an analytical score of 3.5 or above.
5. Complete interviews with graduate faculty member.
6. Provide three professional letters of recommendation with at least two from academic references.

For a B.S. degree in Psychology, a minimum of 122 credits is required. Students admitted to the IUG program may apply 11 credits to their graduate and undergraduate degrees in psychology.



**Entry to Major Requirements:**

Entry to the Psychology major requires a 2.00 cumulative grade-point average and an average of C (2.00) or better in any courses already taken in the major.

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

**GENERAL EDUCATION:** 45 credits

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

(See description of General Education Course Requirements in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES)

**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:** 9 credits**REQUIREMENTS FOR THE MAJOR:** 74 credits

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

**PRESCRIBED COURSES** (10 credits)**[1]**

ENGL 202A GWS(3), PSYCH 100 GS(3) (Sem: 1-4)

PSYCH 301(4) (Sem: 4-5)

**ADDITIONAL COURSES** (46 credits)**[1]**

**Select** BISC 4 GN(3) or BIOL 141 GN(3) (Sem: 1-4)

(At least 15 credits of the following courses must be at the 400 level.)

**Select 4 credits from: (Sem: 3-4)**

Category 1 (Statistics) PSYCH 200 GQ(4) or STAT 200 GQ(4)

**Select 6 credits from two different developmental categories (3 credits each category): (Sem: 2-8)**

Category 2a (Lifespan) PSYCH 212 GS(3)

Category 2b (Adult) PSYCH 416(3)

Category 2c (Child) PSYCH 410(3)

Category 2d (Adolescence) PSYCH 412(3)

**Select 6 credits from two different individual difference categories (3 credits each category) (Sem: 2-8)**

Category 3a (Social Psychology) PSYCH 221 GS(3) or PSYCH 420(3)

Category 3b (Personality Psychology) PSYCH 238 GS(3) or PSYCH 438(3)

Category 3c (Personal Adjustment) PSYCH 243 GS(3) or PSYCH 471(3)

Category 3d (Health Psychology) PSYCH 441(3)

**Select 6 credits from two different clinical categories (3 credits each category) (Sem: 5-8)**

Category 4a (Physical Disabilities) PSYCH 370 US(3)

Category 4b (Childhood Disorders) PSYCH 476(3)

Category 4c (Abnormal Psychology) PSYCH 270(3) or PSYCH 470(3)

Category 4d (Behavior Modification) PSYCH 473(3)

Category 4e (Developmental Disabilities) PSYCH 443

**Select 6 credits from two different experimental categories (3 credits each category) (Sem: 5-8)**

Category 5a (Physiological Psychology) PSYCH 260(3) or PSYCH 462(3)

Category 5b (Cognitive Psychology) PSYCH 256 GS(3) or PSYCH 452 or PSYCH 456(3)

Category 5c (Learning Theory) PSYCH 261 GS(3) or PSYCH 461(3)

**Select 3 credits from applications in psychology (Sem: 5-8)**

Category 6 (Applied Experience) PSYCH 395(1-18) or PSYC 494(1-12)

**Select 12 credits of any PSYCH courses not used above, with the exception that only one course selected from any Category 1 through 5 will count for the major (Sem: 2-8)**

**Students in the IUG program will take 11 credits of graduate work in their senior year, courses PSYC 500(3), PSYC 520(4) and PSYC 521(4). These 11 credits will apply to the graduate program and the undergraduate PSYCH elective undergraduate requirement.**

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

**Select 6 credits** from AAAS, AMST, ARAB, ART, ARTH, BRASS, CART, CMUS, CAMS, CAS, CHNS, CMLIT, COMM, DANCE, ELISH, ENGL, ENLSH, FR, GER, GREEK, HCOMM, HEBR, HIST, HUM, IHUM, INART, IT, JST, JAPNS, KOR, LATIN, LING, LIT, MEDVL, MUSIC, PHIL, PHILO, PHLOS, PORT, RLST, RUS, SPST, SPAN, STS, THEA, THTRE, WMNST 106 GH;US;IL(3), WMNST 101 GH;US(3), WMNST 102 GH;IL(3), WMNST 104 GH;US(3), WMNST 117 GH;US;IL(3), WMNST 130 IL(3), WMNST 137 GH;US;IL(3), WMNST 194 GH;US;IL(3), WMNST 205 US(3), WMNST 270(3), WMNST 407 US(3), WMNST 410(3), WMNST 419 US;IL(3), WMNST 421 IL(3), WMNST 430 US(3),

WMNST 438(3), WMNST 455 US(3), WMNST 457 US;IL(3), WMNST 462 US(3), WMNST 466 US;IL(3), WMNST 489(3), WMNST 490 US;IL(3), WMNST 491(3) (Sem: 1-8)

**Select 12 credits** from AAAS, AFRAS, ANTH, BESC (except BESC 302), CRIMJ, ECON, HCM, HDFS, PLSC, PUBPL, RSOC, SCLSC, SOSC, SOC, WMNST 100 GS;US;IL(3), WMNST 103 US(3), WMNST 110 GS;US(3), WMNST 116 GS;US;IL(3), WMNST 136 US(3), WMNST 202 GS;IL(3), WMNST 250 US(3), WMNST 423 US(3), WMNST 424 US(3), WMNST 426 US;IL(3), WMNST 428 US;IL(3), WMNST 432 US(3), WMNST 452(3), WMNST 453 US(3), WMNST 456(3), WMNST 464 US(3), WMNST 471 US(3), WMNST 476(3) (Sem: 1-8)

### **Integrated B.S./M.A. in Applied Psychological Research**

The Applied Research Psychology Program offers an integrated B.S./M.A. (IUG) program designed to allow academically superior psychology undergraduates to obtain both the bachelor's and M.A. degree within five years of study. The first three years of undergraduate coursework are the same as other psychology undergraduates, but the interested students apply for the IUG program in the spring of their junior year of study. If admitted to the IUG, the fourth year of study includes the graduate courses Ethics and Professional Practice in Psychology and Counseling (PSYC 500), Research Methods (PSYC 521) in the fall and Statistics (PSYC 521) in the spring. The IUG students then complete the remaining master's degree requirements in the fifth year, including the master's paper (PSYC 530). The integrated B.S./M.A. degree in Psychology meets the needs of the most academically talented students in the Psychology undergraduate major. A large proportion of the most academically talented students apply or wish to apply to graduate schools during their final year of undergraduate studies or soon after graduation. These students can benefit from the integrated degree because it provides a more challenging curriculum that allows them to accelerate their program of study to possibly receive an undergraduate and graduate degree within 5 years of study. Additionally, the integrated program can provide these students with a more cohesive program of study with opportunities to engage in more comprehensive research and clinical experience leading to both the Bachelor and Master's degree.

For the IUG in Applied Psychological Research, a minimum of 122 credits are required for the bachelor's degree and 35 credits for the M.A. degree. The graduate credits for PSYC 500, 521 and 520 (11 total credits) can apply to both the M.A. degree and as psychology electives for the bachelor's degree.

The objectives of the Integrated Undergraduate Graduate Program in Applied Research Psychology include:

1. To offer highly qualified students the opportunity to earn two degrees in five years. In particular, IUG students may count up to 12 credits towards both their B.S. and M.A. 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.
6. To allow students to coordinate as well as concurrently pursue the two degree programs, which enables them to achieve greater depth and comprehension than if the degrees are pursued sequentially.

### **Admission Requirements**

To initiate the application process, students must submit an *Integrated Undergraduate-Graduate (IUG) Degree in Applied Research Psychology Application Form*, a transcript, and three letters of recommendation, with at least two from faculty members. A graduate faculty adviser will help undergraduate candidates determine a sequence of courses that will prepare them for acceptance into the Integrated Undergraduate-Graduate (IUG) degree program.

Psychology undergraduates may apply for admission by no later than February 15th the spring of their junior year after completing a minimum of 45 credits, if they meet the following admission requirements:

1. Grade point average of 3.50 or above cumulative.
2. Completion of undergraduate statistics and an undergraduate research course with an A- (3.67) or above in both.
3. Completing 18 credits or more in psychology with a psychology GPA of 3.67 or above.
4. GRE scores are required for the IUG program. Typical successful candidates will obtain GRE scores of 146 or above on both the verbal and quantitative sections, with an analytical score of 3.5 or above.
5. Complete interviews with graduate faculty members.
6. Provide three professional letters of recommendation with at least two from academic references.

These admission standards are high, as it thought the program will only be appropriate for students with high levels of academic skills. The program area does have discretion in admitting psychology majors into the integrated program, and extenuating circumstances can always be considered in terms of possible admission. Individuals who are unable to be admitted in to the integrated program of study can apply for regular admission when they complete their program of study. These materials must be completed by the spring of the junior year to allow admission into the IUG program the following fall.

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

Year	Fall (Senior UG)	Spring (Senior UG)	Summer
<b>Year 1 (Senior Undergraduate Year) (11-14 graduate credits)</b>	PSYC 520 Research Methods (4)* PSYC 500 Ethics and Professional Practice in Psychology and Counseling (3)*	PSYC 521 Statistics (4)*	PSYC 594 (3) if elected
<b>Year 2 (21-24 graduate credits)</b>	PSYC 501 Cultural Competency in Psychology (3) PSYC 594 Research (3) Elective (3)	PSYC 524 Biological Bases (3) PSYC 502 Applied Social Psychology (3) PSYC 530 Master's Paper (3)	Research or Elective (3) PSYC 530 Master's Paper (1-3)

\* Applied to both undergraduate and graduate degree for a total of 11 credits.

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

As stated in the Graduate Bulletin, a minimum grade-point average of 3.00 for work done at the University is required for graduation and to maintain good academic standing. See

[http://bulletins.psu.edu/bulletins/whitebook/degree\\_requirements.cfm?section=masters](http://bulletins.psu.edu/bulletins/whitebook/degree_requirements.cfm?section=masters)

**[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 2014

Blue Sheet Item #: 43-04-042

Review Date: 01/13/2015

UCA Revision #1: 9/1/06

UCA Revision #2: 7/30/07

Publications updated department head: 4/28/08

CL

## Public Policy

*Capital College (PUBPL): Penn State Harrisburg*

PROFESSOR ALEXANDER SIEDSCHLAG, *Interim Program Coordinator, School of Public Affairs*

The Public Policy major is designed for students interested in policy issues, politics, public administration, and related areas like policy analysis and policy advocacy. The program explores a myriad of critical issues facing our communities, the nation, and the world. Students receive the educational foundation for careers in the public sector, in government-related businesses, and in non-profit organizations, as well as for graduate work in the fields of law, public administration, criminal justice, public policy, political science, and health care administration. Building on the program core, students may choose electives from a broad array of courses in public policy and other areas. Students may wish but are not required to pursue a concentration within the Public Policy major. The following concentrations are available: U.S. Public Policy; Law and Justice; and International Policy. Students should consult their adviser for a complete listing of courses in each of these concentrations. Overall, the Public Policy program seeks to advance the ideals of an active, informed citizenry and a commitment to public service.

Our proximity to the state capital at Harrisburg provides students with a rich environment for both study and for internships. In addition to our full-time faculty, Public Policy draws on part-time faculty with

particular professional strengths. In recent years students have explored politics and political issues in classes taught by a state senator, a former lieutenant governor, a corrections system administrator, and a governor's press secretary. This integration of academic study with the "real world" of Pennsylvania politics and policy making is further enhanced through quality internships. The Public Policy program prides itself in placing qualified students in internships that facilitate the development of professional skills and promote the prospects for professional employment following graduation. Internship options include the Harrisburg Semester: Public Service Leadership Internships (PSLI). (For more information, see [www.hbg.psu.edu/hbg/hburgsem](http://www.hbg.psu.edu/hbg/hburgsem).) Students are encouraged to complete an internship during their senior year. Additional information regarding internships may be obtained by contacting the Public Policy Internship Coordinator.

**Admission Requirements for Transfer Students:**

Transfer students must have a 2.00 or higher cumulative grade-point average. The evaluation of prior college work is done on an individual basis by the Office of Enrollment Services at Penn State Harrisburg.

**Entry to Major Requirements:**

Entry to the Public Policy major requires a 2.00 or higher cumulative grade-point average and an average of C (2.00) or better in any course already taken in the major.

For a B.S. degree in Public Policy, a minimum of 120 credits is required.

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

**GENERAL EDUCATION:** 45 credits

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

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES)

**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:** 16 credits

**REQUIREMENTS FOR THE MAJOR:** 65 credits

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

(At least 15 credits must be at the 400 level.)

**PRESCRIBED COURSES** (15 credits)<sup>[1]</sup>

ECON 102 GS(3), ECON 104 GS(3), PLSC 1 GS(3), PLSC 309(3), PUBPL 304(3) (Sem: 1-6)

**ADDITIONAL COURSES** (18 credits)

Select 9 credits from the following: PLSC 300-499(3), PUBPL 241(3), PUBPL 300-499(3) (Sem: 1-8)

Select 6 credits from the following: PLSC 419(3), PLSC 425(3), PLSC 444(3), PLSC 488(3), PLSC 489(3), PUBPL 305(3) (Sem: 5-8)

Select 3 credits from the following: PUBPL 480(3), PUBPL 481(3), PUBPL 482(3), PUBPL 483(3), PUBPL 484(3), PUBPL 485(3), PUBPL 490(3) (Sem: 5-8)

**SUPPORTING COURSES AND RELATED AREAS** (32 credits)

Select 12 credits from the following: ACCTG 200-499(3), AFRAS 300-499(3), AMST 300-499(3), BESC 300-499(3), COMMS 300-499(3), CRIMJ 300-499(3), ECON 300-499(3), ENVE 460(3), FIN 300-499(3), HIST 300-499(3), MGMT 300-499(3), MKTG 300-499(3), SCLSC 300-499(3), SOSC 300-499(3), SOC 300-499(3), SRA 211(3), WMNST 300-499(3) (Sem: 5-8)

Select 20 credits in consultation with an academic adviser and in support of the student's interests (Sem: 5-8)

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

Last Revised by the Department: Summer Session 2008

Blue Sheet Item #: 36-05-018

Review Date: 2/26/08

UCA Revision: #2: 7/30/07

Coordinator updated: 6/5/12

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## Science

*Abington College (SCIAB)*

*Altoona College (SCIAL)*

*Berks College (SCIBL)*

*Capital College (SCICA)*

*University College (SCICC): Penn State Worthington-Scranton, Penn State York*

*University Park, Eberly College of Science (SC BS)*

*Integrated Five-Year Science/Business M.B.A. Program (SCBUS)*

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

PROFESSOR RONALD MARKLE, *in charge*

The Science major is an interdisciplinary degree that aims to provide a broad, general education in science. The bachelor of science (B.S.) curriculum is designed specifically for students who have education goals relating to scientific theory and practice and who require a high degree of flexibility to obtain their educational objectives. After completing foundation courses in calculus, chemistry, physics, and the life sciences, students will select additional science courses from designated areas. A large number of supporting credits permit students to readily include significant breadth or specialization into their undergraduate curriculum. Some examples include minors in business, computer and information science, education, kinesiology, or other fields. The degree allows students throughout the Commonwealth to become familiar with both the theory and the practice of science. It can help prepare students for various careers in pharmaceutical, biotechnical, chemical, medical, and agricultural industries. The degree can also be tailored to meet the specific requirements of professional programs such as medical, dental, or pharmacy schools. The General Science option of the B.S. Science degree allows for the most flexibility. Achievement in a more specialized set of goals can be met by selecting one of the other B.S. options offered: the Biological Sciences and Health Professions option, the Legal Studies, Government Service, Public Policy option, the Life Sciences option, the Mathematical Sciences option, or the Physical Sciences option. Not all of these options are available at all locations, and there are minor distinctions of the core curriculum at some locations, so see the Science program director at your College for further details.

In order to be eligible for entrance to the Science major, a student at any location must have: 1) attained at least a 2.00 cumulative grade-point average; 2) completed MATH 140 GQ(4) with a grade of C or better; 3) completed at least two of the following courses, BIOL 110 GN(4); CHEM 110 GN(3); PHYS 211 GN(4) or PHYS 250 GN(4), with a grade of C or better.

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

**TWO-YEAR PREPROFESSIONAL PREPARATION:** The first two years of the Science major (62 credits) can meet the pre professional needs of those interested in admission to some schools of pharmacy, physical therapy, optometry, nursing, and physician assistant training. Successful students can then transfer after two years of undergraduate study to the professional school to which they are admitted. Note, however, that no Penn State degree can be awarded after only two years (62 credits) of study in the Science major. Also, note that the abbreviated two-year curriculum alone does not prepare students for admission to professional schools of general medicine, veterinary medicine, or dental medicine. Consult with your college's health sciences professional adviser for additional information.

**ACCELERATED SCIENCE B.S./M.B.A. PROGRAM:** Students admitted to this special cooperative program between the Eberly College of Science and The Smeal College of Business will be able to combine a Bachelor of Science degree in the Science major, with a Master of Business Administration degree. Highly motivated students, who enter the University with a sufficient number and proper distribution of AP credits, will have the opportunity to complete the requirements for both programs within five years. The B.S. degree in the Science major General Science option, will be conferred upon satisfactory completion of:

1. A minimum of 112 acceptable undergraduate credits, which must include:

1. (24 credits) The University's General Education requirements in the areas of Writing and Speaking (9), Health and Physical Activity (3), Arts (6), Humanities (6). The University's General Education requirements in the areas of Quantification, Natural Sciences, and Social and Behavioral Sciences will be satisfied by course work listed under headings "c" and "f".)
2. The University's First-Year Seminar, United States Cultures, International Cultures, and Writing Across

the Curriculum requirements. (Note: These requirements may be double counted in order to satisfy other requirements in the program.)

3. (52-57 credits) BIOL 110 GN(4), CHEM 110 GN(3), CHEM 111(1), CHEM 112 GN(3), CHEM 113 GN(1), CMPSC 203 GQ(4), MATH 140 GQ(4), MATH 141 GQ(4); 3-4 credits from STAT 200 GQ(4), or STAT 250 GQ(3) or STAT 301(3) or STAT 401(3); 8-12 credits from PHYS 211 GN(4), PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2), or PHYS 250 GN(4), PHYS 251 GN(4); 3 additional life science credits from B M B 211(3), B M B 251(3), or MICRB 201(3); and 14 additional credits of course work from the Eberly College of Science, with at least nine credits at the 400 level.
4. (0-8 credits) Demonstration of second semester proficiency in a single foreign language.
5. (3-9 credits) SC 295(1-3), SC 395(1-3), SC 495(1-3) (Note: Students must complete three Eberly College of Science Cooperative Education experiences, including at least one experience which is a full semester in length.)
6. (10 credits) ECON 102 GS(3), ECON 104 GS(3), ACCTG 211(4)
7. (4-23 credits) Supporting courses and related areas selected from the program list.

2. The first semester of course work in The Smeal College of Business M.B.A. program (i.e., a minimum of 12 graduate credits).

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

**GENERAL EDUCATION:** 45 credits

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

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in GENERAL EDUCATION course selection or SUPPORTING COURSES AND RELATED AREAS)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in GENERAL EDUCATION course selection or SUPPORTING COURSES AND RELATED AREAS)

**WRITING ACROSS THE CURRICULUM:**

(Included in GENERAL EDUCATION course selection or REQUIREMENTS FOR THE MAJOR or SUPPORTING COURSES AND RELATED AREAS)

**REQUIREMENTS FOR THE MAJOR:** 94 credits

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

**COMMON REQUIREMENTS FOR MAJOR (All options)**

**PRESCRIBED COURSES** (20 credits)

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

BIOL 110 GN(4)[\[1\]](#) (Sem: 1-4)

**REQUIREMENTS FOR THE OPTIONS:** 74 credits

**GENERAL SCIENCE OPTION:** (74 credits)

**ADDITIONAL COURSES** (15-20 credits)

Select 4 credits from BIOL 129 GN(4), BIOL 220W(4), BIOL 230W(4), BIOL 240W(4) or BIOL 141 GN(3) and BIOL 142(1) (Sem: 3-4)

Select 3-4 credits from STAT 200 GQ(4), or STAT 250 GQ(3) or STAT 301(3) or STAT 401(3) (Sem: 3-4)

Select 8-12 credits from PHYS 211 GN(4)[\[1\]](#), PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 GN(4)[\[1\]](#), PHYS 251 GN(4) (Sem: 3-6)

**SUPPORTING COURSES AND RELATED AREAS** (54-59 credits)

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

Select 21-26 credits from program list (Students may apply 6 credits of ROTC.) (Sem: 1-8)

Select 3 credits from earth and mineral sciences (Sem: 3-8)

Select 18 credits in life, mathematical, or physical sciences, with at least 9 credits[\[1\]](#) at the 400 level[\[60\]](#) (Sem: 3-8)

Select 3 credits in Global, Social and Personal Awareness from department approved course list in consultation with adviser (Sem: 3-8)

Select 3 credits in Teamwork and Interpersonal Communication from department approved course list in consultation with adviser (Sem: 3-8)

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

**BIOLOGICAL SCIENCES AND HEALTH PROFESSIONS OPTION:** (74 credits)

**PRESCRIBED COURSES** (3 credits)

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

**ADDITIONAL COURSES (24-31 credits)**

Select 4 credits from BIOL 129 GN(4), BIOL 220W(4), BIOL 230W(4), BIOL 240W(4) or BIOL 141 GN(3) and BIOL 142(1) (Sem: 3-4)

Select 3-4 credits from STAT 200 GQ(4), or STAT 250 GQ(3) or STAT 301(3) or STAT 401(3) (Sem: 3-4)

Select 6-8 credits from CHEM 210(3), CHEM 212(3), CHEM 213(2) or CHEM 202(3), CHEM 203(3) (Sem: 3-6)

Select 3 credits from B M B 211(3), B M B 251(3), MICRB 201(3), BIOL 222(3), or BIOL 322(3) (Sem: 3-6)

Select 8-12 credits from PHYS 211 GN(4)[1], PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 GN(4)[1], PHYS 251 GN(4) (Sem: 3-6)

**SUPPORTING COURSES AND RELATED AREAS (40-47 credits)**

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

Select 15 credits from program list for Healthcare/ Medicine/Ethical Competencies; 6 credits must be at the 400-level (Sem: 3-8) Select from department approved course list in consultation with adviser.

Select 10-17 credits from program list (Students may apply 6 credits of ROTC. (Sem: 1-8)

Select 3 credits in Global, Social and Personal Awareness from department approved course list in consultation with adviser (Sem: 3-8)

Select 3 credits in Teamwork and Interpersonal Communication from department approved course list in consultation with adviser (Sem: 3-8)

Select 9 credits[1] of 400-level B M B, BIOL, BIOTC, or MICRB courses (Sem: 5-8)

**LEGAL STUDIES, GOVERNMENT SERVICE, PUBLIC POLICY OPTION (74 credits)**

**ADDITIONAL COURSES (15-20 credits)**

Select 4 credits from BIOL 129 GN(4), BIOL 220W(4), BIOL 230W(4), BIOL 240W(4) or BIOL 141 GN(3) and BIOL 142(1) (Sem: 3-4)

Select 3-4 credits from STAT 200 GQ(4), or STAT 250 GQ(3) or STAT 301(3) or STAT 401(3) (Sem: 3-4)

Select 8-12 credits from PHYS 211 GN(4)[1], PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 GN(4)[1], PHYS 251 GN(4) (Sem: 3-6)

**SUPPORTING COURSES AND RELATED AREAS (54-59 credits)**

Select 12-17 credits from program list (Students may apply 6 credits of ROTC. (Sem: 1-8)

Select 18 credits in life, mathematical, or physical sciences, with at least 9 credits[1] at the 400 level[60] (Sem: 3-8)

Select 18 credits from program list for Legal Studies, Government Service, Public Policy; 6 credits must be at the 400-level (Sem: 3-8) Select from department approved course list in consultation with adviser.

Select 3 credits in Global, Social and Personal Awareness from department approved course list in consultation with adviser (Sem: 3-8)

Select 3 credits in Teamwork and Interpersonal Communication from department approved course list in consultation with adviser (Sem: 3-8)

**LIFE SCIENCE OPTION: (74 credits)**

**ADDITIONAL COURSES (24-30 credits)**

Select 4 credits from BIOL 220W GN(4), BIOL 230W GN(4), BIOL 240W GN(4) (Sem: 3-4)

Select 3 credits from CMPSC 101 GQ(3), MATH 250(3), or STAT 250 GQ(3) (Sem: 3-4)

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

CHEM 202(3), CHEM 203(3); or CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-6)

PHYS 211 GN(4)[1], PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 GN(4)[1], PHYS 251 GN(4) (Sem: 3-6)

**SUPPORTING COURSES AND RELATED AREAS (44-50 credits)**

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

Select 23-29 credits from program list (Students may apply 6 credits of ROTC.) (Sem: 1-8)

Select 3 credits in Global Social and Personal Awareness

Select 3 credits in Teamwork and Interpersonal Communication

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

Select 9 credits[1] of 400-level B M B, BIOL, BIOTC, or MICRB courses (Sem: 5-8)

**MATHEMATICAL SCIENCE OPTION: (74 credits)**

**PRESCRIBED COURSES (5-6 credits)**

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

**ADDITIONAL COURSES (24-29 credits)**

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

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

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

CMPSC 360(3) or MATH 311W(3-4); STAT 301 GQ(3) or STAT 318(3) (Sem: 3-8)  
PHYS 211 GN(4)[1], PHYS 212 GN(4), PHYS 213 GN(2), PHYS 214 GN(2); or PHYS 250 GN(4)[1], PHYS 251 GN(4) (Sem: 3-8)

**SUPPORTING COURSES AND RELATED AREAS** (39-45 credits)

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

Select 18-24 credits from program list (Students may apply 6 credits of ROTC.) (Sem: 1-8)

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

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

Select 3 credits in Global, Social & Personal Awareness

Select 3 credits in Teamwork & Interpersonal Communication

**PHYSICAL SCIENCE OPTION:** (74 credits)

**PRESCRIBED COURSES** (15 credits)

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

**ADDITIONAL COURSES** (16-18 credits)

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

CHEM 202(3), CHEM 203(3); or CHEM 210(3), CHEM 212(3), CHEM 213(2) (Sem: 3-6)

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

Select 3 credits from ASTRO 292 GN(3); E MCH 211(3); M E 300(3); or PHYS 237(3) (Sem: 3-8)

**SUPPORTING COURSES AND RELATED AREAS** (41-43 credits)

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

Select 20-22 credits from program list (Students may apply 6 credits of ROTC.) (Sem: 1-8)

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

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

Select 3 credits in Global, Social & Personal Awareness

Select 3 credits in Teamwork & Interpersonal Communication

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

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

Last Revised by the Department: Fall Semester 2016

Blue Sheet Item #: 45-01-001

Review Date: 08/23/2016

UCA Revision #1: 9/1/06

UCA Revision #2: 7/730/07

SC

## Secondary Education Social Studies

*Capital College (SESST)*

PROFESSOR KAMINI GRAHAME, *Program Coordinator, School of Behavioral Sciences and Education*

The Secondary Education Social Studies major prepares students to meet the requirements as established by the Pennsylvania Department of Education, to be certified for the Social Studies Instructional I Certificate. The major prepares students to teach history, government, economics, geography, psychology, sociology, and anthropology.

Students are challenged to prepare for teaching assignments at the middle and high school level, and in diverse settings characterized as rural, urban, and suburban. The art and science of teaching in secondary schools is undergoing significant transformation as new technologies, time allocation for instruction, and new instructional strategies are impacting the delivery of social studies instruction.

Students admitted to the program must have the appropriate clearances. These include FBI fingerprint check, Act 151 child abuse history clearance, and Act 34 criminal record check.

Students thinking seriously about entering the education program should plan their freshman and sophomore years carefully. Semesters 5 through 8 are very structured.

**Entry to Secondary Education Social Studies requires the following:**



1. A minimum grade point average of 3.0.
2. Completion of ENGL 15 GWS(3) or ENGL 30 GWS(3) and three credits of literature from approved list with a C or higher grade.
3. Completion of six credits of college-level mathematics (MATH or STAT prefixes) with a C or higher grade.
4. Satisfaction of any entrance testing requirements set out by the Pennsylvania Department of Education in effect at the time of application for the major

**Selective Retention:**

Following entrance to the major, students will be evaluated for retention in the program based on:

1. maintaining a cumulative GPA of 3.0 or higher;
2. completion of required courses with a C or higher grade;
3. an acceptable or above rating on the Penn State Harrisburg Professional Dispositions for Teacher Education.\*

To be eligible to student teach, students must:

1. maintain a cumulative GPA of 3.0 or higher;
2. complete all required Content and Education Courses with a C or higher grade;
3. satisfaction of any entrance testing requirements set out by the Pennsylvania Department of Education in effect at the time of application for entrance to major;
4. be rated acceptable or above on the Penn State Harrisburg Professional Dispositions for Teacher Education.\*

In order to successfully complete the Secondary Education Social Studies Program, students must:

1. complete EDUC 490 with a grade of C or higher;
2. maintain a cumulative GPA of 3.0 or higher;
3. complete all required Content and Education Courses with a C or higher grade;
4. complete a presentation portfolio; and
5. be rated acceptable or above on the Penn State Harrisburg Professional Dispositions for Teacher Education.\*

\*FOR MORE DETAILED INFORMATION SEE THE SECONDARY EDUCATION HANDBOOK.

For a B.SOSC. degree in Secondary Education Social Studies, a minimum of 122 credits is required.

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

**GENERAL EDUCATION:** 45 credits

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

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

**FIRST-YEAR SEMINAR:**

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

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 3 credits

**REQUIREMENTS FOR THE MAJOR:** 95 credits

(This includes 21 credits of General Education courses: 6 credits of GH courses, 3 credits of GN courses, 6 credits of GS courses, 6 credits of GQ courses.)

(At least 15 credits must be at the 400 level.)

**PRESCRIBED COURSES** (65 credits)**[1]**

BISC 3 GN(3), CI 280 GH(3), EDPSY 14(3), , HIST 20 GH;US(3), HIST 21 GH;US(3), PSYCH 100 GS(3), SOC 1 GS(3) (Sem: 1-4)

EDUC 313(2), EDUC 314(3), EDUC 315 US(3), EDUC 415(3), EDUC 458(3), EDUC 459(3), EDUC 490(12) (Sem: 5-8)

GEOG 40 GS;IL(3), GEOG 128 GS;IL(3), HDFS 239 GS(3), HIST 320(3), PLSC 1 GS(3) (Sem: 5-8)

**ADDITIONAL COURSES** (12 credits)

Select 6 credits from the following:

MATH 17 GQ(3), MATH 18 GQ(3), MATH 21 GQ(3), MATH 22 GQ(3), MATH 26 GQ(3), MATH 30 GQ(3), MATH 35 GQ(3), MATH 36 GQ(3), MATH 40 GQ(5), MATH 200 GQ(3) or MATH 220 GQ(2-3), STAT 100 GQ(3), STAT

200 GQ(4) (Sem: 1-4)

Select 3 credits from: ECON 104 GS(3) or ECON 14 GS(3) (Sem: 1-4)

Select 3 credits from: HIST 1 GH;IL(3) or HIST 10 GH;IL(3) (Sem: 1-4)

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

(6 of these 18 credits must be at the 400-level. In addition, 3 of these must be US cultures)

Select 3 credits of literature courses from approved department list (Sem: 1-4)

Select 3 credits of African American studies, American studies, history or minority studies from approved department list (Sem: 5-8)

Select 3 credits of anthropology from approved department list (Sem: 5-8)

Select 3 credits of psychology from approved department list (Sem: 5-8)

Select 3 credits of political science (Sem: 5-8)

Select 3 credits of sociology (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 2013

Blue Sheet Item #: 41-06-034A

Review Date: 04/09/2013

Program Coordinator updated: 7/3/15

R & T: 02/24/2015

UCA Revision #1: 9/1/06

UCA Revision #2: 7/30/07

**Comments**

CL

## Security and Risk Analysis

*Penn State Altoona (SRAAL)*

*Penn State Berks (SRABL)*

*Penn State Harrisburg (SRACA)*

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

*World Campus (SRAWC\_BS)*

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

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

The Bachelor of Science in Security and Risk Analysis (SRA) in the College of Information Sciences and Technology is intended to familiarize students with the general frameworks and multidisciplinary theories that define the area of security and related risk analyses. Courses in the major will engage students in the challenges and problems associated with assuring information confidentiality and integrity (e.g., social, economic, technology-related, and policy issues), as well as the strengths and weaknesses of various methods for assessing and mitigating associated risk.

The major provides a grounding in the analysis and modeling efforts used in information search, visualization, and creative problem solving. This knowledge is supplemented through an examination of the legal, ethical, and regulatory issues related to security that includes analyzing privacy laws, internal control and regulatory policies, as well as basic investigative processes and principles. Such understanding is applied to venues that include transnational terrorism, cyber crimes, financial fraud, risk mitigation, and security and crisis management. It also includes overviews of the information technology that plays a critical role in identifying, preventing and responding to security-related events.

Advisory groups from within and outside the University involved in the design of the major have agreed that graduates who can understand the cognitive, social, economic, and policy issues involved in security and risk management as well as the basics of the information technology and analytics that are included in the security/risk arena will be very successful. These observations drove the design and objectives of the SRA major.

SRA majors will choose one of the following options:

**INTELLIGENCE ANALYSIS AND MODELING OPTION.** This option focuses on developing a more thorough

knowledge of the strategic and tactical levels of intelligence collection, analysis, and decision-making. This includes examining the foundations of decision analysis, economic theory, statistics, data mining, and knowledge management, as well as the security-specific contexts in which such knowledge is applied.

**INFORMATION AND CYBER SECURITY OPTION.** This option includes a set of courses that provides an understanding of the theories, skills, and technologies associated with network security, cyber threat defense, information warfare, and critical infrastructure protection across multiple venues.

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

1. have completed the following entrance-to-major requirements with grades of C or better in each: IST 140(3) (or equivalent CMPSC 101 GQ(3) or CMPSC 121 GQ(3)), IST 210(3), SRA 111(3); and SRA 211(3).
2. have achieved a minimum cumulative grade point average of 2.00 prior to and through the end of the semester during which the entrance-to-major procedure is carried out.

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

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

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

For the B.S. degree in Security and Risk Analysis, a minimum of 120 credits is required.

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

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

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

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

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

**ELECTIVES:** 4 credits

**REQUIREMENTS FOR THE MAJOR:** 92 credits  
(This includes 21 credits of General Education courses: 6 credits of GQ courses; 6 credits of GS courses; 3 credits of GWS courses, 3 credits of GH, and 3 credits of GN courses)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 71 credits

**PRESCRIBED COURSES** (35 credits)  
CMPSC 101 GQ(3)[1], SRA 111 GS(3)[1] (Sem: 1-2)  
IST 110 GS(3)[1] (Sem: 1-3)  
IST 210(3)[1] (Sem: 1-4)  
SRA 211(3)[1], SRA 221(3)[1], SRA 231(3)[1] (Sem: 2-4)  
STAT 200 GQ(4) (Sem: 3-6)

IST 495(1)[1] (Sem: 3-8)  
IST 432(3)[1], SRA 311(3)[1], IST 440(3)[1] (Sem: 7-8)

**ADDITIONAL COURSES** (15 credits)

AGBM 101 GS(3) or ECON 102 GS(3) (Sem: 1-4)  
PLSC 1 GS(3), PLSC 14 GS;IL(3), or GEOG 40 GS;IL(3) (Sem: 1-4)  
PSYCH 100 GS(3) or SOC 5 GS(3) (Sem: 1-6)  
ENGL 202C GWS(3) or ENGL 202D GWS(3) (Sem: 5-8)  
SRA 365(3)[1]; STAT 460(3)[1] (Sem: 5-6)

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

Attainment of third-level proficiency in a single foreign language (12 credits). Proficiency must be demonstrated by either examination or course work. See the admission section of the general information in this *Bulletin* for the placement policy for Penn State foreign language courses. (Sem: 1-4)  
Select 3 credits of INatural Sciences (GN) in consultation with adviser (Sem: 1-6)  
Select 6 credits of international courses from College-approved list or other courses approved by adviser. (Sem: 5-8)

**REQUIREMENTS FOR THE OPTION:** 21 credits

**INTELLIGENCE ANALYSIS AND MODELING OPTION:** (21 credits)

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

ECON 302 GS(3), SRA 421(3) (Sem: 3-6)  
SRA 433(3), SRA 468(3) (Sem: 5-8)

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

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

**INFORMATION AND CYBER SECURITY OPTION:** (21 credits)

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

IST 220(3) (Sem: 1-6)  
IST 451(3), IST 454(3), IST 456(3) (Sem: 5-8)

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

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

## **Integrated B.S. in Security and Risk Analysis / M.S. in Information Sciences and Technology**

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

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

The integrated B.S. in Security and Risk Analysis / M.S. in Information Sciences and Technology (IUG) degree meets the needs of the most academically talented students in the Security and Risk Analysis undergraduate major. A proportion of these successful students wish to pursue graduate studies sometime after graduation. Offering the IUG benefits these students by offering an accelerated path to a graduate degree. Additionally, the IUG program can provide these students with a more cohesive program of study with opportunities to engage in more comprehensive research leading to both the bachelor's and master's degree.

For the B.S. in Security and Risk Analysis / M.S. in Information Sciences and Technology IUG program, a minimum of 120 credits is required for the bachelor's degree and 30 credits for the M.S. degree. Students

admitted to the IUG program may double-count a maximum of 12 credits to their graduate and undergraduate degrees. The required 6 credits of IST 504 and IST 505 will apply to both the graduate program and the undergraduate program. Students may choose an additional 6 credits to double-count for both the undergraduate and graduate degrees from the following: SRA 433, SRA 468, SRA 471, IST 451, IST 452, IST 454, IST 456. Graduate thesis or scholarly paper credits may not double-count.

The objectives of the Integrated Undergraduate Graduate Program include:

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

## Admission Requirements

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

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

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

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

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

In addition, applicants must apply to and be admitted to the Graduate School of the Pennsylvania State University at the time of their application to the IUG degree program.

These admission standards are high, as it is thought the program will only be appropriate for students with high levels of academic skills. The program area does have discretion in admitting Security and Risk Analysis majors into the integrated program, and extenuating circumstances can always be considered in terms of possible admission. Individuals who are unable to be admitted into the integrated program of study can apply for regular admission to the graduate program when they complete their undergraduate program of study.

Sample Sequence of Graduate Coursework in Addition to Undergraduate Courses

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

\* Students admitted to the IUG program may double-count a maximum of 12 credits toward their graduate and undergraduate degrees in Information Sciences and Technology. In their senior year, IUG students will take 6 credits of specified graduate work, courses IST 504 and IST 505, and 6 credits of methods courses. These 6 credits of IST 504 and IST 505 will apply to both the graduate program and the undergraduate IST/SRA support option requirement. In their super senior year, students may choose an additional 6 credits to double-count for both the undergraduate and graduate degrees. These courses must be at the 400-level or above. Students may choose any 400-level undergraduate Option course (SRA 433, SRA 468, SRA 471, IST 451, IST 452, IST 454, IST 456) that they are using to fulfill an undergraduate option requirement and apply the credits to both the undergraduate option requirement and the graduate specialty course requirement. Credits associated with the thesis or culminating scholarly paper, i.e., IST 600 and IST 594, may not be double-counted. However, for Schreyer Honors College students, the Master's thesis deliverable, itself, may double-count for the undergraduate thesis deliverable requirement.

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

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

The total resulting credits will be a minimum of 150 credits, with 120 credits completed for the undergraduate SRA degree. Twelve graduate credits will be completed in the senior year, and the remaining 18 graduate credits will be completed in the super senior year.

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

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

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

Last Revised by the Department: Fall Semester 2017

Blue Sheet Item #: 46-01-088

Review Date: 8/22/2017

UCA Revision #1: 8/14/06

UCA Revision #2: 7/30/07

### Comments

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## Sociology

*Capital College (SOCIO)*

PROFESSOR KENNETH B. CUNNINGHAM, *Program Coordinator*

Sociology is the scientific study of society in all of its complexity. It includes the study of social structure, social interaction and social change from the micro level of small groups and families; to the meso level of communities, organizations, and institutions; to the macro level of globalization, war, technology and culture. The world today is undergoing tremendous changes and facing great challenges, problems, and possibilities. Sociology attempts to understand our world and to improve it.

The sociology major at Penn State Harrisburg provides a unique orientation to social change at multiple levels, including families, communities, organizations, social movements, institutions, society, and the world system. The major addresses topics such as culture, race/ethnicity, gender, sexual orientation, social class, inequality, urban life, globalization, environmental change, and political conflict.

The sociology program at Penn State Harrisburg prepares students to succeed in an increasingly complex, diverse, and globalized world. A major in sociology provides opportunities for a wide range of career options. Students with degrees in sociology work in social services, community, advocacy and non-profit organizations, education, business, law, criminal justice, policy-making, social science research, and public administration. An undergraduate degree in sociology also provides a strong foundation for graduate study in sociology and fields such as law, social work, human resources, criminal justice, community psychology, urban planning, political science, and related areas.

Two options are available within the major: (1) the General Sociology Option and (2) the Community Organization and Social Services Option.

**GENERAL SOCIOLOGY OPTION:** This option provides students with strong education in general sociology in a diverse range of sociological topics. The General Sociology Option is designed for students who seek a solid sociological education with preparation for the widest range of careers and employment opportunities, as well as for graduate education.

**COMMUNITY ORGANIZATION AND SOCIAL SERVICES OPTION:** This option provides students with strong preparation for careers working in community settings or in social services. The Community Organization and Social Services Option is designed for students who wish to work directly with people in a broad range of possible settings, in both public and private sectors.

**Entry to Major Requirements:**

Entry to the Sociology major requires 2.00 or higher cumulative grade-point average.

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

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

**GENERAL EDUCATION:** 45 credits

(3 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, GENERAL EDUCATION, or MAJOR REQUIREMENTS)

**UNITED STATES CULTURES AND INTERNATIONAL CULTURES:**

(Included in REQUIREMENTS FOR THE MAJOR)

**WRITING ACROSS THE CURRICULUM:**

(Included in REQUIREMENTS FOR THE MAJOR)

**ELECTIVES:** 9-15 credits

**REQUIREMENTS FOR THE MAJOR:** 67-73 credits<sup>[1]</sup>

(This includes 7 credits of General Education course requirements: 3 credits of GWS courses; 4 credits in GQ courses)

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 46-52 credits

**PRESCRIBED COURSES** (18-24 credits)

ENGL 202A GWS(3), SOC 1 GS(3) (Sem: 1-4)

SOC 207(3), SOC 400(3), SOC 405(3), SOC 495(3-9) (Sem: 5-8)

**ADDITIONAL COURSES** (28 credits)

At least 9 of these credits must be at the 400-level

A. Statistics. Select 4 credits from PSYCH 200 GQ(4), STAT 200 GQ(4) (Sem: 1-4)

B. Social Institutions. Select 9 credits from SOC 30(3), SOC 55(3), SOC 403(3), SOC 411 US(3) or HDFS 416 US(3), SOC 416(3), SOC 429(3), SOC 430(3), SOC 446(3), SOC 456/WMNST 456(3) (Sem: 5-8)

C. Social Change and Global Perspectives. Select 9 credits from SOC 15(3), SOC 109(3), SOC 297(3), SOC 424(3), SOC 425(3), SOC 432(3), SOC 445(3), SOC 448(3), SOC 454 US(3) (Sem: 5-8)

D. Diversity. Select 6 credits from AFAM 212 US(3), BESC/WMNST 464 US(3), SOC/AFAM/WMNST 103 US(3), SOC/WMNST 110 GS;US(3), SOC/AFAM 409 US(3), SOC 428(3), SOC 435 or HDFS 434 (3), SOC/RLST 461 US;IL(3), WMNST/CED 420 US;IL(3) (Sem: 5-8)

**REQUIREMENTS FOR THE OPTION:** 21 credits

**GENERAL SOCIOLOGY OPTION:** (21 credits)

**ADDITIONAL COURSES** (9 credits)

Select 3 credits from each of sections B, C and D above (Sem: 5-8)

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

Select 6 credits (minimum of 3 credits at the 400-level) in consultation with adviser from AAAS, AFAM, BESC, GEOG, SOC (Sem: 5-8)

Select 6 credits (minimum of 3 credits at the 400-level) in consultation with adviser from AMST, ANTH, ART, ARTH, COMM, CRIMJ, ENGL, HDFS, HIST, IHUM, MGMT, MUSIC, PLSC, PSYCH, PUBPL, THEA, WMNST (Sem: 5-8)

**COMMUNITY ORGANIZATION AND SOCIAL SERVICES OPTION:** (21 credits)

**PRESCRIBED COURSES** (6 credits)

BESC 370(3) (Sem: 5-8)

SOC 5 GS(3) (Sem 1-4)

**ADDITIONAL COURSES** (9 credits)

Select 3 credits from each of A, B, and C below (Sem: 5-8)

A. Organization and Leadership: BESC 376(3), BESC 408(3), MGMT 321(3), MGMT 331(3)

B. Community Contexts: SOC 15(3), SOC 103 US(3), SOC 406(3), SOC 412(3)

C. Group Processes and Dynamics: BESC 407(3), BESC 459(3), SOC 3 GS(3), SOC 403(3), SOC 404(3)

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

Choose 6 credits (minimum of 3 credits at the 400-level) in consultation with adviser from AFAM, AMST, ANTH, ART, ARTH, BESC, COMM, CRIMJ, ENGL, GEOG, HDFS, HIST, IHUM, MGMT, MUSIC, PLSC, PSYCH, PUBPL, SOC, THEA, WMNST (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 2014

Blue Sheet Item #: 43-02-021

Review Date: 10/7/2014

UCA Revision #2: 7/30/07

CL

## **Structural Design and Construction Engineering Technology**

*Capital College (SDCET)*

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

PROFESSOR SEROJ MACKERTICH, *Program Chair, School of Science, Engineering, and Technology*

The program in Structural Design and Construction Engineering Technology provides the basic education required for the structural engineer and construction profession. Students learn the basic general engineering concepts needed for this major with emphasis on the fundamentals, structural design principles, and construction techniques through required course work. They are given the opportunity to focus in a discipline of construction management or structural design through a selected option or choose a broad general option. Courses in communication skills, arts, humanities, social and behavioral sciences, and



other engineering related areas broaden the program. Students gain experience in working as members of a team and in using interdisciplinary approaches to solve problems. These experiences, as well as those related to design and construction principles, are taught through exercises in the classroom, laboratory, and field. The program culminates with a capstone project course in which the students' knowledge and skills are applied to specific problems.

For the B.S. degree in Structural Design and Construction Engineering Technology, a minimum of 125 credits is required.

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

**GENERAL EDUCATION:** 45 credits

(20-24 of these 45 credits are included in the REQUIREMENTS FOR THE MAJOR)

(See description of General Education in this bulletin.)

**FIRST-YEAR SEMINAR:**

(Included in ELECTIVES, REQUIREMENTS FOR THE MAJOR 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:** 2-10 credits

**REQUIREMENTS FOR THE MAJOR:** 95-102 credits

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

**COMMON REQUIREMENTS FOR THE MAJOR (ALL OPTIONS):** 76-80 credits

**PRESCRIBED COURSES** (45 credits)

CHEM 110 GN(3), CHEM 111 GN(1), ENGL 202C GWS(3), MATH 140 GQ(4) (Sem: 1-4)

ET 200(3) (Sem: 2-5)

CE 254 GHA;US(3)[1], SSET 295(1) (Sem: 3)

CET 342(3), CET 343(3) (Sem: 5-6)

CE 333(3)[1], CET 308(3), CET 430(3)[1], CET 431(3)[1], CET 432(3)[1], CET 434(3), CET 435(3)[1] (Sem: 5-8)

**ADDITIONAL COURSES** (31-35 credits)

Select 2-3 credits from: EGT 101(1) and EGT 102(1) or EDSGN 100(3) (Sem: 1-2)

Select 3-4 credits from: PHYS 150 GN(3), PHYS 211 GN(4), PHYS 250 GN(4) (Sem: 1-3)

Select 3-4 credits from: PHYS 151 GN(3), PHYS 212 GN(4), PHYS 251 GN(4) (Sem: 2-4)

Select 3 credits from: ECON 14 GS(3), ECON 102 GS(3), ECON 104 GS(3) (Sem: 2-4)

Select 4 credits from: MATH 141 GQ(4), STAT 200 GQ(4) (Sem: 2-6)

Select 3 credits from: EMCH 211(3)[1], ET 300(3), MCHT 111(3)[1] (Sem: 2-6)

Select 3 credits from: EMCH 213(3)[1], ET 322(3)[1], MCHT 213(3)[1] (Sem: 2-6)

Select 1 credit from: ET 323(1), MCHT 214(1) (Sem: 2-6)

Select 3 credits from: CE 310(3), SUR 111(3) (Sem: 2-7)

Select 3 credits from: CMPSC 101 GQ(3), CMPSC 121 GQ(3), CMPSC 201 GQ(3), CMPSC 202 GQ(3) (Sem: 3-4)

Select 3-4 credits from: ACCTG 211(4), MGMT 100(3) or MGMT 301(3) (Sem: 3-8)

**REQUIREMENTS FOR THE OPTION:** 19-22 credits

**CONSTRUCTION MANAGEMENT OPTION:** (19-21 credits)

**PRESCRIBED COURSES** (10 credits)[1]

CE 456(3), CE 458(3), CE 488C(4) (Sem: 7-8)

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

Select 3-4 credits from ACCTG 211(4) or MGMT 100(3), MGMT 301(3) (Sem: 2-8)

Select 3 credits from AE 310(3) or CE 321(3) or ENVE 430(3) or MET 435(3) (Sem: 7-8)

**SUPPORTING COURSES AND RELATED AREAS** (3-4 credits)

Select 3-4 credits from approved program list (Sem: 7-8)

**STRUCTURAL DESIGN OPTION:** (19-20 credits)

**PRESCRIBED COURSES** (13 credits)

CE 445(3)[1], CE 449(3)[1], CE 488D(4)[1], EMCH 212(3) (Sem: 7-8)

**ADDITIONAL COURSES** (3 credits)

Select 3 credits from CET 361(3) or CE 360(3) (Sem: 7-8)

**SUPPORTING COURSES AND RELATED AREAS** (3-4 credits)

Select 3-4 credits from approved program list (Sem: 7-8)

**GENERAL OPTION:** (22 credits)**PRESCRIBED COURSES** (12 credits)**[1]**

CE 445(3), CE 449(3), CE 456(3), CE 458(3) (Sem: 7-8)

**ADDITIONAL COURSES** (10 credits)

Select 3 credits from AE 310(3) or MET 435(3) (Sem: 7-8)

Select 3 credits from CE 360(3) or CET 361(3) (Sem: 7-8)

Select 4 credits from CE 488C(4)**[1]** or CE 488D(4)**[1]** (Sem: 7-8)

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

Last Revised by the Department: Fall Semester 2012

Blue Sheet Item #: 41-03-035

Review Date: 11/13/2012

UCA Revision #1: 8/14/06

UCA Revision #2: 7/30/07

CL

## Associate Degrees

# Business Administration

*Abington College (2BAAB)*

*Altoona College (2BAAL)*

*Berks College (2BABL)*

*Capital College (2BACA)*

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

## 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 checksheet, 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

## Minors

### American Studies Minor

*Capital College (AMSTD)*

*Capital College - Simon Bronner, [sjb2@psu.edu](mailto:sjb2@psu.edu)*  
*Abington College - Andrew August, [axa24@psu.edu](mailto:axa24@psu.edu)*  
*Penn State Brandywine - Julie Gallagher, [jag63@psu.edu](mailto:jag63@psu.edu)*  
*Penn State Fayette - Jay Precht, [jhp21@psu.edu](mailto:jhp21@psu.edu)*  
*Penn State York - Robert Farrell, [jrf10@psu.edu](mailto:jrf10@psu.edu)*

This interdisciplinary minor is designed for students who want to complement their major program. American Studies is an interdisciplinary field that explores the patterns of life and thought of the American peoples, past and present. American Studies helps students prepare for further study or careers in education, government, business, science, communication, law, museums, historical and cultural agencies, and archives. Internships are available for qualified students in American Studies. The internship is an extension of the student's academic studies and is an opportunity to gain practical experience.

A student seeking admission to the American Studies Minor must first be admitted to a major at Penn State. Upon admission, a Minor Adviser will be appointed from within the American Studies faculty to guide the student. For the American Studies Minor, a total of 18 credits is required. At least 6 credits must be at the

400 level.

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

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES** (3 credits)

AMST 491W(3) (Sem: 5-8)

**ADDITIONAL COURSES** (15 credits)

AM ST 100 GH;US(3) or AM ST 100Y GH(3) (Sem: 1-4)

Select 12 credits from any American Studies offerings (AMST) or from courses related to American Studies chosen from a list provided by the college. At least six of those credits must be at the 400 level.

Substitutions must be approved by the American Studies Program head at the appropriate college. (Sem: 5-8)

Last Revised by the Department: Fall Semester 2013

Blue Sheet Item #: 42-02-019

Review Date: 10/08/2013

UCA Revision #2: 7/26/07

CL

## Business Administration Minor

*Capital College (BADMN)*

*Penn State Abington, Dr. Feng Zhang, fzz34@psu.edu*

This interdisciplinary minor provides students in all majors with a business-oriented supplement to their major fields of study. It is intended to provide a set of basic skills that complement the unique competencies gained in their non-business disciplines. It is strongly recommended that students taking this minor elect at least one course in mathematics through college calculus, and a second course in descriptive and inferential statistics, as part of their General Education requirements or electives for the major. Students taking this minor may not have more than 25 percent of their total credits for graduation in business courses, and must receive a grade of C or better in all courses required for the minor. Students pursuing the Business Administration minor should apply to the School of Business Administration and select business courses in consultation with a business adviser.

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

**REQUIREMENTS FOR THE MINOR:** 22 credits

**PRESCRIBED COURSES** (7 credits)

ACCTG 211(4), MGMT 301(3) (Sem: 3-4)

**ADDITIONAL COURSES** (9 credits)

Select 3 credits from ECON 102 GS(3) or ECON 104 GS(3) (Sem: 3-4)

Select 6 credits from BA 243(4) or BLAW 243(3), BA 100 GS(3), BLAW 340(3), BA 364 US;IL(3), ECON 342(3), ECON 351(3), FIN 100(3) or FIN 301(3), MGMT 321(3), MIS 390(3), MRKT 221(3) or MKTG 301(3), SCM 320(3) (course prerequisites must be met)(Sem: 3-8)

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

Select 6 credits at the 400 level in ACCTG, BA, ECNMS, FIN, HCM, MIS, IST, MGMT, MRKT, or BESC 408(3), BESC 410(3), BESC 468(3), COMM 414(3), PSYCH 473(3), or other School-approved courses (course prerequisites must be met) (Sem: 5-8)

Last Revised by the Department: Summer Session 2002

Blue Sheet Item #: 30-06-054

Review Date: 1/14/03

UCA Revision #1: 8/3/06

UCA Revision #2: 7/26/07

CL

## Communications Minor

*Capital College (COMCL)*

The Communications minor provides students with an introduction to the tool skills needed to function as a professional communicator, as well as a basic understanding of communication processes and theory. Students seeking careers in fields such as public administration, business, criminal justice, law, information technology, and the medical, social and behavioral professions will find this minor provides instruction in a valuable additional knowledge and skill area important in today's information society.

Students must apply for entrance to the minor after achieving fifth semester classification.

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)

COMM 251(3) (Sem: 3-6)

**ADDITIONAL COURSES** (3 credits)

COMM 230(3) (Sem: 3-6)

**SUPPORTING COURSES** (12 credits)

Select 12 credits from approved department list. At least 6 of these credits must be at the 400-level (Sem: 2-8)

Last Revised by the Department: Fall Semester 2005

Blue Sheet Item #: 33-06-043

Review Date: 04/12/05

UCA Revision #2: 7/27/07

CL

## Computer Science Minor

Computing has become an essential component of many disciplines, and it is driving innovation in fields far beyond computer science. The minor in Computer Science at Penn State Harrisburg provides basic proficiency in computer science, with an emphasis on building both a theoretical framework for computer science and providing practical skills needed to apply computer science to other fields of study. The knowledge and skills gained in the minor expands opportunities for students seeking careers in the growing number of fields that require a strong foundation in computer science. In addition, for students seeking to pursue graduate study, the minor provides background knowledge for the computing intensive aspects of their chosen discipline.

The minor begins with the second-level course in computer programming (CMPSC 122), a course in object-oriented programming with web applications (CMPSC 221), a course in discrete math for computer science (CMPSC 360), and a course in data structures (CMPSC 463). These twelve credits are followed with an additional six credits of 400-level work in computer science (CMPSC). Note that CMPSC 121 and MATH 140 are prerequisites for CMPSC 122.

*Capital College (COMP)*

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

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

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES** (12 credits)

CMPSC 122(3) (Sem: 1-3)

CMPSC 221(3) (Sem: 4-5)

CMPSC 360(3), CMPSC 462(3) (Sem:4-8)

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

Select 6 credits of 400-level CMPSC courses from the department list of approved Additional Courses (Sem: 5-8)

Last Revised by the Department: Spring Semester 2013

Blue Sheet Item #: 41-05-051

Review Date: 02/19/2013

UCA Revision #1: 8/3/06

UCA Revision #2: 7/27/07

CL

## Creative Writing Minor

Contact: Charlotte Holmes, [cxh18@psu.edu](mailto:cxh18@psu.edu)

Abington College, Penn State Altoona, Behrend College, Berks College, Capital College, University Park - Liberal Arts, University College (CWRT\_UMNR)

This minor offers students not majoring in English the opportunity to explore different forms of creative writing--fiction, poetry, and nonfiction--or to focus primarily on one of them. Students receive instruction and practice the art and craft of writing in small, workshop courses.

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

Some courses may require prerequisites.

For a Minor in Creative Writing, a minimum of 18 credits is required.

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

**REQUIREMENTS FOR THE MINOR:** 18 credits

**ADDITIONAL COURSES** (18 credits)

Select 6 credits of introductory-level courses (200-level): ENGL 212(3); ENGL 213(3); ENGL 214(3); ENGL 215(3); ENGL 281(3) (Sem: 1-4)

Select 12 credits of advanced -level writing workshop courses (400-level): ENGL 304 WAC(3-12); ENGL 412(3); ENGL 413(3); ENGL 414(3); ENGL 415(3); ENGL 422(3); ENGL 425(3); ENGL 401(3); ENGL 424(3); ENGL 429(3); ENGL 435(3); ENGL 436(3); ENGL 437(3); ENGL 439(3); ENGL 486 IL(3); ENGL 495(3-12) (Sem: 5-8)

Blue Sheet Item #: 45-05-041

Review Date: 2/21/17

## Criminal Justice Minor

Abington College (CJ) contact: Patricia Collins, [pxc36@psu.edu](mailto:pxc36@psu.edu)

Altoona College (CJ)

Penn State Beaver contact: Mari Pierce, [mbp16@psu.edu](mailto:mbp16@psu.edu)

Penn State Berks - Jennifer Murphy

Penn State Fayette (CJCC)

Penn State Harrisburg contact: Shaun Gabbidon, [slg13@psu.edu](mailto:slg13@psu.edu)

Penn State New Kensington contact: Jeffrey Roth, [jjr30@psu.edu](mailto:jjr30@psu.edu)

Penn State World Campus

The Criminal Justice minor provides an overview of the criminal justice system and a thorough grounding in criminological theory. Students receive an in-depth look at the three main system components: policing, courts, and corrections, as well as the opportunity to delve into two or more specialized topics relating to criminal justice. The minor is designed not only for students who have a professional interest in criminal justice, but also for those who want to be informed members of the voting citizenry. A functional

understanding of crime and the criminal justice system is useful in many careers, including law, social work, education, and journalism.

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

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

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES:** (12 credits)

CRIMJ 100(3) (Sem:1-4)

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

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

Select 6 credits of 400-level CRIMJ courses, excluding CRIMJ 495(1-18) (Sem: 7-8)

Last Revised by the Department: Fall Semester 2001

UCA Revision #2: 7/27/07

AL

## Homeland Security Minor (HLS)

*Penn State Harrisburg - Program Coordinator, Dr. Alexander Siedschlag  
Penn State World Campus*

The Homeland Security minor provides for development of familiarity with homeland security and defense issues, including emergency management, homeland security policy, and the structure of homeland security operations. Students will come to understand the "all hazards" approach to homeland security and defense. Students will be able to develop familiarity with such aspects of homeland security and defense as emergency management, security administration, border security, and critical infrastructure through taking elective courses. Recipients of the minor would be positioned to enter the work force in entry level positions or to prepare for transition to graduate school.

A grade of C or better is required in all courses for the minor. At least six credits must be at the 400 level.

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

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES:** (9 credits)

PUBPL 201(3) (Sem 2-5)

PLSC/CRIMJ 439(3), PUBPL 483(3) (Sem 5-8)

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

Select 9 credits from among the following: CRIMJ 304(3), CRIMJ 435(3), PUBPL 306(3), PUBPL 475(3) (Course substitution possible with permission of advisor) (Sem: 5-8)

Last Revised by the Department: Spring Semester 2011

Blue Sheet Item #: 39-06-041

Review Date: 04/12/2011

## Human Resource Management Minor

*Capital College, School of Business Administration (HRMGT)*

The Human Resource Management minor prepares students for professional certification (Assurance of Learning, Professionals in Human Resources (PHR) or Senior Professionals in Human Resources (SPHR)) and/or a career in human resource management by developing skills and competencies in managing diversity and equal opportunity, ethical and fair treatment of employees, human resource planning and staffing, employee training and development, compensation and benefits, performance management, labor relations, and protecting employee safety and health.



No more than 15 credits from the minor may be utilized to fulfill the Management major requirements.

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

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

**REQUIREMENTS FOR THE MINOR:** 20-22 credits

**PRESCRIBED COURSES** (9 credits)

Organizational Behavior and Structure (3 credits)

MGMT 301(3) (Sem: 1-2)

Basic and Advanced Human Resource Management (6 credits)

MGMT 341(3) (Sem: 5-6)

MGMT 440(3) (Sem: 6-8)

**ADDITIONAL COURSES** (2-4 credits)

Legal Environment (2-4 credits)

BA 241(2), BA 243(4), BLAW 243(3), BLAW 341(3), LER 201 GS(3) (Sem: 3-4)

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

Select 9 credits from the following list. At least 3 credits must be taken at the 400-level.

LER 424(3), LER 425(3), MGMT 321(3), MGMT 400(3), MGMT 402(3), MGMT 420(3), MGMT 424(3), MGMT 441(3), MGMT 443(3), MGMT 445 US(3), MGMT 450(3), MGMT 483(3) (Sem: 6-8)

Last Revised by the Department: Fall Semester 2013

Blue Sheet Item #: 42-02-020

Review Date: 10/08/2013

## Information Sciences and Technology for Accounting Minor

*Capital College (ISACC): Penn State Harrisburg*

Accounting remains a vital organizational function which, in today's business environment, impacts the strategic direction of the firm. Technology has changed the manner in which business organizations are supported by accounting. Thus, accounting professionals with technology skills and technology professionals with accounting skills are extremely valuable in today's modern organization. This new minor will provide students with this integration of knowledge in these two fields.

Students must apply for entrance to the minor no later than the beginning of their sixth semester.

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

**PRESCRIBED COURSES** (18 credits)

IST 110 GS(3), IST 210(3), IST 220(3) (Sem: 1-8)

ACCTG 403(3), ACCTG 432(3), ACCTG 471(3) (Sem. 5-8)

**ADDITIONAL COURSES** (3 credits)

Select 3 credits from ACCTG 310(3), ACCTG 340(3), ACCTG 472(3) (Sem. 6-8)

Last Revised by the Department: Fall Semester 2015

Blue Sheet Item #: 44-01-057

Review Date: 8/25/2015

UCA Revision #2: 7/27/07

CL

## 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

## Information Sciences and Technology/Finance Minor

*Capital College (ISFIN)*

The Information Sciences and Technology/Finance Minor is to enhance skills of students in the information sciences and finance. More organizations are integrating technology as part of their business operations, including finance. Finance is a key function of every business organization. Therefore, technology professionals with finance skills, and finance professionals with technology skills are highly valuable in any organization.

Students must apply for entrance to the minor no later than the beginning of their seventh semester.

A grade of C or better is required for all courses to successfully complete the minor.

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

**REQUIREMENTS FOR THE MINOR:** 21 credits

**PRESCRIBED COURSES** (18 credits)

IST 110 GS(3), IST 210(3), IST 220(3) (Sem: 1-8)

ECON 351(3), FIN 301(3), FIN 420(3) (Semester 5-8)

**ADDITIONAL COURSES** (3 credits)

Select 3 credits from FIN 302(3), FIN 406(3), FIN 407 (3), FIN 408(3), FIN 409(3), FIN 427(3), FIN 456 IL(3), FIN 496(3), FIN 497(3) (Semester 6-8)

Last Revised by the Department: Fall Semester 2015

Blue Sheet Item #: 44-01-048

Review Date: 8/25/15

UCA Revision #2: 7/27/07

CL

## International Business Administration Minor

*Capital College (IBADM)*

Contact: Jane Kochanov, [jxs121@psu.edu](mailto:jxs121@psu.edu)

This minor provides undergraduate students in all business administration majors with further studies in such areas as international accounting, finance, information systems, comparative management, international marketing, or economics. The objective of the minor is to provide students who are interested in careers in international business with an understanding of problems and problem-solving methods that transcend national boundaries. Proficiency in a foreign language and study abroad provide an understanding of the social, political, and cultural context of the global marketplace. Except for Accounting, the minor can be included in the major with no additional courses being required. Professional Accountancy students may have to take 12 additional credits.

Students must receive a grade of C or better in all courses required for the minor.

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

**REQUIREMENTS FOR THE MINOR:** 18-24 credits

(A minimum of 3 credits in the minor must be taken in an approved study abroad program.)

**PRESCRIBED COURSES** (3 credits)

BA 364 US;IL(3) (Sem. 7-8)

**SUPPORTING COURSES AND RELATED AREAS** (15-21 credits)

Select 3-12 credits in a single foreign language equivalent to the 12th credit level (Sem: 1-6)

Select 9-12 credits from ACCTG 461 IL(3), ECON 333 GS(3), FIN 407(3), FIN 456 IL(3) or IB 299 IL(3), MGMT 461 IL(3), MIS 446(3), MKTG 445 IL(3) (Sem: 5-8)

Last Revised by the Department: Spring Semester 2013

Blue Sheet Item #: 42-01-027

Review Date: 08/20/13

UCA Revision #1: 8/8/06

UCA Revision #2: 7/27/07

CL

## Materials Science and Engineering Minor

Contact: Penn State Harrisburg, Issam Abu-Mahfouz, [iaa2@psu.edu](mailto:iaa2@psu.edu)

The Minor in Materials Science and Engineering prepares students to understand the materials properties, materials processing techniques, characterization methods, and selection criteria in implementing engineering solutions. The materials selection for cutting edge mechanical design requires precise and definite knowledge of choice of materials, processing route, and mechanical response in service conditions. The materials engineer must have a sound expertise on modeling and experimental tools validating microstructural, mechanical, and electrical properties requirements for a specific design application. Hence, a wide variety of industries such as aerospace, automotive, energy, biomedical, and electronics to name a few, have a demand for engineers with a strong background in materials engineering. The MMSE covers introductory courses and laboratories on materials science in general, properties and processing of materials, materials thermodynamics and kinetics, and characterization of mechanical, microstructural and electrical properties of materials. The introductory courses and labs provide the basic foundation on materials science and engineering; the rest of the courses provide advanced knowledge on properties and selection, processing techniques, and characterization methods. Moreover, thermodynamics and kinetics of materials systems and process are also introduced. The above mentioned topics are covered by offering courses from sophomore through senior level.

The Minor in Materials Science and Engineering requires the completion of a total of 18 credits in materials related and other supporting courses. With the approval of the student's program chair, some of these courses may also be used to satisfy the requirements for the student's major bachelor's degree. At least 9

unique credits counted toward the requirements for a student's minor must not be used to fulfill the requirements for that student's major.

A grade of "C" or better in all the courses taken toward the minor is required.

Elective courses may be drawn from a wide variety of courses in Materials Science, Engineering, and Physics.

The Minor is open to any undergraduate who has: A minimum cumulative GPA of 3.0 or better and a minimum grade of "C" or better in the pre-requisite courses for the minor.

Completion of the minor may extend graduation date.

Transfer of credits from other institutions may be eligible to satisfy the minor requirements based on advisor review and program approval.

#### Graduation Requirements

To be given credit for the minor, undergraduate must:  
maintain a GPA of 3.0 in the minor courses

Complete 18 credits from the minor

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

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES** (8 credits)

MATSE 201(3), MATSE 259(3), MATSE 460(1) MATSE 462(1)

**ADDITIONAL COURSES** (10 credits)

ESC 314(3), MATSE 202(3), MATSE 400(3), MATSE 401(3), MATSE 402(3), MATSE 410(3), MATSE 413(3), MATSE/ESC 417(3), MATSE 419(3), MATSE 430(3), MATSE 436(3), MATSE 471(1), MATSE 472(1), MATSE 496(1-18), MATSE 497 (1-9), PHYS 414(3)

Last Revised by the Department: Spring Semester 2017

Blue Sheet Item #: 45-04-056A

Review Date: 1/10/17

## **Mechatronics Minor**

*Capital College, School of Science, Engineering and Technology (MCHTR)*

*Contact: Dr. Amit Banjerjee*

Mechatronics is an interdisciplinary engineering field that combines mechanical, electrical, electronics, control and computer engineering. The field deals with the design, development, control, and application of advanced electro-mechanical systems. Such systems will include sensors, actuators, microprocessors, controllers, software, computer, and mechanical hardware components. The purpose of the minor is to provide undergraduate students an opportunity to take relevant courses that will sequentially build on their knowledge and understanding of mechatronic systems and to provide recognition to those who do so.

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

**REQUIREMENTS FOR THE MINOR:** 19-22 credits

**PRESCRIBED COURSES** (4 credits)

EE 210(4) (Sem: 4-5)

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

Select 3 credits from: CMPSC 121(3), CMPSC 200(3), or CMPSC 201(3) (Sem 2-4)

Select 6-8 credits from the following:

(Students graduating with a M E major should take 7-8 credits from Group A; students graduating with an EE major should take 7 credits from group B; all other students should take 6-8 credits from both A and B.)

Group A:

CMPEN 270 (4) or CMPEN 271(3) and CMPEN 275(1) (Sem 3-4)

CMPEN 331(3) or EE 310(4) or EE 387(3) (Sem 5-6)

Group B:

ME 345(4) or ME 345W(4) (Sem 5-6)

ME 357(3) (Sem 5-6)

Select 6-7 credits from the following (one course each from Category I and II):

Category I:

CMPEH 472(4), CMPEN 472(3), EE 485(3), EE 487(3), ME 445(4) (Sem 5-8)

Category II:

EE 483(3), ME 455(3), ME 456(3) (Sem 5-8)

Last Revised by the Department: Fall Semester 2014

Blue Sheet Item #: 43-05-027

Review Date: 02/24/2015

## **Mechatronics Technology Minor**

*Capital College, School of Science, Engineering and Technology (MCHTC)*

*Contact: Dr. Amit Banjerjee*

Mechatronics is an interdisciplinary technical discipline that combines mechanical, electrical, electronics, control and computer engineering technology. The field deals with the design, development, control, and application of advanced electro-mechanical systems. Such systems will include sensors, actuators, microprocessors, controllers, software, computer, and mechanical hardware components. The purpose of the mechatronics technology minor is to provide undergraduate students an opportunity to take relevant courses that will sequentially build on their knowledge and understanding of mechatronic systems and to provide recognition to those who do so.

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

**REQUIREMENTS FOR THE MINOR:** 18-23 credits

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

EMCH 211(3) or ET 300(3) or MCHT 111(3) (Sem: 3-4)

EET 311(4) or EET 315(3) (Sem: 5-6)

**SUPPORTING COURSES AND RELATED AREAS** (12-16 credits)

Select 6-8 credits from the following:

(Students graduating with an MET major should take 8 credits from Group A; students graduating with an EET major should take 6-7 credits from Group B; all other students should take one course from each group, totaling 7-8 credits.)

Group A:

EE 310(4) or EET 212(4) (Sem: 5-6)

CMPEN 271(3) and CMPEN 275(1) or CMPET 117(3) and CMPET 120(1) (Sem: 5-6)

Group B:

EET 341(3) or EMET 330(3) or ME 345(4) or ME 345W(4) or MET 341(3)(Sem: 5-6)

EMCH 212(3) or ET 321(3) or MET 206(3) (Sem: 5-6)

Select 6-8 credits from the following (one course from category I and II):

Category I:

CMPEH 472(4) or EE 485(3) (Sem: 6-8)

Category II:

EET 433(4) or EET 440(3) or EMET 410(3) or MET 454(3) or MET 455(3) (Sem: 7-8)

Last Revised by the Department: Fall Semester 2014

Blue Sheet Item #: 43-05-028

Review Date: 02/24/2015

## Political Science Minor (PL SC)

Contact: Altoona College, Dan DiLeo, [dxd22@psu.edu](mailto:dxd22@psu.edu); Capital College, Steve Peterson, [sap12@psu.edu](mailto:sap12@psu.edu); Penn State Berks, Randy Newnham, [ren2@psu.edu](mailto:ren2@psu.edu); Penn State Fayette, Brad Whitsel, [bcw4@psu.edu](mailto:bcw4@psu.edu); College of the Liberal Arts, Suzanna Linn, [sld8@psu.edu](mailto:sld8@psu.edu)

The Political Science minor consists of 18 credits with at least one course in each of the following Political Science areas: American, theory/methodology, comparative, and international relations. Six (6) of these 18 credits must be at the 400 level.

When electing this minor, the student should have junior (fifth-semester) standing. Special attention should be given to the fact that courses used to satisfy general education, degree requirements, electives, and major requirements may also be used to satisfy minor requirements.

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

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

**REQUIREMENTS FOR THE MINOR:** 18 credits

**ADDITIONAL COURSES** (18 credits)

Select 18 credits in Political Science (at least 6 credits at the 400 level) (Sem: 3-8)

Include at least one course in each of the following areas: American, Comparative, International Relations, and Theory

Last Revised by the Department: Fall Semester 1999

Blue Sheet Item #: 28-01-056

Review Date: 11/10/03

LA

## Psychology Minor (PSY)

Contact: Abington College, Michael Bernstein, [mjb70@psu.edu](mailto:mjb70@psu.edu); Altoona College, Brad Pinter, [tbp1@psu.edu](mailto:tbp1@psu.edu); Capital College, Cobi Micahel, [cmk292@psu.edu](mailto:cmk292@psu.edu); Penn State Beaver, Kevin Bennett, [klb48@psu.edu](mailto:klb48@psu.edu); Penn State Berks, Erin Johnson, [eem139@psu.edu](mailto:eem139@psu.edu); Penn State Brandywine, Pauline Guerin, [pbq12@psu.edu](mailto:pbq12@psu.edu); Penn State Fayette, Russ Filburn, [frf1@psu.edu](mailto:frf1@psu.edu); Penn State Greater Allegheny, Eilizabeth Mazur, [exm32@psu.edu](mailto:exm32@psu.edu); Penn State Lehigh Valley, Kevin Kelley, [kjk13@psu.edu](mailto:kjk13@psu.edu); Penn State New Kensington, K. R. Bridges, [krb3@psu.edu](mailto:krb3@psu.edu); Penn State Schuylkill, Helen Hendy, [hl4@psu.edu](mailto:hl4@psu.edu); College of the Liberal Arts, Richard Carlson, [cvy@psu.edu](mailto:cvy@psu.edu)

The Psychology minor is designed to provide undergraduate students with a broad overview of topics and domains within psychology, knowledge and skills related to research methods in psychology, and deeper knowledge of research, theory, and application in one or two specific content domains. Students completing this minor will find a flexible selection of coursework in psychology. The content domains from which students may select courses include biological, clinical, cognitive, developmental, industrial-organizational, and social psychology. Students may choose courses that emphasize theory or application of psychological principles. A number of these courses examine the application of psychological research to societal issues.

The required research methods course, PSYCH 301, carries a statistics prerequisite that can be met by either PSYCH 200 or STAT 200. STAT 200 does not count toward the minimum 18 credits required for the minor. Students minoring in Psychology at University Park are encouraged to consult the Psychology Advising Center early in the process of planning their minor.

The Psychology minor may be appropriate for students pursuing graduate training or professional careers in fields such as health, business, education, and human services, as well as in psychology.

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

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

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES** (7 credits)

PSYCH 100 GS(3), PSYCH 301(4) (Sem: 1-4)

**ADDITIONAL COURSES** (11 credits)

Select 11 credits (at least 6 credits at the 400 level) in PSYCH (Sem: 5-8)

Last Revised by the Department: Fall Semester 2001

Review Date: 12/20/02

UCA Revision #1: 8/14/06

## Sociology Minor (SOC)

*Contact: Abington College, Michael Bernstein, [mjb70@psu.edu](mailto:mjb70@psu.edu); Altoona College, Karyn McKinney, [kdm12@psu.edu](mailto:kdm12@psu.edu); Behrend College, Nicole Shoenberger, [nas25@psu.edu](mailto:nas25@psu.edu); Capital College, Kenneth Cunningham, [kuc1@psu.edu](mailto:kuc1@psu.edu); Penn State Fayette, Russ Filburn, [frf1@psu.edu](mailto:frf1@psu.edu); Penn State Schuylkill, Salih Hakan Can, [shc11@psu.edu](mailto:shc11@psu.edu); College of the Liberal Arts, Sal Oropesa, [rso1@psu.edu](mailto:rso1@psu.edu)*

The sociology minor allows students to explore the wide range of topics, social groups, and social interactions studied by sociologists. From social inequalities and social problems to the familiar institutions of family, school, religion, and government, the diversity of courses available allows sociology minors to explore courses relevant to their interests. The courses also provide multiple viewpoints, studying the intimate interactions of families and small groups and the complex interactions of global economies and political alliances. Requiring a minimum of 18 credits in sociology, including Introductory Sociology (SOC 1) and two courses at the 400 level, students have flexibility in choosing a set of courses for their sociology minor.

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

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

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES** (3 credits)

SOC 1 GS(3) (Sem: 1-6)

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

Select 15 credits in sociology; at least 6 of those credits must be at the 400 level (Sem: 1-8)

Last Revised by the Department: Fall Semester 2001

Editorial: 3/23/07

## Writing Minor

*Capital College (WRTNG): Penn State Harrisburg  
Penn State Abington - contact: Liliana Naydan, [lmn122@psu.edu](mailto:lmn122@psu.edu)  
James Jaap, [jaj15@psu.edu](mailto:jaj15@psu.edu)*

Writing is valued as a mode of learning, as a means of expression, and as a skill highly desirable in the workplace. Personal development, interpersonal communication, and professional marketability may all be enhanced by the further study and practice of writing. For these reasons, the Writing minor offers students from virtually every discipline across the University an opportunity to learn more about a wide variety of writing: informative/persuasive, professional, and creative, while improving their own writing skills through hands-on writing experiences. In addition to offering students opportunities to study and practice different

types of writing, the minor affords students the opportunity to write for/in different media, producing both print and electronic texts.

For the Writing minor, a total of 18 credits is required. Students may not count courses used to satisfy General Education Writing/Speaking Skills.

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

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

**REQUIREMENTS FOR THE MINOR:** 18 credits

**PRESCRIBED COURSES:** 6 credits

ENGL 211(3) (Sem: 3-8)

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

**ADDITIONAL COURSES:** 6-12 credits

*At least 3 credits of Additional/Supporting courses must be taken at the 400 level.*

Select 6-12 credits from ENGL 50 GA(3), ENGL 209(1-6), ENGL 212(3), ENGL 213(3), ENGL 215(3), ENGL 412(3), ENGL 413(3), ENGL 414(3), ENGL 415(3), ENGL 416(3), ENGL 417(3), ENGL 418(3), ENGL 419(3), ENGL 421(3), ENGL 422(3), ENGL 423(3), ENGL 424(3), ENGL 425(3), ENGL 470(3), ENGL 471(3), ENGL 474(3) (Sem: 3-8)

**SUPPORTING COURSES:** 0-6 credits

Select 0-6 credits from a department-approved list (Sem: 5-8)

Last Revised by the Department: Spring Semester 2013

Blue Sheet Item #: 42-01-028

Review Date: 08/20/13

Program coordinator updated by Publications: 9/29/06

CL

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