NAVIGATING YOUR FUTURE
2018-2019 GUIDEBOOK FOR UNDERGRADUATE STUDENTS
GREETINGS, AND WELCOME TO THE
DEPARTMENT OF ACADEMIC ENGAGEMENT
& EXPLORATORY STUDIES

Students entering college are often unsure about their academic or career goals, and many are in want of information about their options. Whether you need assistance in identifying your personal skills, interests, and abilities, or you're interested in a major with either highly competitive admission standards or limited enrollments, Exploratory Studies is the right fit for you.

In these pages, you will find answers to many of the questions you may have about academic programs and a myriad of other topics such as:

- Important university policy information (page 11)
- General Education requirements (page 37)
- Explanations of placement testing and foreign language requirements (page 23)
- Placement Testing options and requirements (page 21)
- Information about Study Abroad (page 24)
- Requirements for declaring all majors offered here at SHIP (pages 34-36)
- Details of all programs of study, including registration tips, and prerequisites (begins page 54)

We wish you a very happy and successful year, and we know you will find Navigating Your Future: A Guidebook for Undergraduate Students informative and helpful.

Sincerely,

The Department of Academic Engagement
& Exploratory Studies (AEES)

Disclaimer: This guidebook may be subject to change. For the most recent version, please visit http://www.ship.edu/exploratory/.
ACADEMIC CALENDAR 2019-2020

**Fall Semester 2019**
- New faculty orientation: Mon - Tue, Aug 19-20
- Faculty meetings: Wed, Aug 21
- New students arrive: Thu, Aug 22
- Fall welcome week: Thu - Sun, Aug 22-25
- Regular class schedule begins: Mon, Aug 26
- Labor Day, University closed*: Mon, Sept 2
- Fall break begins, 4:00 p.m.: Fri, Oct 11
- Classes resume, 8:00 a.m.: Wed, Oct 16
- Thanksgiving break begins, 8:00 a.m.: Wed, Nov 27
- Classes resume, 8:00 a.m.: Mon, Dec 2
- Last day of classes: Fri, Dec 6
- Final exams: Mon - Fri, Dec 9-13
- Graduate Commencement: Fri, Dec 13
- Undergraduate Commencement: Sat, Dec 14

*The fall semester has one less Monday day/evening class—made up at the discretion of faculty.*

**Winter Term, 2019-2020**
- Session Opens: Mon, Dec 16
- Session Ends: Fri, Jan 17

**Spring Semester 2020**
- New students arrive: Fri, Jan 17
- New student orientation: Sat - Sun, Jan 17-19
- MLK Day, University Closed: Mon, Jan 20
- Regular class schedule begins: Tue, Jan 21
- Spring break begins, 4:00 p.m.: Fri, Mar 6
- Classes resume, 8:00 a.m.: Mon, Mar 16
- Last day of classes: Fri, May 1
- Final exams: Mon - Fri, May 4-8
- Graduate Commencement: Fri, May 8
- Undergraduate Commencement: Sat, May 9

*The spring semester has one less Monday day/evening class—made up at the discretion of faculty.*

*Inclement Weather Make-Up Days - Saturday, March 28 and April 4

**Summer Semester A 2020**
- Session opens: Mon, May 18
- Memorial Day, University Closed: Mon, May 25
- Special make-up for Memorial Day: Sat, May 30
- Session ends: Fri, Jun 26

**Summer Session B 2020**
- Session opens: Mon, Jun 29
- July 4th, University Closed: Fri, July 3
- Special make-up day for July: Sat, July 11
- Session ends: Fri, Aug 7

Web version available [here.](#)
TABLE OF CONTENTS

Academic Policies & Procedures .......................................................................................................................... 11
FAQ........................................................................................................................................................................................................ 15
General Information.................................................................................................................................................. 19
  Understanding Placement Testing ...................................................................................................................... 21
  Foreign Language Requirements...................................................................................................................... 23
  Study Abroad .................................................................................................................................................. 24
  Turning Academic Probation into Success ....................................................................................................... 25
  Minor Programs of Study................................................................................................................................... 26
  Requirements for Declaring a Minor ................................................................................................................ 27
Major Requirements for Declaring or Changing a Major .................................................................................. 31
  Major Programs of Study.................................................................................................................................. 33
  Requirements for Declaring a Major ................................................................................................................ 34
The General Education Program .......................................................................................................................... 37
  Undergraduate Degree Framework.................................................................................................................. 39
  Pre-Fall 2018 General Education Program ....................................................................................................... 40
  New General Education Program .................................................................................................................... 44
  Tips for Students .............................................................................................................................................. 49
College of Arts & Sciences ..................................................................................................................................... 51
  Program Requirements..................................................................................................................................... 54
John L. Grove College of Business .......................................................................................................................... 104
  Suggested Program for B.S.B.A. Students.......................................................................................................... 107
  Flow Chart of B.S.B.A. Core Courses ............................................................................................................... 108
  Program Requirements.................................................................................................................................... 109
College of Education & Human Services ............................................................................................................ 119
  For Students Interested in Teaching PK-4 or 4-8 ............................................................................................ 122
  For Students Interested in Teaching Secondary Education .............................................................................. 124
  Program Requirements...................................................................................................................................... 125
Appendix .................................................................................................................................................................. 139
  References ........................................................................................................................................................ 141
  Academic Affairs Directory .............................................................................................................................. 142
ACADEMIC ENGAGEMENT AND EXPLORATORY STUDIES (AEES) DEPARTMENT

Shippensburg University is a unionized environment which, through the collective bargaining process, has determined that advising is a faculty-driven responsibility and activity. As such, activities and advising duties are established by the departmental faculty and guided by national standards of best practice. The following outlines a dynamic narrative that represents the collective, professional voice of the Department of Academic Services faculty related to advising endeavors.

It is imperative that our actions are uniquely contributing to the access, success, and retention components of the students we serve. We believe advising impacts student success, both directly and indirectly; thus it is important for us to continually examine and document the advising process. Furthermore, we value a culture that appreciates and recognizes quality advising.

AEES PHILOSOPHY ON ADVISING
The Department of Academic Engagement and Exploratory Studies (AEES) believes that academic advisement is an exploratory partnership which is a transformational, interactive educational process designed to enhance intellectual growth and empower students to new levels of autonomy and achievement of individual goals. Advisors are expected to develop expertise in the informational, conceptual, and relational components of quality advising.

We value the varying needs of our students who come from various backgrounds and experiences. As a result, departmental advising is student-centered. Therefore, a “one size fits all” model of advising does not effectively or efficiently meet student needs.

AEES MISSION
Through effective instruction and innovative advisement, department faculty support student learning and personal development.

COURSE DESCRIPTIONS & OUTCOMES
AEES 101: Introduction to Higher Education (3 credits)
Course description
Provides an extended orientation to the academic expectations and demands of Higher Education. Introduction to Higher Education lead a systematic exploration of values, beliefs, and skills that assist in the becoming successful in academic endeavors. Students examine the factors which impact their learning, select relevant methods for deepening their learning and thinking processes, and develop self-regulation strategies for maximizing the effectiveness of their efforts. Skill development in learning strategies, reading, writing, and critical thinking are stressed.

Required Materials
• Academic Planner

Course Student Learning Outcomes and Objectives
1. Assist in students’ transition and adjustment to higher education.

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>As Evidenced By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify campus resources</td>
<td>SMART goal statement</td>
</tr>
<tr>
<td>Demonstrate ability to use electronic resources</td>
<td>Email, D2L, SSC in class activity, Word and PPT</td>
</tr>
<tr>
<td>Differentiate between high school/college academic expectations</td>
<td>Journal Reflection</td>
</tr>
<tr>
<td>Recognize components &amp; importance of advising process</td>
<td>Advisor assignment</td>
</tr>
<tr>
<td>Communicate and work with a faculty member</td>
<td>SSC appt. with faculty</td>
</tr>
<tr>
<td>Identify relevant academic policies &amp; procedures</td>
<td>Pre-post program assessment</td>
</tr>
</tbody>
</table>
2. Apply effective academic strategies to college-level coursework

<table>
<thead>
<tr>
<th>Learning Outcome:</th>
<th>As Evidenced By:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyze a syllabus</td>
<td>In class syllabus questionnaire</td>
</tr>
<tr>
<td>Plan a semester calendar</td>
<td>Submit semester calendar</td>
</tr>
<tr>
<td>Construct meaningful notes from a lecture</td>
<td>Submit notes from lecture</td>
</tr>
<tr>
<td>Demonstrate ability to read, mark, and take</td>
<td>Submit notes for text reading</td>
</tr>
<tr>
<td>notes from a text</td>
<td></td>
</tr>
<tr>
<td>Plan an exam study schedule</td>
<td>Create 5-day study plan</td>
</tr>
<tr>
<td>Demonstrate how to effectively evaluate</td>
<td>Use &amp; cite sources in document</td>
</tr>
<tr>
<td>information sources</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Learning Outcome:</th>
<th>As Evidenced By:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapt and apply appropriate academic</td>
<td>Summer course grades</td>
</tr>
<tr>
<td>strategies to courses</td>
<td></td>
</tr>
<tr>
<td>Identify and apply time management</td>
<td>Review planner weekly</td>
</tr>
<tr>
<td>strategies</td>
<td></td>
</tr>
<tr>
<td>Develop academic goals</td>
<td>SMART goal statement</td>
</tr>
<tr>
<td>Analyze quality of study in relation to</td>
<td>Review assignment with faculty</td>
</tr>
<tr>
<td>graded assignment</td>
<td></td>
</tr>
<tr>
<td>Assess areas of academic strength and</td>
<td>In-class assessment</td>
</tr>
<tr>
<td>areas needing growth</td>
<td></td>
</tr>
<tr>
<td>Practice critical thinking skills and</td>
<td>Common reading program</td>
</tr>
<tr>
<td>reading enhancement</td>
<td></td>
</tr>
</tbody>
</table>

AEES 102: Leadership and Community (3 credits)

Course description
A systematic exploration of the values, beliefs, and skills that assist in becoming successful in the communities to which one belongs and to society in general. Topics include leadership theory, community identification, career development, and service learning. Self-assessment, diversity, and character development are addressed as subtopics.

Course Student Learning Outcomes and Objectives
By the completion of AEES 102, you should be able to:

<table>
<thead>
<tr>
<th>Learning Objectives/Outcomes</th>
<th>As Evidenced By:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To enhance leadership awareness and skills and develop</td>
<td>Student learning about leadership and community identification through guided</td>
</tr>
<tr>
<td>team building behavior</td>
<td>journal writing</td>
</tr>
<tr>
<td></td>
<td>Content quizzes</td>
</tr>
<tr>
<td></td>
<td>Completion Student Leadership Practices Inventory</td>
</tr>
<tr>
<td>To increase community identification</td>
<td>Student identification in community will be enhanced through the creation and</td>
</tr>
<tr>
<td></td>
<td>implementation of a service project</td>
</tr>
<tr>
<td>Develop perspective relating to moral values, ethics,</td>
<td>Moderated group discussion examining leadership issues across business, law,</td>
</tr>
<tr>
<td>and character education</td>
<td>health, education, and government</td>
</tr>
<tr>
<td>To build communication and problem-solving skills</td>
<td>Mastery demonstration and presentation</td>
</tr>
</tbody>
</table>
AEES 103: Introduction to Exploratory Studies (2-3 credits)

Course description
This course engages you in transitioning to an appropriate major through active exploration of occupational and educational opportunities. By participating in experiential activities, you will practice critical thinking, improve your self-knowledge, and construct conceptual frameworks during the process of selecting a major. You will formally assess your personal characteristics, research possible major choices, and examine associated programs of study.

Course Textbook and Materials
• You Majored in What: Mapping Your Path from Chaos to Career by Katharine Brooks
• Charting Your Academic Course: 2018-2019 Guidebook For Undergraduate Students
• Ring binder and other materials to help you organize your course materials

Course Student Learning Outcomes and Objectives
By the completion of AEES 103, you should be able to:

<table>
<thead>
<tr>
<th>Learning Objectives/Outcomes</th>
<th>Assessment Method (formative and/or summative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify a major that fits your abilities, skills, and interests to help you achieve your academic and career goals</td>
<td>You will perform a Self-Assessment by clarifying the relationship between various occupations and personality type and work style, interests, career values and skills. You will complete a Career Assessment (MBTI, WOWi, FOCUS2, STRONG, etc.), and One-Year Action Plan. You will compile your work throughout the course via a Portfolio which is assessed by faculty using a common scoring guide/rubric. Portfolios may contain research papers, reports, case studies, video, personal essays, journals, self-evaluations, exercises, etc.</td>
</tr>
<tr>
<td>Develop and act upon a plan that leads to the declaration of a major.</td>
<td>Complete a SWOT analysis of the internal strengths &amp; weaknesses as well as the external threats &amp; opportunities of two SU majors relating to the results of their Self-Assessment.</td>
</tr>
<tr>
<td>Analyze how interests, skills, values, personality, and decision-making styles can lead to academic and career satisfaction and success.</td>
<td>Library and Information Literacy Strategy-Librarian assisted activity to locate scholarly research (journals, texts) to apply to a major/career themed research paper.</td>
</tr>
</tbody>
</table>
ACADEMIC POLICIES AND PROCEDURES

First Day Attendance
If you are unable to attend the first class session of a course in which you plan to remain enrolled, you must give notice of your intended absence to the instructor, academic department secretary, or academic dean's office of that course. Failure to provide such notification may result in your name being removed from the roster by the instructor and your place in that class being given to another student. If you do not attend the first day of class, you cannot assume, however, that you have been dropped from this class. It is your responsibility to verify your enrollment status by checking your schedule on your myShip portal.

Credits in the First Year
The normal semester hour workload varies between 15 and 18 credit hours. Students with less than 12 credit hours are classified as part-time. To take more than 17 credit hours in a semester, you must have approval of your academic dean. If you schedule 19 or more credits, you must pay an additional per credit fee (see Student Accounts for more information). Freshmen may not take more than 17 credit hours during their first semester.

Developmental Courses
Developmental courses provide opportunities for students to develop academic proficiencies necessary for college success. A grade of C or better is required in developmental-level courses; students earning a D or F will need to repeat the course in the following semester. Developmental courses are included in determining a student's class standing, and the grades are computed in the student's quality grade point average; however, they do not meet the general education program requirements and do not count toward the 120 credit hours required for graduation. The following courses are considered developmental:

- Developmental Mathematics (MAT 050)
- Developmental Reading & Study Skills (RDG050)

Transfer Courses
If a transfer student is admitted, the Dean of the appropriate college will evaluate the student's transcript to determine the amount of transferable credits. In general, a grade of C or better is required for transfer credit to be accepted. The transfer credit will appear on the student's transcript with a grade of TR and will not be used in calculating QPA.

For admitted students who wish to take courses at another college or university for transfer back to Shippensburg University, it is advised they refer to the course equivalency page. Transfer credit will not be awarded to replace a D or F grade earned at Shippensburg University. For additional information, please contact your advisor.

Withdrawal from a Class
Courses may be added or dropped without penalty or record notation during the official schedule adjustment period. The drop/add period extends to the eighth calendar day in a typical semester, excluding holidays, to adjust schedules. Dates for this schedule adjustment period will be announced by the Registrar's Office.

You may withdraw from a class through the tenth week of the semester subject to the restrictions listed here. Requests for withdrawals may be initiated through myShip during the spring and fall semesters by full-time undergraduate students who have attended the university at least one spring or fall semester previously and who have not applied for graduation. All other requests for withdrawals must be initiated through your advisor. Following the initial schedule adjustment period, any courses from which you withdraw will remain on your academic record and will be assigned a grade of W. Please note that once a student withdraws from a class, the class cannot be re-added to the student’s schedule.

You should carefully consider the ramifications before you withdraw from a course. If withdrawing from a course causes you to drop below 12 credit hours for the semester, you will be considered a part-time student, which may jeopardize financial aid, athletic eligibility, health insurance, and residence hall status. You should consult with your academic advisor, athletic coach and/or the Financial Aid Office before you withdraw from any course.

Should you withdraw from any course, it is your responsibility to do so officially, whether or not you have ever attended that class. If you do not attend and do not withdraw, your name will remain on the class roll until the final grading period and you will receive a grade of F for the course.

Registering for Classes
Current students may register for classes at the university during the registration period held each semester for the next semester or during official schedule adjustment periods. You must meet with your advisor to obtain your PIN. New students (freshmen and transfers) will be assigned a schedule prior to the beginning of their first term.
Minimum Academic Standards

Students admitted to the university are expected to maintain satisfactory academic standing, which requires a cumulative quality point average (QPA) of 2.0 (C) or better in their total program of courses and minimum 2.0 in the course work of their major areas of specialization.

Students who do not meet the required quality point average may be granted one probationary semester in which to raise their average. Students who show academic progress, i.e., greater than a 2.0 semester QPA, may be continued on academic probation.

Repeating Classes

Students may avail themselves of the repeat/grade replacement option a total of six times. Grade replacement of a repeated course is not limited to courses in which D and F grades were originally earned. However, the most recent grade of the course will be used in the QPA calculation, regardless of whether that grade is higher or lower. If you repeat a passed course and fail, you will lose both the quality points and the credits you had previously earned.

A single course repeat for grade improvement will be limited to two times. The six repeats may include repeating six courses one time each, repeating three single courses two times each, or any combination which adds up to six instances where a single course is not repeated more than two times. After the sixth repeat instance, any additional course repeats will include both the previous and new grade in the QPA calculation.

Prior to any student athlete and/or any student with financial aid utilizing the repeat option, the student should ensure it will not jeopardize their status as a student athlete or their ability to receive financial aid.

A previously failed course may not be repeated through an online course.

A D or F grade earned at Shippensburg University may not be made up or replaced by credits earned at another institution of higher learning for the same course.

For more information on Academic Policies and Procedures, refer to the [undergraduate catalogue](#).
FREQUENTLY ASKED QUESTIONS
QUICK ANSWERS TO COMMON QUESTIONS

What if I take fewer than 12 credits?
The normal semester hour workload varies between 15 and 18 credit hours. Students with less than 12 credit hours are classified as part-time. It is extremely important when earning less than 12 credits you consult with the Financial Aid Office and Athletic Department regarding your eligibility.

What if I become ill and cannot complete the semester’s coursework?
You may be allowed to withdraw from all your classes with grades of W if you provide your academic dean with clear medical evidence you are unable to continue your coursework. It will be the determination of the dean whether this evidence is substantial enough to merit a medical withdrawal. Notification of a medical withdrawal must be received by the academic dean prior to the end of the current semester. Medical withdrawals are not permitted after the semester ends. If you receive a medical withdrawal, you will be eligible for a refund only if your withdrawal occurs within the time period normally allowed for refunds.

Students may also request the grade of an I (incomplete) if they have successfully completed a majority of the work for the course. Being awarded an I is a privilege not a right of the student and the decision to grant an incomplete grade rests solely with the course instructor.

Is class attendance mandatory?
At Shippensburg University, your participation in class is viewed as essential to the teaching/learning process. Therefore, it is expected you will miss classes infrequently and only for good reason.

Each instructor will state the course requirements including attendance expectations as part of the clearly written course information distributed at the beginning of each semester. An instructor must make provision for excused absences. However, if you elect to be absent from a class without being excused, you may not be provided a makeup opportunity for any graded activity that takes place at that session.

What if I am late for class?
Sometimes circumstances will prevent a student from attending class on time, but being habitually late to class is both rude and inconsiderate. Some professors deduct points for lateness or lock the classroom door to prevent you from interrupting.

What grade point average will place me on academic probation?
To remain in good academic standing, a student must maintain a minimum cumulative grade point average of 2.0 (“C”). Anything less will result in probation.

Can I take courses at another university to improve my grade point average?
Transfer credits will appear on the student’s transcript with a grade of TR and will not be used to calculate QPA.

If I earn a “D” or an “F” grade in a course at Shippensburg University, can I repeat it at another university?
If a student has earned a D or F grade in a course at Shippensburg University and wishes to earn a higher grade, the course must be repeated at Shippensburg University.

Should I always repeat courses when I have earned “D” or “F” grades?
Students may be required to repeat a course in which they’ve earned a D or F grade if the course is developmental or if it counts toward the student’s major requirements. Otherwise, it is recommended that students who want to improve their grade point average repeat a course in which they’ve earned a D or F as soon as possible. Shippensburg University’s policy allows a student to repeat (and replace) six grades with the newer grade; however, after this option is used six times, any subsequent repeats will include both grades in the grade point average. Check with Financial Aid and/or your advisor before repeating courses.

Will I receive any recognition for outstanding academic performance?
A dean’s list is published at the end of each semester to recognize students who earn at least a 3.5 or better. In addition, students who consistently perform at the highest levels are given special recognition at the end of each academic year.

How much time should I devote to studying?
It is important for first-year students to learn early in their collegiate career that efficient time budgeting requires painstaking systematic planning. The resulting time schedule must be both realistic and practical; that is, it must be sufficiently flexible to handle changing requirements and be adequately balanced between academic work and recreation. Studies show that college students who are taking five (5) courses should study at least 30 hours a week outside of the classroom in order to be academically successful.
Where should I go for academic advice?
Every Exploratory Studies student will be assigned an advisor from the Department of Academic Engagement and Exploratory Studies. Students who do not know their assigned advisor should access their myShip portal or contact their department.

When are Exploratory Studies students required to declare a major?
Exploratory Studies students are advised to declare no later than their third semester.

What steps must I follow to declare a major?
Declaring a major is a simple process. You should follow these steps:
1. Make sure you are in good academic standing. In all cases, students need a minimum cumulative GPA of at least a 2.0.
2. Talk to your advisor about your plans.
3. Verify requirements for the major with your advisor.
4. Certain majors have higher GPA standards. Some departments conduct pre-screenings. They may also require student submit additional forms and complete certain courses before they are considered and accepted as majors.

Please note certain majors only accept students by certain deadlines in the semester.

What is a minor?
An academic minor is a structured group of courses that can enhance your educational experience. It usually consists of 18–26 credits from one or more disciplines outside the student’s major. It is possible to have more than one minor, but only six credits from one minor may count toward the fulfillment of another. Shippensburg University offers over 30 different minors. Students should consult the catalog for details and consult with their advisor about declaring a minor.

Am I eligible for the Satisfactory/Unsatisfactory option?
If you have completed at least one academic year (30 semester hours) at Shippensburg University and are maintaining a cumulative QPA of 2.5 or better, you may schedule up to a maximum of three credits (or one four credit course) per semester under the satisfactory-un satisfactory option. Transfer students with more than 30 semester hours accepted in transfer may adopt the satisfactory-un satisfactory option for their first semester at Shippensburg. You may adopt or rescind the satisfactory-unsatisfactory option during the first two weeks of the regular fall or spring semester. No changes may be made after the deadline. Only full-time students are eligible.

The maximum number of credits you may schedule under the satisfactory-unsatisfactory option while attending Shippensburg University will not exceed ten. Only courses taken outside your major and/or minor field may be scheduled on the satisfactory-unsatisfactory basis.

Grades received from courses taken on the satisfactory-unsatisfactory basis will not be used in determining the cumulative quality point average. If you receive a grade of S, the credits earned will be recorded toward graduation requirements; however, no credit will be earned if a grade of U is assigned.

You may not schedule more than one course on a satisfactory-unsatisfactory basis in a given department or in a required sequence of course offerings within a major. The five required courses for the General Education Program (UNIV 101, HIS 105, ENG 114, COM 112, college-level math) may not be taken on a satisfactory-unsatisfactory basis.

Are foreign language courses required?
Students enrolling in BA degree programs at Shippensburg University must meet a language requirement for graduation. Students who have successfully completed three years or more of any one foreign language in high school have met the language requirement. The requirement can also be met through AP testing, CLEP or the university placement test combined with the department oral test. Students with no previous knowledge of a foreign language must begin with the introductory level and complete three courses in that language. All others will take the university placement test.

For more information, see page 23.
UNDERSTANDING PLACEMENT TESTING

Shipensburg University’s General Education Program requires students to take various courses to develop certain skills and competencies. The mission of Placement Testing at The Shippensburg University Testing Center is to determine whether or not students are adequately prepared to succeed in their General Education courses. The Testing Center determines level of proficiency by testing Math and Writing (English).

They also provide an optional Reading test for students who are required to take Developmental Reading & Study Skills (RDG 050) and wish to challenge their placement in that course.

Registering for Placement Tests

To register for placement testing, new students should check their myShip portal and/or visit apply.ship.edu/portal/placement. Transfer students will receive an email if required to complete testing.

Reading Placement Testing

Reading Testing: If the SAT was taken prior to 2016, placement testing will be required. Students with an SAT reading sub-score ≤23 (SAT taken AFTER March 2016) or ACT Verbal Section ≤19 are automatically placed into RDG 050: Developmental Reading & Study Skills. Developmental Reading & Study Skills does count toward graduation; however, these credits are included in determining a student’s class standing and in calculating GPA. There are several options for students who place into developmental math:

- Independently work through an online review system to prepare for a waiver exam to improve their placement level by a maximum of two levels. Students interested in this option should email testing@ship.edu (from their SU email account) requesting to be enrolled in the “Waiver Exam.”
- Take Developmental Mathematics (MAT 050) during the regular academic year at SU.
- Satisfy the requirement via coursework at their local community college. A list of equivalent courses available at other colleges is available at http://www.ship.edu/testing/.

Developmental Reading: There are several options for students who place into Developmental Reading:

- Take the Townsend Press Reading Challenge Test at the Testing Center. If a student takes and passes the Townsend Press Reading Challenge Test, they will no longer be required to take the RDG 050 course. To pass the Townsend College Preparatory Reading Test, students must score an 80 or above.
- Take Developmental Reading (RDG 050) during the regular academic year at SU.
- Satisfy the Developmental Reading requirement via coursework at a local community college. A list of equivalent courses available at other colleges is available at http://www.ship.edu/testing/.

Math Placement Testing

Math Testing: A Math Placement Test is required for first-year students whose ACT-M is ≤21 or whose SAT-M is ≤550. A Math Placement level of 0 is also an indication the student must complete math placement testing. Students with Math SAT scores >550 are not required to take the Math Placement Test. Students in STEM, business, and middle-level education are encouraged to complete Optional Math Testing to advance their level. Math placement scores can fall into one of six categories (see next page for details).

Developmental Math: Students who test into Level 1 (and some who test into Level 2) are required to pass a Developmental Math course and earn a grade of “C” or higher before they can take a college level math course. Developmental Math does not count toward graduation; however, these credits are included in determining a student’s class standing and in calculating GPA. There are several options for students who place into developmental math:

English Placement Testing

English Testing: The English (Writing) Placement Test is required for first-year students whose English SAT sub-score is ≤25 or whose ACT-English Sections are ≤18. Based on writing placement test scores, students will enroll in one of two courses: ENG 113 or ENG 114 (see below).

<table>
<thead>
<tr>
<th>Minimum Placement Score</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ENG 113: Intro to Academic Writing</td>
</tr>
<tr>
<td>2</td>
<td>ENG 114: Academic Writing</td>
</tr>
</tbody>
</table>

*Students who score at a level 5 may have the option to take ENG 115: Advanced Placement Writing.

For more information about placement testing, visit http://www.ship.edu/testing/.
# MATH PLACEMENT LEVELS

<table>
<thead>
<tr>
<th>Placement Level</th>
<th>STEM majors</th>
<th>Business majors</th>
<th>Other majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MAT050&lt;sup&gt;1&lt;/sup&gt; Developmental Math</td>
<td>MAT050&lt;sup&gt;1&lt;/sup&gt; Developmental Math</td>
<td>MAT050&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>2</td>
<td>MAT140A&lt;sup&gt;2&lt;/sup&gt; College Algebra</td>
<td>MAT140A&lt;sup&gt;2&lt;/sup&gt; College Algebra</td>
<td>MAT105 Math for Liberal Studies</td>
</tr>
<tr>
<td>3</td>
<td>MAT140B College Algebra</td>
<td>MAT140B College Algebra</td>
<td>MAT107 Math Models Applied to Money</td>
</tr>
<tr>
<td>4</td>
<td>MAT175 Precalculus</td>
<td>MAT181&lt;sup&gt;4&lt;/sup&gt; Fundamentals I</td>
<td>MAT110&lt;sup&gt;4&lt;/sup&gt; Fundamentals I</td>
</tr>
<tr>
<td>5</td>
<td>MAT211&lt;sup&gt;5&lt;/sup&gt; Calculus I</td>
<td></td>
<td>MAT117&lt;sup&gt;5&lt;/sup&gt; Applied Statistics</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+ other Math courses as required + other Math courses as required

### Notes:

1. MAT050 credits count towards full-time status and GPA but not towards graduation.
2. MAT140A is a slower-paced (4-credit) version of MAT140B. Students who pass MAT050 must take MAT140A, not MAT140B. Students should only take one of MAT140A and MAT140B, not both.
3. A “STEM major” is any major that requires MAT211 Calculus I. These include Applied Physics, Biology, Chemistry, Civil Engineering, Computer Engineering, Computer Science, Earth and Space Science, Electrical Engineering, Geoenvironmental Studies, Mathematics, Mechanical Engineering, Physics, and Software Engineering. Elementary/Middle Level Education with a math concentration and Economics majors with a math concentration are also in this category.
4. MAT110 Fundamentals of Mathematics I is only available to Education majors.
5. Quantitatively-minded students in majors that require MAT117 Applied Statistics and who place at level 5 or higher may be encouraged to consider MAT217 Statistics I instead.
6. Economics majors (non-Mathematics concentration) are also in this category.
FOREIGN LANGUAGE REQUIREMENTS FOR
B.A. DEGREE PROGRAMS

Students enrolling in BA degree programs at Shippensburg University must meet competency requirements in one foreign language before graduation.

Students who have successfully completed three years or more of any one foreign language in high school have met the language requirement. The requirement can also be met through AP testing, CLEP, or the university placement test combined with the department oral test.

Students with no previous knowledge of a foreign language must begin with the introductory level (101) and complete three courses in that language. All others will take the university placement test. French, German, and Spanish 101/102/103 will complete the requirement sequence based on placement.

Students with three or more years of a language who want to take the same language as a General Education course or as a free elective, will be placed at the 103 or 200 level, according to their test results and the number of years they’ve studied the language in high school.

<table>
<thead>
<tr>
<th>Years of Same Language Taken in High School</th>
<th>Appropriate College Level (All Languages)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>101</td>
</tr>
<tr>
<td>1</td>
<td>102</td>
</tr>
<tr>
<td>2</td>
<td>103</td>
</tr>
<tr>
<td>3 or more</td>
<td>BA Requirement satisfied or 200/204 as Category B or Interconnections Course.</td>
</tr>
</tbody>
</table>

If you have questions, please contact the Department of Global Languages & Cultures at jgrica@ship.edu.
One of the advantages of attending Shippensburg University is the ease with which you can study abroad. New friends and experiences await you in Australia, England, France, Ireland, South Korea, Spain, New Zealand, and elsewhere across the world.

Why plan now to study abroad?
Some advance planning is necessary in terms of courses you take here and courses you reserve for studying abroad. General Education courses work really well abroad. A very good reason to study in countries such as Italy, Sweden, or Korea is so that you can take courses unique to that region. Many courses in your major may be taken abroad as well. Language students find it is essential for them to study their language in the native region.

What are the requirements?
You need a minimum 2.5 GPA, although many institutions have requirements beyond this. SU also requires students to earn 30 SU credits before going abroad and to be in good standing at the university. All schools and programs require that you complete one year of college before going abroad. You can apply after your first semester, but you must finish one year here before you can travel abroad. Transfer students are advised on an individual basis.

When do students study abroad?
Study abroad used to mean one semester during your junior year of college. Today, students can choose a time frame that works with their college career. Semester long programs are most popular, but some students select an academic year (actually 8 months or so) because they find one semester is not enough. Spending two semesters abroad enables you to reap all the benefits of the program. It also gives you more time to travel and to make friends. For those unable to spend a semester or a year abroad, summer and winter break programs are also available. These programs can last for 3, 6 or even 9 weeks.

Where will I live?
Housing options vary by location, but will be worked out prior to your departure. In some locations, students reside in university apartments or guesthouses. These accommodations typically provide single bedrooms within a shared apartment that includes a kitchen, bathroom and living room. In other locations, students reside with host families that are pre-screened by the program overseas. In most locations, meal plans are not purchased but students will rather purchase groceries and cook for themselves or if residing with a family, the family provides 2-3 meals daily.

How much will it cost?
The cost of studying abroad varies depending upon location. There are also exchange programs for particular majors, where you pay tuition here and study elsewhere. Special scholarships are available for those who qualify, and nearly all financial aid can be applied to studying abroad. It is open to all majors, credit transfer is guaranteed in advance, and it will not delay your graduation if you plan accordingly.

What are the benefits of study abroad?
Studying abroad allows you to do many things. You are able to take classes towards your degree while experiencing a new culture and in some cases, exposure to a new language. While overseas, you can travel during your free time and take advantage of local cuisine, festivals and highlights in the city in which you reside. Employers are also impressed with students who study abroad because it shows you are adaptable, globally minded and not afraid to step outside of your comfort zone.

How do I get started?
Please call 717-477-1279 or stop by the International Programs Office in the Student Success Center, Mowery Hall Rooms 212-210 and schedule an appointment. Information is also online at www.ship.edu/international.
TURNING ACADEMIC PROBATION INTO SUCCESS

Students who earn less than a 2.0 (“C”) cumulative GPA are placed on academic probation. Many faculty who work with students on academic probation find that those who are later dismissed for poor academic performance have often made some common mistakes. If you find yourself on academic probation, you will be less likely to face dismissal and more likely to increase your GPA by engaging in the following proactive behaviors:

Repeat courses in which you earn “F” grades.
Students try to put off repeating “F” grade courses until the summer session. Unfortunately, if your grades are poor in the second semester, the opportunity to register for summer classes may not be available. Your best course of action is to repeat “F” grade courses as soon as possible. Remember you may only repeat these at Ship.

Follow the advice of your advisor - not a friend.
Friends may have good intentions, but they sometimes mis-advice their peers about courses that are easy and appropriate for some, but difficult and inappropriate for others. Thus, you should place only limited faith in course selections suggested by friends. Your academic advisor or a departmental faculty member is a far better resource.

Seek academic or personal help early in the semester.
Some students try to succeed on their own and seek help only when the situation becomes particularly grim. This is not the time to be self-reliant; instead, please know there is help available on campus. Using supportive services is expected and encouraged as part of the total academic experience.

Consider your course load.
Students on academic probation sometimes benefit from taking fewer credits. After discussing with your advisor, consider taking just 12 credits in your first semester on academic probation. So you stay on track for graduation within four years, remember you can make up the missed credits during winter or summer terms.

Withdraw from courses within the appropriate time frame.
Students cannot withdraw from courses past the established deadline. Except for medical emergencies, the last day to drop a course with a “W” occurs during the tenth week of the semester. The deadline is always advertised widely on campus each semester through the deans’ and department offices, as well as on the Ship website. If absolutely neces-

Go to class!
Some students miss classes frequently because they think they have more important things to do. But the more you miss class, the more intimidating you will find class becomes. It’s a self-defeating cycle that results in poor grades and often, academic dismissal. Good students rarely miss class and, if you are on academic probation, you cannot afford to miss any class time.

Fully participate in AIM.
The Academic Improvement Plan (AIM) assists students on academic probation in developing strategies and skills that will help them to improve their cumulative grade point average. Learning specialists guide students in the AIM program to help them experience success in college. This structured program is designed to give students skills in studying, self-management, emotional intelligence, and personal responsibility, all of which can help them to improve their academic standing and achieve success in their courses.

Visit the Learning Center
The Learning Center, located on the first floor of Mowrey Hall, is the university’s primary site for tutoring services and academic support. Within the center, students are able to select from an array of options that can help them improve their academic performance, writing proficiency, and learning abilities. Outside the center, students can peruse the Learning Center’s website to obtain information on tutoring options, view virtual workshops, find schedules for face-to-face workshops, access writing and study skills resources, and learn how to schedule an appointment with a tutor or a Learning Specialist.

Speak to a Librarian.
In addition to providing library instruction sessions in a wide range of courses, librarians are available at The Ezra Lehman Memorial Library at various times throughout the week for one-on-one consultations that will help you build on the skills you need to be successful at college-level research. Asking for help at the beginning of an assignment can save you time that might be required in redoing assignments and help you earn a better grade.

Adding a minor to your program of study is an excellent way to broaden your background and increase your employability. The following minors are offered at Shippensburg University. Consult your academic advisor, the corresponding email address below, or the undergraduate catalogue for more information.

<table>
<thead>
<tr>
<th>MINOR</th>
<th>CREDITS</th>
<th>LOCATION</th>
<th>CONTACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>18 credits</td>
<td>GRH 428</td>
<td><a href="mailto:bjdeni@ship.edu">bjdeni@ship.edu</a></td>
</tr>
<tr>
<td>Art and Design</td>
<td>21 credits</td>
<td>HAC 210</td>
<td><a href="mailto:art@ship.edu">art@ship.edu</a></td>
</tr>
<tr>
<td>Biochemistry</td>
<td>24-28 credits</td>
<td>FSC 327</td>
<td><a href="mailto:chem@ship.edu">chem@ship.edu</a></td>
</tr>
<tr>
<td>Biology</td>
<td>19 credits</td>
<td>FCS 142</td>
<td><a href="mailto:biology@ship.edu">biology@ship.edu</a></td>
</tr>
<tr>
<td>Business</td>
<td>18 credits</td>
<td>GRH 128</td>
<td><a href="mailto:business@ship.edu">business@ship.edu</a></td>
</tr>
<tr>
<td>Chemistry</td>
<td>23-27 credits</td>
<td>FSC 327</td>
<td><a href="mailto:chem@ship.edu">chem@ship.edu</a></td>
</tr>
<tr>
<td>Coaching</td>
<td>18 credits</td>
<td>HG 109</td>
<td><a href="mailto:exsci@ship.edu">exsci@ship.edu</a></td>
</tr>
<tr>
<td>Comm/Journalism</td>
<td>18 credits</td>
<td>RLH 108</td>
<td><a href="mailto:commjour@ship.edu">commjour@ship.edu</a></td>
</tr>
<tr>
<td>Computer Science</td>
<td>20-21 credits</td>
<td>MCT 156</td>
<td><a href="mailto:compsci@ship.edu">compsci@ship.edu</a></td>
</tr>
<tr>
<td>Creative Writing</td>
<td>18 credits</td>
<td>DHC 128</td>
<td><a href="mailto:slhorn@ship.edu">slhorn@ship.edu</a></td>
</tr>
<tr>
<td>Criminal Justice</td>
<td>18 credits</td>
<td>SPH 113</td>
<td><a href="mailto:crimjust@ship.edu">crimjust@ship.edu</a></td>
</tr>
<tr>
<td>Data Science</td>
<td>18-21 credits</td>
<td>MCT 250</td>
<td><a href="mailto:math@ship.edu">math@ship.edu</a></td>
</tr>
<tr>
<td>Disability Studies</td>
<td>18 credits</td>
<td>GRH 436</td>
<td><a href="mailto:accare@ship.edu">accare@ship.edu</a></td>
</tr>
<tr>
<td>Economics</td>
<td>18 credits</td>
<td>DHC 127</td>
<td><a href="mailto:economics@ship.edu">economics@ship.edu</a></td>
</tr>
<tr>
<td>English</td>
<td>18 credits</td>
<td>DHC 128</td>
<td><a href="mailto:english@ship.edu">english@ship.edu</a></td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>18 credits</td>
<td>GRH 224</td>
<td><a href="mailto:ent@ship.edu">ent@ship.edu</a></td>
</tr>
<tr>
<td>Ethnic Studies</td>
<td>18 credits</td>
<td>RLH 115</td>
<td><a href="mailto:ethnic@ship.edu">ethnic@ship.edu</a></td>
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<tr>
<td>Exercise Science</td>
<td>18 credits</td>
<td>HG 109</td>
<td><a href="mailto:exsci@ship.edu">exsci@ship.edu</a></td>
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<tr>
<td>French</td>
<td>18 credits</td>
<td>RLH 109</td>
<td><a href="mailto:jgrica@ship.edu">jgrica@ship.edu</a></td>
</tr>
<tr>
<td>French Cultural Studies</td>
<td>18 credits</td>
<td>RLH 109</td>
<td><a href="mailto:jgrica@ship.edu">jgrica@ship.edu</a></td>
</tr>
<tr>
<td>Geography/Earth Science</td>
<td>21 credits</td>
<td>SHR 104</td>
<td><a href="mailto:geog@ship.edu">geog@ship.edu</a></td>
</tr>
<tr>
<td>Geographic Information Systems</td>
<td>18 credits</td>
<td>SHR 104</td>
<td><a href="mailto:geog@ship.edu">geog@ship.edu</a></td>
</tr>
<tr>
<td>German Studies</td>
<td>18 credits</td>
<td>RLH 109</td>
<td><a href="mailto:jgrica@ship.edu">jgrica@ship.edu</a></td>
</tr>
<tr>
<td>Gerontology</td>
<td>18 credits</td>
<td>SPH 325</td>
<td><a href="mailto:dpbourassa@ship.edu">dpbourassa@ship.edu</a></td>
</tr>
<tr>
<td>History</td>
<td>18 credits</td>
<td>DHC 122</td>
<td><a href="mailto:history@ship.edu">history@ship.edu</a></td>
</tr>
<tr>
<td>Human Communication Studies</td>
<td>18 credits</td>
<td>DHC 112</td>
<td><a href="mailto:kalask@ship.edu">kalask@ship.edu</a></td>
</tr>
<tr>
<td>International Studies</td>
<td>21 credits</td>
<td>MOW 2019</td>
<td><a href="mailto:ism@ship.edu">ism@ship.edu</a></td>
</tr>
<tr>
<td>Mathematics</td>
<td>18-21 credits</td>
<td>MCT 250</td>
<td><a href="mailto:math@ship.edu">math@ship.edu</a></td>
</tr>
<tr>
<td>Military Science</td>
<td>18-12 credits</td>
<td>WRH 207</td>
<td><a href="mailto:rotc@ship.edu">rotc@ship.edu</a></td>
</tr>
<tr>
<td>Music</td>
<td>18 credits</td>
<td>PAC 220</td>
<td><a href="mailto:music@ship.edu">music@ship.edu</a></td>
</tr>
<tr>
<td>Philosophy</td>
<td>18 credits</td>
<td>DHC 122</td>
<td><a href="mailto:history@ship.edu">history@ship.edu</a></td>
</tr>
<tr>
<td>Physics</td>
<td>24-26 credits</td>
<td>FSC 215B</td>
<td><a href="mailto:physics@ship.edu">physics@ship.edu</a></td>
</tr>
<tr>
<td>Political Science</td>
<td>18 credits</td>
<td>GRH 424</td>
<td><a href="mailto:polisci@ship.edu">polisci@ship.edu</a></td>
</tr>
<tr>
<td>Psychology</td>
<td>18 credits</td>
<td>FSC 114</td>
<td><a href="mailto:psych@ship.edu">psych@ship.edu</a></td>
</tr>
<tr>
<td>Public Administration</td>
<td>18 credits</td>
<td>GRH 424</td>
<td><a href="mailto:polisci@ship.edu">polisci@ship.edu</a></td>
</tr>
<tr>
<td>Reading</td>
<td>18 credits</td>
<td>SH 214</td>
<td><a href="mailto:dlsurotchak@ship.edu">dlsurotchak@ship.edu</a></td>
</tr>
<tr>
<td>Sociology</td>
<td>18 credits</td>
<td>GRH 428</td>
<td><a href="mailto:socant@ship.edu">socant@ship.edu</a></td>
</tr>
<tr>
<td>Spanish</td>
<td>18 credits</td>
<td>RLH 109</td>
<td><a href="mailto:jgrica@ship.edu">jgrica@ship.edu</a></td>
</tr>
<tr>
<td>Sustainability</td>
<td>21 credits</td>
<td>SHR 104</td>
<td><a href="mailto:geog@ship.edu">geog@ship.edu</a></td>
</tr>
<tr>
<td>Technical/Professional Comm.</td>
<td>18 credits</td>
<td>DHC 007</td>
<td><a href="mailto:ctkung@ship.edu">ctkung@ship.edu</a></td>
</tr>
<tr>
<td>Theater</td>
<td>18 credits</td>
<td>PAC 220</td>
<td><a href="mailto:music@ship.edu">music@ship.edu</a></td>
</tr>
<tr>
<td>Women's and Gender Studies</td>
<td>18 credits</td>
<td>HH 125</td>
<td><a href="mailto:rjward@ship.edu">rjward@ship.edu</a></td>
</tr>
</tbody>
</table>
## Requirements for Declaring or Changing a Minor

<table>
<thead>
<tr>
<th>Minor</th>
<th>GPA/Credit Hours</th>
<th>Course Requirements/Advising Tips</th>
</tr>
</thead>
</table>
| **Anthropology**           | 2.0/18           | Required Courses - ANTI11, ANTI121, ANTI50 + 9 credits Anthropology electives  
**3 credits hours of an internship may be applied toward fulfillment of this minor**                                                                                                                                                               |
| **Art**                   | 2.0/21           | Required Courses - ART101, ART110, ART215, ART215, ART218, ART history elective + 6 credits any ART classes  
**ART215 - fall only, ART218 - spring only**                                                                                                                                                                                                       |
| **Biology**               | 2.0/19           | Required Courses - BIO162, BIO162 + 11 BIO credits - Elective are to be chosen from courses for Biology majors. At least 2-3 credit-hour courses must be at 300 level or above. Seminar, internship, and research may not be used for the minor.  
**Completion of BIO161 or 162 with “C” or higher to declare**                                                                                                                                                                                       |
| **Business**              | 2.0/18           | Required Courses - ACC200, FIN311, MGT305, MKT305 + 6 credits (2 courses) College of Business courses  
**ECO101, ECO102 or ECO113; MAT140A/B or MAT117 or SAT550 or higher**                                                                                                                                                                             |
| **Chemistry - Biochemistry** | 2.0/24-28       | Required Courses - CHM301, CHM420/421, CHM397 - CHM397 must be taken co-currently with CHM421  
**CHM121/125, CHM122/124, CHM221/223, CHM222/224 (Course with lab component) to declare**                                                                                                                                                      |
| **Chemistry - Chemistry** | 2.0/23-27       | Required Courses - 7 additional CHM courses at 300/400 level  
**CHM121/125, CHM122/124, CHM221/223, CHM222/224 (Course with lab component) to declare**                                                                                                                                                      |
| **Coaching**              | 2.0/18           | Required Courses – ESC244, ESC325, ESC340, ESC343, ESC400 + 1 course from the following ESC207, ESC213, ESC387, SOC275  
**ESC majors with a Coaching Minor need to take ESC235, ESC400 + 2 course electives**  
**Coaching minor w/ PAGE Cert – Power, Agility & Group Exercise (PAGE) certification requires 2 additional courses – ESC348, ESC387**  
**Double minor Coaching & ESC – in addition to the courses for the coaching minor above, 4 courses may be completed for a double major. ESC250, ESC352 & 2 courses from the following options, ESC336, ESC348, ESC350**                                                                 |
| **Communications/Journalism** | 2.3/18         | Required Courses – COM111, COM112, COM245, COM345 + 2 200-400 level courses with the approval of the CRJ faculty advisor  
**Transfer courses may not be counted toward minor requirements**                                                                                                                                                                                |
| **Computer Science**      | 2.0/20           | Required Courses – CSC110/106, CSC111, SWE200 + 2 electives CSC, CMPE or SWE at 300 level or higher                                                                                                                                                      |
| **Creative Writing**      | 2.0/18           | Coming Fall 2019                                                                                                                                                                                                                                          |
| **Criminal Justice**      | 2.5/18           | Required Courses – CRJ100, CRJ309 + choose 2 from CRJ211, CRJ221, CRJ241 + 2 CRJ elective 300/400 level  
**Declare within first 3-weeks of the semester**                                                                                                                                                                                                    |
<p>| <strong>Data Science Minor</strong>    | 2.0/18-21       | Required Courses – MAT317, MAT219, MAT319 + one of the following MAT217 or MAT375 or SCM200 + one of the following CSCI04 or CSCI110 or ENG110 or ENGL10 or MIS240 or SWE100 + 1 discipline specific Capstone research course from approved list |</p>
<table>
<thead>
<tr>
<th>Minor</th>
<th>GPA/Credit Hours</th>
<th>Course requirements/Advising tips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disability Studies</td>
<td>2.0/18</td>
<td>Required Courses – DS100, DS400 + 4 interdisciplinary electives from approved list</td>
</tr>
<tr>
<td>Economics</td>
<td>2.0/18</td>
<td>Required Courses – ECO101/102 OR ECO113 + 12-14 credits Economic electives</td>
</tr>
<tr>
<td>English</td>
<td>2.0/18</td>
<td>Required Courses – ENG107 + 5 additional ENG courses, 2 must be at 300/400 level</td>
</tr>
<tr>
<td>Ethnic Studies</td>
<td>2.0/18</td>
<td>Required Courses – ETH100, ETH101, ETH102 + 9 additional credits from approved list</td>
</tr>
<tr>
<td>Exercise Science</td>
<td>2.5/18</td>
<td>Required Courses – ESC244, ESC250, ESC343, ESC352 + 2 from the following ESC336, ESC34, ESC348, ESC350  <strong>Completion of BIO150, BIO238 or BIO350 &amp; PSY101 with &quot;C&quot; or higher to declare</strong>  <strong>Exercise science minor w/PAGE Cert – Power, Agility &amp; Group Exercise (PAGE) certification requires 2 additional courses – ESC348, ESC387</strong>  <strong>Double minor ESC &amp; Coaching – in addition to the courses for the ESC minor above, 4 courses may be completed for a double major. ESC352, ESC340, ESC400 + 1 courses from the following options ESC207, ESC213, ESC387, SOC275</strong></td>
</tr>
<tr>
<td>French</td>
<td>2.0/18</td>
<td>Required Courses – FRN202, FRN204, FRN211, FRN309 + two of the following FRN380, FRN392, FRN400, FRN411, FRN490</td>
</tr>
<tr>
<td>French Cultural Studies</td>
<td>2.0/18</td>
<td>Required Courses – FRN 202, FRN 204, FRN 392 + one French course from approved list + two interdisciplinary courses from approved list</td>
</tr>
<tr>
<td>Geography/Earth Science</td>
<td>2.0/18</td>
<td>Required Courses – GEO100, 200-300 Level Geo/Earth science course, 400 level geo/Earth Science Course + 12 credits ESS or GEO courses by advisement</td>
</tr>
<tr>
<td>Geography/Earth Science – GIS</td>
<td>2.0/18</td>
<td>Required Courses – GEO 202, GEO 363, GEO 420 + three courses from approved list</td>
</tr>
<tr>
<td>German Studies</td>
<td>2.0/18</td>
<td>Required Courses – GER150 or 151, GER203 or 204, GER309 or 320, GER312 or 313 + two additional 200-400 level electives courses</td>
</tr>
<tr>
<td>Gerontology</td>
<td>2.0/18</td>
<td>Required Courses – GRN100, GRN301 + 6 additional courses from approved interdisciplinary list</td>
</tr>
<tr>
<td>History</td>
<td>2.0/18</td>
<td>Required Courses – HIS105, HIS106, HIS201 OR 202 + 3 additional courses; 1 300-level European History, 1 300-level US History &amp; 1 300-level Africa/Asia/Latin American or Middle East course</td>
</tr>
<tr>
<td>Human Communications</td>
<td>2.0/18</td>
<td>Required Courses – HCS200, HCS210 + 4 additional courses from approved list</td>
</tr>
<tr>
<td>International Studies</td>
<td>2.0/21</td>
<td>Required Courses - INT200, INT300 + 2 of the following ANTI11, GEO101, HIS106, PLS141, MGT370 + 3 additional courses from approved list</td>
</tr>
<tr>
<td>Mathematics</td>
<td>2.0/18-22</td>
<td>Required Courses – 6 courses MAT211 or higher</td>
</tr>
<tr>
<td>Minor</td>
<td>GPA/Credit Hours</td>
<td>Course requirements/Advising tips</td>
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</tr>
<tr>
<td>Music</td>
<td>2.0/18</td>
<td>Required Courses – MUS140 MUS212, MUS320 + 3 additional classes at 300/400 level from approved list **MUS121 must be taken before declaring or within the first 2 semesters after declaring music minor</td>
</tr>
<tr>
<td>Philosophy</td>
<td>2.0/18</td>
<td>Required Courses – 2 of the following PHL248, PHL248, PHL340 + 4 additional courses, which include 1 at 200-level and 1 at 300-level</td>
</tr>
<tr>
<td>Physics</td>
<td>2.0/24-26</td>
<td>Required Courses – PHY221, PHY222, PHY301, PHY321, PHY331 **Please note math pre-requisites to these classes</td>
</tr>
<tr>
<td>Political Science</td>
<td>2.0/18</td>
<td>Required Courses – PLS100, PLS141, PLS300 + 3 additional courses from approved list</td>
</tr>
<tr>
<td>Psychology</td>
<td>2.0/18</td>
<td>Required Courses – 3 courses from the following PSY235, PSY240, PSY265, PSY270, PSY320, PSY323, PSY325, PSY330, PSY352, PSY355, PSY383 + 1-2 courses from the following PSY311, PSY335, PSY361, PSY432, PSY435, PSY475, PSY485 + 1-2 courses from the following PSY315, PSY350, PSY365, PSY410, PSY420, PSY447, PSY470 **For specific General education goal requirements, please see department.</td>
</tr>
<tr>
<td>Public Administration</td>
<td>2.0/18</td>
<td>Required Courses – PLS100, PLS271, PLS300 + 2 from the follow PLS231, PLS371, PLS372, PLS373, PLS374 + 1 public administration/political science course</td>
</tr>
<tr>
<td>Sociology</td>
<td>2.0/21</td>
<td>Required Courses – SOC101, SOC380 + any 4 elective Sociology courses from 200, 300 and 400 level offerings **At least 6 credits of this minor must be at 300-400 level</td>
</tr>
<tr>
<td>Spanish</td>
<td>2.0/18</td>
<td>Required Courses – SPN202, SPN204, SPN211, SPN312 + 2 additional Spanish Courses at the 300 &amp; 400 level</td>
</tr>
<tr>
<td>Teacher Education</td>
<td>3.0/11</td>
<td>Required Courses – RDG334, RDG330, RDG340, RDG345, RDG350 **Only education major (PK-4 Only) may apply</td>
</tr>
<tr>
<td>Technical/Professional Communications</td>
<td>2.0/18</td>
<td>Required Courses – 2 of the following CSC103, CSC110, MIS142, ENG238 (one from writing, one from computer science) + 4 additional courses from approved list **Upon completion of 12 credits toward this minor, students may apply for optional internship (up to 3 credits)</td>
</tr>
</tbody>
</table>
MAJOR REQUIREMENTS
# Shippensburg University Undergraduate Degree Programs

<table>
<thead>
<tr>
<th>College of Arts and Sciences</th>
<th>College of Business</th>
<th>College of Education &amp; Human Services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B.A.</strong></td>
<td><strong>B.S.B.A.</strong></td>
<td><strong>B.S.</strong></td>
</tr>
<tr>
<td>Art &amp; Design</td>
<td>Accounting</td>
<td>Criminal Justice</td>
</tr>
<tr>
<td>Education K-12</td>
<td>Entrepreneurship</td>
<td>Exercise Science</td>
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<tr>
<td>Communication Journalism</td>
<td>Finance</td>
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<td>Electronic Media</td>
<td>Personal Financial Planning</td>
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<td>Print Media</td>
<td>Management</td>
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<tr>
<td>Public Relations</td>
<td>Management</td>
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<tr>
<td>English #</td>
<td>Human Resource Management</td>
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<tr>
<td>Literary Studies</td>
<td>International Management</td>
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<tr>
<td>Writing</td>
<td>Management Information Systems</td>
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<tr>
<td>French #</td>
<td>Marketing</td>
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<tr>
<td>History #</td>
<td>Supply Chain Operations &amp; Management Logistics Management</td>
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<tr>
<td>Public History</td>
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<td>Human Communication</td>
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<td>Interdisciplinary Art</td>
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<td>International Studies</td>
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<td>Sociology</td>
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<tr>
<td>Spanish #</td>
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<tr>
<td># Secondary cert. available</td>
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<tr>
<td><strong>B.S.</strong></td>
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<tr>
<td>Applied Physics</td>
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<td>Clinical Sciences</td>
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<td>Ecology &amp; Environmental Bio</td>
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<td>Health Professions</td>
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<td>Chemistry</td>
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<td>Biochemistry</td>
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<td>Forensic Science</td>
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<td>Medical Sciences</td>
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<td>Pre-Pharmacy</td>
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<td>Civil Engineering</td>
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<td>Computer Engineering</td>
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<td>Computer Graphics</td>
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<td>Computer Science Applications</td>
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<td>Geography</td>
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<td>Geographic Information Systems</td>
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<td>Human Environmental Studies</td>
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<td>Sustainability</td>
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<tr>
<td># Secondary cert. available</td>
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| **B.S. Ed.**                |                     |                                      |
| Earth & Space Science       |                     |                                      |
| Geography *                 |                     |                                      |
| History *                   |                     |                                      |
| Physics                     |                     |                                      |
| * Comprehensive Social Studies |                 |                                      |
# Requirements for Declaring or Changing a Major

<table>
<thead>
<tr>
<th>Major</th>
<th>Required GPA</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Physics (Pre-engineering) B.S.</td>
<td>2.5</td>
<td><strong>Previous requirement to complete a portfolio before declaring has been suspended.</strong></td>
</tr>
<tr>
<td>Art B.A.</td>
<td>2.0</td>
<td><strong>Previous requirement to complete a portfolio before declaring has been suspended.</strong></td>
</tr>
<tr>
<td>Education (K-12)</td>
<td>3.0</td>
<td><strong>Previous requirement to complete a portfolio before declaring has been suspended.</strong></td>
</tr>
<tr>
<td>Biology B.S.</td>
<td>2.5</td>
<td>Admission to this major is competitive and selective. Students must have earned at least 15 credits and have grades of “C” or better in Principles of Biology I/II (BIO161/162) AND one of the following: Chemical Bonding OR successfully completed Pre-calculus or Calculus I with a “C” or better. <strong>Students who meet the admission guidelines must submit a change of major within the first three weeks of the semester.</strong></td>
</tr>
<tr>
<td>Biology/Biotechnology/Pre-Forensic Sci.</td>
<td>2.5</td>
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<tr>
<td>Biology/Clinical Sciences B.S.</td>
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<tr>
<td>Biology/Health Professions B.S.</td>
<td>2.8</td>
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<tr>
<td>Biology/Ecology and Environmental B.S.</td>
<td>2.5</td>
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</tr>
<tr>
<td>Biology B.S. Secondary Education Certification</td>
<td>3.0</td>
<td>Admission to this major is competitive and selective. Students must have earned at least 15 credits and have grades of “C” or better in Principles of Biology I/II (Biol 61/162) AND Chemical Bonding (CHM121) OR successfully completed Pre-calculus (MAT 175) or higher math. <strong>Students who meet the admission guidelines must submit a change of major within the first three weeks of the semester.</strong></td>
</tr>
<tr>
<td>Business B.S.B.A.</td>
<td>2.0</td>
<td>All Business programs require a grade of “C” or higher in ENG 114: Writing Intensive First Year Seminar. A grade of “C” or better in MAT140: College Algebra and/or MAT181: Applied Calculus is required. In addition, students must have a 2.0 cumulative grade point average in all of the 100/200 level business core courses they have completed. First-year students must wait until the second semester to declare a Business major. EXCEPTION: Those students testing at the advanced level in math on the placement test.</td>
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<tr>
<td>Accounting</td>
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<td>Entrepreneurship</td>
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<td>Personal Financial Planning</td>
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<td>Management</td>
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<tr>
<td>Human Resources Management</td>
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<td>Management Information Systems</td>
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<td>Marketing</td>
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<tr>
<td>Supply Chain Management</td>
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<tr>
<td>Logistics Management</td>
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<tr>
<td>Chemistry B.S.</td>
<td>2.0</td>
<td>CHM 121 is required. Prerequisites: MAT 175: Pre-Calculus or MAT 117: Statistics (either may be taken concurrently with CHM 121) or math placement at Level 5 and one year of high school chemistry or CHM 105 with a grade of “C” or better.</td>
</tr>
<tr>
<td>Biochemistry B.S.</td>
<td>2.0</td>
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<tr>
<td>Chemistry/Business B.S.</td>
<td>2.0</td>
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<tr>
<td>Chemistry/Pre-Pharmacy B.S.</td>
<td>2.8</td>
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<tr>
<td>Chemistry/Forensic Science B.S.</td>
<td>2.5</td>
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<tr>
<td>Chemistry B.S. Secondary Education Certification</td>
<td>3.0</td>
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</tr>
<tr>
<td>Civil Engineering</td>
<td>2.0</td>
<td>Students must be ready to start MAT211: Calculus upon declaring (Math level 6). Students who are not ready to start MAT211 are placed into the Computer Science &amp; Engineering General category <strong>Student must apply to this major in the first 3 week of each semester.</strong></td>
</tr>
<tr>
<td>Communication/Journalism B.A.</td>
<td>2.3</td>
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<tr>
<td>Electronic Media</td>
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<td>Print Media</td>
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<tr>
<td>Public Relations</td>
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<tr>
<td>Computer Engineering B.S.</td>
<td>2.0</td>
<td>Students must also have completed CSC 110 Computer Science I (4 cr) with a grade of “C” or better. Students pursuing this major should have strong math skills.</td>
</tr>
<tr>
<td>Major</td>
<td>Required GPA</td>
<td>Comments</td>
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<td>--------------------------------------------</td>
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<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Computer Science B.S.</td>
<td>2.0</td>
<td>Students must also have completed CSC 110 Computer Science I (4 cr) with a grade of “C” or better. Students pursuing this major should have strong math skills.</td>
</tr>
<tr>
<td>Computer Graphics Embedded Systems</td>
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<tr>
<td>Computer Science Concentration</td>
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<tr>
<td>Criminal Justice B.S.</td>
<td>2.6</td>
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</tr>
<tr>
<td>Earth Science/Secondary Ed B.S.Ed.</td>
<td>3.0</td>
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</tr>
<tr>
<td>Economics B.S.</td>
<td>2.0</td>
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</tr>
<tr>
<td>Electrical Engineering B.S.</td>
<td>2.0</td>
<td>This is an academically challenging major and requires a significant effort outside the classroom. Students pursuing this major should have strong math skills. Math Level 6 required to declare major.</td>
</tr>
<tr>
<td>English B.A.</td>
<td>2.0</td>
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<tr>
<td>English/Writing Emphasis B.A.</td>
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<tr>
<td>English B.A. Secondary Education Certification</td>
<td>3.0</td>
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</tbody>
</table>
| Exercise Science B.S.                      | 2.5          | Starting in the fall 2019, ESC will have two tracks (concentrations) –  
|                                            |              | Allied Health Pre-professional  
|                                            |              | Students transferring from another major or another university must meet the following criteria:  
|                                            |              | • Completion of at least 15 credits with a GPA of 2.50 or above  
|                                            |              | • Completion of BIO 161, BIO 162, or BIO 237 (or their equivalents) with a grade of C or higher  
|                                            |              | Human Performance and Fitness concentration  
|                                            |              | Students transferring from another major or another university must meet the following criteria:  
|                                            |              | • Completion of at least 15 credits with a GPA of 2.0 or above  
|                                            |              | • Completion of a science course (Biology, Chemistry, or Physics) with a grade of C or higher  
<p>|                                            |              | • The science options would be: CHM 103, CHM 105, CHM 121/125, PHY 110 or PHY 121/123, or BIO 237.  |
| French B.A.                                | 2.0          |                                                                          |
| French B.A. Secondary Education Certification | 3.0          |                                                                          |
| Geoenvironmental Studies B.S.              | 2.0          |                                                                          |
| Geography B.S.                             | 2.0          |                                                                          |
| Geographic Information System              |              |                                                                          |
| Human Environmental Studies                |              |                                                                          |
| Land Use                                   |              |                                                                          |
| Geography/Secondary Education B.S.Ed.      | 3.0          |                                                                          |
| (Social Studies)                           |              |                                                                          |
| History B.A.                               | 2.0          |                                                                          |
| History B.A. Public History                | 2.0          |                                                                          |
| History Secondary Education B.S.Ed.        | 3.0          | Students are encouraged to declare as soon as possible if considering this major, due to the state certification requirements. |
| (Social Studies)                           |              |                                                                          |
| Geography/Secondary Education B.S.Ed.      | 3.0          |                                                                          |
| (Social Studies)                           |              |                                                                          |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Human Communication Studies</td>
<td>2.0</td>
<td>New majors are welcome. Students who have completed general education courses can complete the major in 2 years and graduate on time if proper advisement is followed.</td>
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<tr>
<td>Interdisciplinary Arts Program</td>
<td>2.0</td>
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<tr>
<td>International Studies</td>
<td>2.0</td>
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<tr>
<td>Mathematics B.S.</td>
<td>2.0</td>
<td><strong>Secondary Education majors must have a 3.0 GPA to declared this major</strong></td>
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<tr>
<td>Applied Mathematics</td>
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<tr>
<td>Statistics</td>
<td>3.0*</td>
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<tr>
<td>Secondary Education Certification *</td>
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<tr>
<td>Custom Concentration</td>
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<tr>
<td>Mechanical Engineering</td>
<td>2.0</td>
<td>Students must be ready to start MAT211 upon declaring (Math level 6). Students who are not ready to start MAT211 are placed into the Computer Science &amp; Engineering General category</td>
</tr>
<tr>
<td>Physics B.S.</td>
<td>2.0</td>
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<tr>
<td>Physics Secondary Education B.S.Ed.</td>
<td>3.0</td>
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<tr>
<td>Political Science B.A.</td>
<td>2.0</td>
<td>A student who has between 60 and 74 credits should have completed PLS 100 U.S. Government and Politics.</td>
</tr>
<tr>
<td>Psychology B.A.</td>
<td>2.3</td>
<td>Admission is competitive and attending a screening interview is required. <strong>All applications are due within the first three weeks of each semester. Applicants will be notified of the date and time of the screening meeting shortly after the application deadline.</strong></td>
</tr>
<tr>
<td>Public Administration B.S.</td>
<td>2.0</td>
<td>A student who has between 60 and 74 credits should have completed PLS 100 U.S. Government and Politics.</td>
</tr>
<tr>
<td>Social Work B.S.W.</td>
<td>2.2</td>
<td>Students must have a 2.5 GPA before they are permitted to assume professional status. Also, IMPORTANT: Students must follow the Social Work program guide in effect at the time they were accepted to the department, not the one in effect at the time they entered Shippensburg. Students who meet the admission guidelines must submit a change of major form to the department within the first three weeks of the semester.</td>
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<td>2.4</td>
<td>31-59 credits</td>
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<td>2.5</td>
<td>60 credits and over</td>
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<tr>
<td>Sociology B.A.</td>
<td>2.0</td>
<td>Sociology welcomes new majors at any time. An informational interview is required to declare the Sociology major. Please schedule an appointment with the department chair by contacting the Sociology and Anthropology Department.</td>
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<tr>
<td>Spanish B.A.</td>
<td>2.0</td>
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<tr>
<td>Software Engineering B.S.</td>
<td>2.0</td>
<td>Students must also have completed CSC 110 Computer Science I (4 cr) with a grade of “C” or better. Students pursuing this major should have strong math skills.</td>
</tr>
<tr>
<td>Spanish B.A.</td>
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<tr>
<td>Secondary Education Certification</td>
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<tr>
<td>Sustainability B.S.</td>
<td>2.0</td>
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<tr>
<td>Teacher Education B.S.Ed.</td>
<td></td>
<td>Admission to this major is competitive. Students must submit a letter of application to the department. Students who apply are ranked according to a score on a rating form. Enrollment is limited, and only top ranked students will be admitted.</td>
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<tr>
<td>Early Childhood/Elementary Education</td>
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<td>Elementary/Middle School Level</td>
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<tr>
<td>Special Education/Early Childhood Dual</td>
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</table>
THE GENERAL EDUCATION PROGRAM
UNDERGRADUATE DEGREE FRAMEWORK

Degree framework for undergraduate students

All degrees awarded by Shippensburg University must be structured to fit the following framework:

- The completion of a minimum of 120 credit hours in the selected curriculum. Students required to complete developmental courses should note that developmental coursework is additive to the 120 credit minimum.
- The completion of all general education courses and the course sequence requirements in the selected curriculum.
- An overall grade point average of at least a 2.0 (“C”) in the total program of courses.
- A cumulative grade point average of at least a 2.0 (“C”) in the major.
- In the case of teacher education students, a satisfactory history of development in student teaching.
- The completion of all final coursework.

Why have a General Education Program at Shippensburg University?

At the core of the curriculum lies the principle that a good education has two distinct purposes. The first of these is to acquire a set of competencies and a grounding in the arts and sciences which promote real intellectual growth in college and ample cultural awareness in the years beyond. The second purpose is to prepare students for a rewarding and socially beneficial vocation by exploring subjects not necessarily available within the confines of a prescribed major.

The program allows students to make personal choices. It also enables the students to satisfy native curiosity, to explore unfamiliar territory, and to cultivate sensitivity toward their environment and an awareness of their personal strengths and weaknesses.

All students at the university are required to complete a general education program.

Overview: Pre-Fall 2018 General Education Program

The Pre-Fall 2018 General Education Program at Shippensburg University comprises forty-eight of the credit hours required for graduation. For students enrolled before Fall 2018, the program includes a series of special courses consisting of three parts:

- Part 1: Required Skills and Competencies (15 credits)
- Part 2: Categories of Knowledge (33 credits)
- Part 3: Diversity Course Requirement

Overview: New General Education Program

The new General Education Program at Shippensburg University comprises forty-five of the credit hours required for graduation. The program includes a series of special courses in five categories:

- Foundations (15 credits)
- Interconnections (9 credits)
- Citizenship and Responsibility (6 credits)
- Natural World and Technology (9 credits)
- Creativity and Expression (6 credits)
PRE-FALL 2018 GENERAL EDUCATION PROGRAM

48 Credits

Part I: Required Skills and Competencies (15 Credits)

_____ Historical Foundations of Global Cultures [students may need to take Reading and Study Skills (RDG050) first]
_____ Thinking Historically in a Global Age
_____ Intro to Human Communication
_____ Writing Intensive First Year Seminar/Advanced Placement Writing [student may need to take Intro to Academic Writing (ENG 113) first]
_____ College-Level Mathematics [students may need to take Developmental Math (MAT 050) and/or an additional prerequisite]

Part II: Categories of Knowledge

Category A—Logic and Numbers for Rational Thinking (1 course – 3 credits)
Category B—Linguistic, Literary, Artistic, & Cultural Traditions (3 courses – 9 credits)
Category C—Biological & Physical Sciences (3 courses – 9 credits)
Category D—Political, Economic, and Geographic Sciences (2 courses – 6 credits)
Category E—Social and Behavioral Sciences (2 courses – 6 credits)

Part III: Additional Requirements

Students are required to take one diversity course to graduate. You can meet this requirement by taking a course that double counts as a diversity course and a general education, major, or free elective course.

See Pre-Fall 2018 General Education Program for more info.
PRE-FALL 2018 GENERAL EDUCATION PROGRAM

COURSE OPTIONS

Category A: Logic and Numbers for Rational Thinking
(One Course - 3 Credit Hours)

**Computer Science**
CSC103 Overview of Computer Science
CSC180 Microcomputer Basic

**Philosophy**
PHL101 Introduction to Philosophy
PHL102 Critical Thinking
PHL103 Introduction to Philosophy of the Mind
PHL105 Introduction to Ethics

**Mathematics**
MAT105 Mathematics for Liberal Studies
MAT107 Mathematical Models Applied to Money
MAT110 Fundamentals of Mathematics I
MAT117 Applied Statistics
MAT140 A/B College Algebra (4/3 credits)
MAT175 Pre-Calculus
MAT181 Applied Calculus I
MAT211 Calculus I

Category B: Linguistic, Literary, Artistic, and Cultural Traditions
(3 Courses - 9 Credit Hours)

**Literature (ONE course from this group)**
ENG250 Introduction to Literature
ENG243 The Art of the Film
ENG248 Introduction to Culturally Diverse Lit. of the U.S.
FRN330 Masterpieces of French Literature
FRN331 Masterpieces of Francophone Literature
GER151 German Cinema
GER320 Berlin
GER322 Readings in 19th & 20th C German Literature
SPN360 Masterpieces of Spanish Literature
SPN361 Masterpieces of Spanish-American Literature

**Humanities (Select TWO courses from different disciplines)**
ART101 Art Appreciation
ART231 Art History I
ART232 Art History II
ART233 Art History III
ART274 Introduction to Cultural Studio
ART339 History of American Art
FRN101 Beginning French I
FRN102 Beginning French II
FRN103 Intermediate French
FRN150 French Civilization
FRN202 Intermediate French Conversation
FRN204 Ideas & Cultures from French-speaking World
FRN320 Commercial French I
GER101 Beginning German I
GER102 Beginning German II
GER103 Intermediate German
GER150 German Civilization and Culture
GER203 Intermediate German Conversation
GER204 Contemporary German Culture
GER215 Commercial German
IAP111 Intro to Interdisciplinary Arts
MUS121 Introduction to Music
MUS227 Opera and Music Theatre
MUS261 World Music
MUS 129 American Popular Music
SOC370 Sociology of the Arts
SPN101 Beginning Spanish I
SPN102 Beginning Spanish II
SPN103 Intermediate Spanish
SPN150 Spanish Civilization and Culture
SPN202 Inter. Spanish Conversation & Grammar
SPN204 Ideas & Cultures from Spanish-speaking World
SPN330 Spanish for Professions
THE121 Introduction to Theater

*Other language courses as offered may be taken in this category.

All students completing a Bachelor of Arts (B.A.) program will be required to attain a Novice level of proficiency in a foreign language. Novice proficiency may be satisfied by the completion of three years of a foreign language in high school, three credits of intermediate level college coursework in a foreign language, an appropriate AP or CLEP score, or satisfactory completion of an intermediate-level proficiency examination.
### Category C: Biological & Physical Sciences
(3 Courses - 9 Credit Hours)

Select ONE course from THREE of the following five disciplines (3 courses for 9 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT121</td>
<td>Physical Anthropology</td>
</tr>
<tr>
<td>BIO100</td>
<td>Basic Biology</td>
</tr>
<tr>
<td>BIO142</td>
<td>Introduction to Ecology</td>
</tr>
<tr>
<td>BIO145</td>
<td>Environmental Biology</td>
</tr>
<tr>
<td>BIO150</td>
<td>Human Biology</td>
</tr>
<tr>
<td>BIO161</td>
<td>Principles of Biology: Cell Structure &amp; Function</td>
</tr>
<tr>
<td>BIO162</td>
<td>Principles of Biology: Organismal Diversity</td>
</tr>
<tr>
<td>BIO208</td>
<td>Field Biology</td>
</tr>
<tr>
<td>ESS108</td>
<td>Conservation of Natural Resources</td>
</tr>
<tr>
<td>ESS110</td>
<td>Introduction to Geology</td>
</tr>
<tr>
<td>ESS111</td>
<td>Introduction to the Atmosphere</td>
</tr>
<tr>
<td>ESS210</td>
<td>Physical Geology</td>
</tr>
<tr>
<td>PHY108</td>
<td>Astronomy</td>
</tr>
<tr>
<td>PHY110</td>
<td>Physics for Society</td>
</tr>
<tr>
<td>PHY115</td>
<td>Physical Science: A Laboratory Approach</td>
</tr>
<tr>
<td>PHY121</td>
<td>Introduction to Physics I</td>
</tr>
<tr>
<td>PHY122</td>
<td>Introduction to Physics II</td>
</tr>
<tr>
<td>PHY205</td>
<td>Intermediate Physics I</td>
</tr>
</tbody>
</table>

CHM103 Chemistry: A Cultural Approach
Appropriate only for non-science majors. It discusses some basic ideas of chemistry in a non-mathematical way and shows how chemistry is involved in our lives.

CHM105 Chemistry: An Observational Approach
Is designed for non-science majors who want a laboratory experience. It requires a minimum amount of mathematical reasoning, for example, in determining mass relationships from chemical formulas and equations.

CHM121 Chemical Bonding
First chemistry course for a well prepared science major.
(Prerequisites: MAT 175 or MAT 117 (either may be taken concurrently with CHM 121) or math placement at Level 5 and one year of high school chemistry.)

*NOTE: Students majoring in the biological or physical sciences are permitted to count one course from their major department toward satisfying this requirement.

### Category D: Political, Economic, and Geographic Sciences
(2 Courses - 6 - 7 Credit Hours)

Select TWO - Each course must be from a different discipline.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO101</td>
<td>Principles of Macroeconomics</td>
</tr>
<tr>
<td>ECO102</td>
<td>Principles of Microeconomics</td>
</tr>
<tr>
<td>ECO113</td>
<td>Principles of Economics</td>
</tr>
<tr>
<td>GEO101</td>
<td>World Geography</td>
</tr>
<tr>
<td>GEO103</td>
<td>Geography of the United States and Canada</td>
</tr>
<tr>
<td>PLS100</td>
<td>U.S. Government and Politics</td>
</tr>
<tr>
<td>PLS141</td>
<td>World Politics</td>
</tr>
</tbody>
</table>

### Category E: Social and Behavioral Sciences
(2 Courses - 6 Credit Hours)

Select TWO - Each course must be from a different discipline.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT111</td>
<td>Cultural Anthropology</td>
</tr>
<tr>
<td>DS 101</td>
<td>Introduction to Disability Studies</td>
</tr>
<tr>
<td>ETH 100</td>
<td>Introduction to Ethnic Studies</td>
</tr>
<tr>
<td>ETH 101</td>
<td>Introduction to African American Studies</td>
</tr>
<tr>
<td>ETH 102</td>
<td>Introduction to Latino Studies</td>
</tr>
<tr>
<td>GEO 140</td>
<td>Cultural Geography</td>
</tr>
<tr>
<td>PSY 101</td>
<td>General Psychology</td>
</tr>
<tr>
<td>SOC 101</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>WST 100</td>
<td>Introduction to Women's Studies</td>
</tr>
<tr>
<td>HCS 125</td>
<td>Survey of Communication Studies</td>
</tr>
</tbody>
</table>

### Diversity Requirement (3 credits)

Select ONE

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 1011</td>
<td>Art Appreciation</td>
</tr>
<tr>
<td>CRJ 452</td>
<td>Race, Ethnicity, and Crime</td>
</tr>
<tr>
<td>ECH 460</td>
<td>Family, School, &amp; Community Partnerships</td>
</tr>
<tr>
<td>EEC 273</td>
<td>Introduction to Exceptionalities</td>
</tr>
<tr>
<td>ENG 2482</td>
<td>Intro to Culturally Diverse Literature of U.S.</td>
</tr>
<tr>
<td>ETH 100</td>
<td>Introduction to Ethnic Studies</td>
</tr>
<tr>
<td>GEO 1033</td>
<td>Geography of the U.S. &amp; Canada</td>
</tr>
<tr>
<td>GEO 1404</td>
<td>Cultural Geography</td>
</tr>
<tr>
<td>HIS 201</td>
<td>US History</td>
</tr>
<tr>
<td>HIS 342</td>
<td>Immigration &amp; Ethnicity</td>
</tr>
<tr>
<td>SWK 265</td>
<td>Understanding Human Diversity for SW</td>
</tr>
<tr>
<td>MGT 447</td>
<td>Business &amp; Society</td>
</tr>
<tr>
<td>SOC 1014</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>WST 1004</td>
<td>Introduction to Women's Studies</td>
</tr>
</tbody>
</table>
I. Required Skills and Competencies
__ENG 114 – Academic Writing
__HCS 100 – Intro to Human Communication Studies
__Mathematical Competency
__HIS 105 – World History I
__HIS 106 – World History II

II. Categories of Knowledge
A: Logic and Numbers for Rational Thinking
   — ______________________________

B: Literary, Artistic & Cultural Traditions
   — ______________________________
   — ______________________________
   — ______________________________

C: Biological & Physical Sciences
   — ______________________________
   — ______________________________
   — ______________________________

D: Political, Economic & Geographic Science
   — ______________________________
   — ______________________________

E: Social & Behavioral Science
   — ______________________________
   — ______________________________

Diversity
   — ______________________________
NEW GENERAL EDUCATION PROGRAM

45 Credits

Foundations (15 credits)
- First Year Seminar—UNIV 101: Shippensburg University First Year Seminar
- Written Communication—ENG 114: Academic Writing or ENG 115: Advanced Placement Writing [may need to begin with ENG 113]
- Oral Communication—HCS 100: Intro to Human Communication Studies
- Historical Themes—HIS 105: Historical Foundation of Global Cultures
- Quantitative Reasoning

Interconnections (9 credits)
Select one Diversity course and one Global Perspectives course. The remaining course can be taken from Diversity, Global Perspectives, or Foreign Language.

Citizenship and Responsibility (6 credits)
Select two Citizenship, Ethical Reasoning, or Critical Reasoning courses from different categories.

Natural World and Technology (9 credits)
Select two Natural World courses. The remaining course can be taken from Natural World or Technology. Please note only two courses from Natural World can come from the same discipline.

Creativity and Expression (6 credits)
Select one Literature course. The remaining course can be taken from Literature, Arts, or Creative.

See General Education for more info.
NEW GENERAL EDUCATION PROGRAM
COURSE OPTIONS

Quantitative Reasoning
MAT105 Mathematics for Liberal Studies
MAT107 Mathematics Models Applied to Money
MAT111 Fundamentals of Mathematics II
MAT117 Applied Statistics
MAT181 Applied Calculus
MAT211 Calculus I
MAT217 Statistics I
*See your advisor to figure out which course is right for you.

Interconnections
Diversity (at least one course from this group)
DS100 Introduction to Disability Studies
ETH100 Introduction to Ethnic Studies
ETH101 Introduction to African American Studies
ETH102 Introduction to Latino Studies
FRN150 French Civilization
GEO103 Geography of the United States and Canada
PSY101 General Psychology
SPN150 Spanish Civilization & Culture
WST100 Introduction to Women's Studies

Foreign Language
ASL101 American Sign Language
ASL102 American Sign Language
CHN101 Beginner's Chinese
CHN102 Beginner's Chinese II
CHN103 Intermediate Chinese
FRN101 Beginning French I
FRN102 Beginning French II
FRN103 Intermediate French
FRN202 Intermediate French Conversation
FRN320 French for the Professions
GER101 Beginning German I
GER102 Beginning German II
GER103 Intermediate German
GER203 Intermediate German Communication
GER215 German for the Professions
SPN101 Beginning Spanish I
SPN102 Beginning Spanish II
SPN103 Intermediate Spanish
SPN202 Intermediate Conversation
SPN330 Spanish for the Professions

Global Perspectives (at least one course from this group)
ANT105 Great Discoveries in Archaeology
ANT111 Cultural Anthropology
ECO101 Principles of Macroeconomics
FRN204 Ideas & Cultures From the French-Speaking World
GER150 German Civilization & Culture
GER204 Ideas & Cultures From German-Speaking World
HIS106 Thinking Historically in a Global Age
PLS141 Introduction to International Politics
SPN153 Latino Pop Culture
SPN204 Ideas & Cultures From Hispanic-Speaking World
SPN385 Aspectos de la civilizacion hispana

Citizenship
ESS108 Conservation of Natural Resources
HIS201 Early History of the United States
PLS100 U.S. Government and Politics

Ethical Reasoning
PHL102 Critical Thinking
SOC101 Introduction to Sociology

Natural World and Technology
ANT121 Physical Anthropology
BIO100 Basic Biology
BIO145 Environmental Biology
BIO150 Human Biology
BIO161 Principles of Biology: Cell Structure and Function
BIO162 Principles of Biology: Organismal Diversity
BIO208 Field Biology
BIO237 Human Anatomy and Physiology I
CHM103 Chemistry: A Cultural Approach
CHM105 Chemistry: An Observational Approach
CHM121 Chemical Bonding
ESS110 Introduction to Geology
ESS111 Introduction to the Atmosphere
ESS210 Physical Geology
PHY108 Astronomy
PHY110 Physics for Society
PHY121 Introduction to Physics I
PHY122 Introduction to Physics II
PHY205 Intermediate Physics I
PHY221 Fundamentals of Physics I

Technology
CSC103 Overview of Computer Science
CSC104 Programming in Python
CSC120 Intro to Computer Science and Metacognition
CSC180 Microcomputer Basic
ECO102 Principles of Microeconomics
EDU200 Information Technology and Media Literacy
ENGR120 - Programming for Engineers
MAT219 Data Science I
MIS300 Information Technology and Business Operations

Creativity and Expression

Literature (at least one)
ENG243 The Art of the Film
ENG248 Intro to Culturally Diverse Literature of the U.S.
ENG250 Introduction to Literature
FRN330 Masterpieces of French Literature
FRN331 Masterpieces of Francophone Literature
GER151 German Cinema
SPN152 Latino Literature
SPN360 Masterpieces of Spanish Literature
SPN361 Masterpieces of Spanish-American Literature
THE121 Introduction to Theatre

Creative
ENG224 Introduction to Creative Writing
MECH100 Engineering Graphics

Arts
ART101 Art Appreciation
ART231 Art History I
ART232 Art History II
ART233 Art History III
ART339 History of American Art
MUS121 Introduction to Music
MUS129 American Popular Music
MUS227 Opera & Music Theatre
MUS261 World Music
**GEC APPROVED** course distribution (as of April 1, 2019) with all Honors variants. Courses in the table below were submitted by departments, thoroughly considered by the GEC Program Committee, discussed openly on the GEC floor, and approved by vote of the whole GEC.

<table>
<thead>
<tr>
<th>Broad Theme</th>
<th>Credits Required</th>
<th>Program Goal, Rubric</th>
<th>Credits Distributed</th>
<th>Courses Approved by GEC *</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOUNDATIONS</td>
<td>15</td>
<td>First Year Seminar (U)</td>
<td>3</td>
<td>UNIV101</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writing (W)</td>
<td>3</td>
<td>ENGI14,115; HON106</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oral Communication (O)</td>
<td>3</td>
<td>HCS100; HON100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History (H)</td>
<td>3</td>
<td>HIS105; HON122</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quantitative (Q)</td>
<td>3</td>
<td>MAT105,107,111,117,181,211,217</td>
</tr>
<tr>
<td>INTERCONNECTIONS</td>
<td>9</td>
<td>Diversity (D)</td>
<td>At least 3</td>
<td>DS100; ETH100,101,102; FRN150; GEO103; HON102,140,151; INT252; PSY101; SPN150; SWK265; WST100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Global Perspectives (G)</td>
<td>At least 3</td>
<td>ANT105,111; ECO101; FRN204; GEO101; GER150,204; HIS106; HON123,141,160,165,274; PLS141; SPN153,204,385</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foreign Languages (F)</td>
<td>e</td>
<td>ASL101,102; CHN101,102,103; FRN101,102,103,202,320; GER101,102,103,203,215; SPN101,102,103,202,330</td>
</tr>
<tr>
<td>CITIZENSHIP AND RESPONSIBILITY</td>
<td>6**</td>
<td>Citizenship (S)</td>
<td>e</td>
<td>ESS108; HIS201; HON279; PLS100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ethical Reasoning (E)</td>
<td>e</td>
<td>HON105; PHL105</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Critical Reasoning (R)</td>
<td>e</td>
<td>ECO113; ENGR110; ESC207; FIN101; GEO140; HCS125; HON130,161; MAT225; PHL101,102; SOC101</td>
</tr>
<tr>
<td>NATURAL WORLD AND TECHNOLOGY</td>
<td>9</td>
<td>Natural World (N)</td>
<td>At least 6</td>
<td>ANT121; BIO100,145,150,161,162,208,237; CHM103,105,121; ESS110,111,210; HON108,142,145,159,180,186,196,244; PHY108,110,121,122,205,221</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technology (T)</td>
<td>e</td>
<td>CSC103,104,120,180; ECO102; EDU200; ENGR120; HON166,182; MAT219; MIS300</td>
</tr>
<tr>
<td>CREATIVITY AND EXPRESSION</td>
<td>6***</td>
<td>Literature (L)</td>
<td>3</td>
<td>ENG243,248,250; FRN330,331; GER151; HON101,224,249; SPN152,360,361; THE121</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arts (A)</td>
<td>e</td>
<td>ART101,231,232,233,339; HON111,135,208,210,261; IAP111; MUS121,129,227,261</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Creativity (C)</td>
<td>e</td>
<td>ENG224; MECH100</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>TOTALS</strong></td>
<td>45</td>
<td>30</td>
</tr>
</tbody>
</table>

*All students are prohibited from counting more than two (2) courses from the same participating academic program toward their General Education requirements.

**Students are required to complete two courses in the Citizenship & Responsibility curriculum, with no more than one course being attributed to the same program goal.

***Students must choose either an Arts or Creativity course to fulfill the remaining three credits in the Creativity and Expression theme.

e – indicates an elective and not a rigid requirement. Students may choose as long as the rules above are followed.
STUDENT RECORD OF NEW GENERAL EDUCATION PROGRAM

I. Foundations
  __UNIV 101 – First Year Seminar
  __ENG 114 – Academic Writing
  __Quantitative Reasoning
  __HIS 105 – Historical Foundations
  __HCS 100 – Intro to Human Communication Studies

II. Interconnections
  __ _______________________(D)
  __ _______________________(G)
  __ _______________________(D, G, or F)

III. Citizenship & Responsibility
  __ _______________________(S, E, or R)
  __ _______________________(different category)

IV. Natural World & Technology
  __ _______________________(N)
  __ _______________________(N)
  __ _______________________(N or T)

V. Creativity and Expression
  __ _______________________(L)
  __ _______________________(L, C, or A)
TIPS FOR STUDENTS
Choosing & Using General Education Coursework

The General Education Program helps you explore many different areas of study. But how do you decide which classes you should take? There are many ways. For example, look for a class that

• Is in a subject you have studied before, and you know you will like.
• You know nothing about or is in a discipline with which you are unfamiliar.
• Helps you develop one of your strengths.
• Helps you work on one of your weaknesses.
• Teaches you about cultures (history, political science, art, music, theater, literature, modern languages, women and gender studies, geography).
• Teaches you about social problems (women and gender studies, geography, sociology).
• Is an introductory course for a major you are considering.
• Helps you understand yourself (sociology, psychology, biology, philosophy).
• Helps you understand the physical world around you (geology, biology, geography, chemistry, physics, mathematics).
• Helps you lead a healthier life (biology, sociology, psychology).
• Examines the major institutions of our society (economics, philosophy, political science, public administration, sociology).
• Examines technology and how it works (computer science, chemistry, physics).
• Improves your communication skills (English, human communication, modern languages).
• Teaches you to solve problems (mathematics, philosophy, chemistry).
• Develops your skills in research, organization and critical thinking.

The above suggestions are examples. Your college education will encompass many different disciplines and will help you to make connections between those disciplines. Use this list as a stimulus, and consult your advisor for more information.

Adapted from 1993 Passport to Your Future: New Student Guidebook, p. 13. Wichita State University. Wichita, Kansas
All students completing a Bachelor of Arts (B.A.) program will be required to attain a Novice level of proficiency in a foreign language. Novice proficiency may be satisfied by the completion of three years of a foreign language in high school, three credits of intermediate level college coursework in a foreign language, or satisfactory completion of an intermediate level proficiency examination.

*B.S.Ed.*
Earth & Space Science
Geography*
History*
Physics

* Comprehensive Social Studies

---

* Secondary cert. available

---

B.A.
Art & Design
Education K-12
Communication Journalism
Electronic Media
Print Media
Public Relations

English #
Literary Studies
Writing
French #
History
Public History
Human Communication
Interdisciplinary Art
International Studies
Political Science
Psychology
Sociology
Spanish #

---

All students completing a Bachelor of Arts (B.A.) program will be required to attain a Novice level of proficiency in a foreign language. Novice proficiency may be satisfied by the completion of three years of a foreign language in high school, three credits of intermediate level college coursework in a foreign language, or satisfactory completion of an intermediate level proficiency examination.

B.S.
Applied Physics (Pre-Engineering)
Biology #
Biotechnology
Clinical Sciences
Ecology & Environmental Health Professions
Chemistry
Biochemistry
Forensic Science
Medical Sciences
Pre-Pharmacy
Civil Engineering
Computer Engineering
Computer Science
Computer Graphics
Computer Science Applications
Related Discipline
Economics
Business
Mathematics
Political Science
Public Administration
Social Science
Electrical Engineering
Geoenvironmental Studies
Geography
Geographic Information Systems
Human Environmental Studies
Land Use
Math #
Statistics
Applied Math
Mechanical Engineering
Physics#
Public Administration
Software Engineering
Sustainability

* Secondary cert. available

---

* Comprehensive Social Studies
APPLIED PHYSICS, B.S.

Requirements for Applied Physics major ≈ 53-54 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Students in the Applied Physics program must complete their Shippensburg University requirements in three years. These consist of the following courses:

Physics Core (32 cr)
- PHY 107 – Seminar for Physics majors (2 cr)
- PHY 221 – Fundamentals of Physics I (5 cr) **
- PHY 222 – Fundamentals of Physics II (5 cr)
- PHY 301 – Mathematical & Numerical Techniques (4 cr)
- PHY 311 – Quantum I (4 cr)
- PHY 321 – Electricity and Magnetism I (4 cr)
- PHY 331 – Mechanics I (4 cr)
- PHY 341 – Classical and Statistical Thermodynamics (4 cr)

Math Requirement (18 cr)
- MAT 211 – Calculus I (4 cr) **
- MAT 212 – Calculus II (4 cr) **
- MAT 213 – Calculus III (4 cr)
- MAT 322 – Differential Equations (3 cr)
- MAT 318 – Elementary Linear Algebra (3 cr)

Chemistry Requirement (8 cr)
- CHM 121 – Chemical Bonding (3 cr) **
- CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)
- CHM 122 – Chemical Dynamics (3 cr)
- CHM 126 – Lab IIB-Equilibrium & Instrumentation (1 cr)

Computer Science/Engineering Requirement (3-4 cr)
- CSC 110 – Computer Science I-Lecture (3 cr) **
- CSC 106 – Computer Science I-Lab (1 cr)
OR
- ENGR 120 – Programming for Engineers (3 cr)

Shippensburg Requirements: 98 cr
GPA Needed to Declare: 2.0

HELPFUL HINTS FOR ADVISING

Semester I
- MAT 211 – Calculus I
- PHY 105 – Seminar for Physics Majors

Semester II
- MAT 212 – Calculus II
- PHY 221 – Fundamentals of Physics I

Notes: Students are recommended to complete 1 semester of Calculus before starting the intermediate physics sequence.

Chemistry should be taken in the junior year. Exceptional students may take it earlier.

Chemical engineering requires one year of Organic Chemistry.

Nanotechnology certificate is available. See the department for more information.

Disclaimer: Courses may be subject to change.
ART & DESIGN, B.A.##

Requirements for the Art major ≈ 39 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Foundation Courses (12 crs)
Take during first year of program:
__ART 101 – Art Appreciation (3 cr) **
__ART 110 – Basic Drawing (3 cr)
__ART 215 – Color and Two-Dimensional Design (3 cr) F
__ART 218 – Three-Dimensional Design (3 cr) S

Additional Art Requirements (12 cr)
__ART 210 – Drawing II (3 cr) S
__ART 232 – Art History II (3 cr) F
__ART 233 – Art History III (3 cr) S
__ART 385 – Senior Art Seminar (3 cr)

Art Electives (15-18 cr)
Select 5 courses below—6 if ART 101, ART 232, or ART 233 is taken as a general education elective; 4 must be at least 300-level.
__ART 211 – Figure Drawing (3 cr)
__ART 216 – Visual Design Technology (3 cr)
__ART 217 – Design I: Page Layout & Composition (3 cr)
__ART 231 – Art History I (3 cr) S
__ART 300, 301, 302, 303, 304, 305 – Independent Studio (3 cr)
__ART 306 – Design II: Vector Illustration (3 cr) S
__ART 315 – Imagination, Creativity and Methodology (3 cr)
__ART 318 – Typography (3 cr)
__ART 319 – Design III: Photo Imagery, Editing (3 cr) S
__ART 321 – Watercolor I (3 cr) S
__ART 322 – Watercolor II (3 cr) F
__ART 326 – Painting I (3 cr) F
__ART 327 – Painting II (3 cr) S
__ART 337 – Printmaking I (3 cr) S
__ART 339 – History of American Art (3 cr)
__ART 338 – Printmaking II (3 cr)
__ART 340 – Ceramics (3 cr)
__ART 341 – Advanced Ceramics (3 cr) S
__ART 342 – Digital Ceramics (3 cr)
__ART 370 – Sculpture (3 cr) F
__ART 371 – Advanced Sculpture (3 cr)
__ART 372 – Dimensional Prototyping (3 cr)
__ART 395 – Internship in Art I (3 cr)
__ART 399 – Independent Study (3 cr)
__ART 410 – Advanced Digital/Graphic Design Studio (3 cr)
__ART 420 – Digital Image & Design Printing (3 cr)
__ART 421 – Digital Painting (3 cr)
__ART 422 – Digital Printmaking (3 cr)
__ART 425 – Digital Media I (3 cr) S
__ART 430 – Digital Media II (3 cr) F
__ART 435 – Portfolio Design & Presentation (3 cr) S

Optional: Certificate in Graphic Design (18 cr)
Students who complete all six computer design courses will receive a certification in Graphic Design upon graduation. Students must fill out a change of major form to add the certification and apply for it when they apply to graduate.
__ART 217 – Graphic Design I: Page Composition (3 cr)
__ART 306 – Graphic Design II: Vector Illustration (3 cr)
__ART 319 – Design III: Photo Imagery, Editing (3 cr)
__ART 425 – Digital Media I (3 cr)
__ART 430 – Digital Media II (3 cr)
__ART 435 – Portfolio Design & Presentation (3 cr)

Also Required:
__Portfolio Review
__Yearly Student Art Exhibit
__Senior Exhibit

## B.A. students must attain proficiency in a foreign language.

Optional: Certificate in Graphic Design (18 cr)
Students who complete all six computer design courses will receive a certification in Graphic Design upon graduation. Students must fill out a change of major form to add the certification and apply for it when they apply to graduate.
__ART 217 – Graphic Design I: Page Composition (3 cr)
__ART 306 – Graphic Design II: Vector Illustration (3 cr)
__ART 319 – Design III: Photo Imagery, Editing (3 cr)
__ART 425 – Digital Media I (3 cr)
__ART 430 – Digital Media II (3 cr)
__ART 435 – Portfolio Design & Presentation (3 cr)

F=Fall only
S=Spring only

Graduation Requirements: 120 cr
Free Electives: 33 cr
GPA needed to declare: 2.0

HELPFUL HINTS FOR ADVISING:

Year 1
ART 101 – Art Appreciation
ART 110 – Basic Drawing
ART 215 – Color/2-Dimensional Design F
ART 232 – Art History II S
ART 210 – Drawing II S
ART 218 – Three-Dimensional Design S

Notes: Double majors such as Art/Communications increase career options.

Art minor is available – 21 cr

Disclaimer: Courses may be subject to change.
ART EDUCATION K-12, B.A.##

Requirements for Art major with Secondary Education Certification = 75 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Foundation Courses (36 cr)
- ART 101 – Art Appreciation (3 cr) **
- ART 110 – Basic Drawing (3 cr)
- ART 210 – Drawing II (3 cr) S
- ART 215 – Color/2-Dimensional Design (3 cr) F
- ART 218 – Three-Dimensional Design (3 cr) S
- ART 232 – Art History II (3 cr) F
- ART 233 – Art History III (3 cr) S
- ART 385 – Senior Art Seminar (3 cr)
- ART 217 – Computer Design I: Page Composition (3 cr)
- ART 326 – Painting I (3 cr) F
- ART 340 – Ceramics (3 cr)
- ART 370 – Sculpture (3 cr) F

Additional Requirements (21 cr)
- BIO 145 – Environmental Biology (3 cr) **
- ESS 108 – Conserv. of Natural Resources (3 cr) **
- GEO 103 – Geography of the U.S. & Canada (3 cr) **
- PSY 101 – General Psychology (3 cr) **
- ENG 190, ENG 243, ENG 248, OR ENG 250 (3 cr) **
- MAT _________________________(except 185) **
- MAT _________________________(except 185) **

College of Education and Human Services (36 cr)
- ART 356 – Social Structures of Aesthetics (3 cr)
- ART 400 – Contemporary Methods in Art Education (3 cr)
- TCH 207 – Org. & Psych. Foundations (3 cr)
- EEC 273 – Introduction to Exceptionalities (3 cr)
- EEC 423 – Effective Instructional Strategies (3cr)
- RDG 413 – Teaching Reading to ELL (3 cr)
- EEC 483 – Assessing Children with Exceptionalities (3 cr)
- EDU 495 – Student Teaching & Practicum (12-15 cr)

Also Required:
- Portfolio Review
- Yearly Student Art Exhibit
- Senior Exhibit

## B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300

F=Fall only
S=Spring only

Graduation Requirements: 120 cr
Free Electives: 0 cr
GPA Needed to Declare: 3.0

HELPFUL HINTS FOR ADVISING:

Year 1
- ART 101 – Art Appreciation
- ART 110 – Basic Drawing
- ART 215 – Color/2-Dimensional Design F
- ART 232 – Art History II F
- ART 210 – Drawing II
- ART 218 – Three-Dimensional Design S

Disclaimer: Courses may be subject to change.
Biology, B.S.

Requirements for the Biology major = 55-57 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Biology Core Courses (13 cr)
- BIO 161 – Principles of Bio I (4 cr) **
- BIO 162 – Principles of Bio II (4 cr)
- BIO 260 – Genetics (4 cr)
- BIO 499 – Capstone Seminar in Biology (1 cr)

Ecology/Evolution Elective (3 cr)
Select one:
- BIO 242 – Ecology (3 cr)
- BIO 430 Principles of Evolution (3 cr)

Physiology Elective (4 cr)
Select one:
- BIO 351 – Animal Physiology (4 cr)
- BIO 350 – Human Physiology (4 cr)

Organismal Elective (3 cr)
Select one:
- BIO 230 – Botany (3 cr)
- BIO 317 – Parasitology (3 cr)
- BIO 362 – Invertebrate Zoology (3 cr)
- BIO 363 – Vertebrate Zoology (3 cr)

Cellular Elective (3 cr)
Select one:
- BIO 220 – Microbiology (3 cr)
- BIO 385 – Cell Biology (3 cr)

Additional Biology Electives (12-15 cr)
Biology credits should total at least 41. Please note only 3 credits of research or internship may count toward biology electives. Credits in excess of that number count as free electives.
- BIO
- BIO
- BIO
- BIO

Mathematics (7-8 cr)
- MAT 211 – Calculus I (4 cr) **
Select one:
- MAT 117 – Applied Statistics (3 cr) **
- MAT 217 – Statistics I (4 cr) **

Physics (8 cr)
- PHY 121 – Intro Physics I – Lecture (3 cr) **
- PHY 123 – Physics I Lab (1 cr)
- PHY 122 – Introductory Physics II – Lecture (3 cr)
- PHY 125 – Physics II Lab (1 cr)

Chemistry (16 cr)
- CHM 121 – Chemical Bonding (3 cr) **
- CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)
- CHM 122 – Chemical Dynamics (3 cr)
- CHM 126 – Lab IIB-Equil. & Instrument. (1 cr)
- CHM 221 – Modern Organic Chemistry (3 cr)
- CHM 225 – Lab IIB-Basic Organic Techniques (1 cr)
Select one:
- CHM 227 – Intro to Biochemistry (4 cr)
- CHM 222 – Modern Organic Chem II (3 cr)
- CHM 226 – Lab IVB-Experiment. Org. Studies (1 cr)

Graduation Requirements: 120 cr
Free Electives: 18 cr
GPA Needed to Declare: 2.5

Declare Biology: Admission to this major is competitive. Students must have earned at least 15 credits & have grades of “C” or better in BIO 161/BIO 162 and CHM 121, MAT 175, or MAT 211.

HELPFUL HINTS FOR ADVISING:

Students should begin their math sequence in their 1st year.

Semester I
- BIO 161 – Principles of Bio I
- CHM 121 – Chemical Bonding
- CHM 125 – Chem Lab IB

Semester II
- BIO 162 – Principles of Bio II
- CHM 122 – Chemical Dynamics
- CHM 126 – Chem Lab IIB

Notes: Physics is normally taken in the junior year
Students lacking strong chemistry/math backgrounds should consider taking CHM 105 before CHM 121.

Biology minor is available – 19 cr

Disclaimer: Courses may be subject to change.
BIOLOGY—BIOTECHNOLOGY, B.S.

Requirements for the Biology major with biotechnology concentration ≈ 59-61 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Biology Core Courses (26 cr)
__BIO 161 – Prin. of Bio: Cell Str. & Funct. (4 cr) **
__BIO 162 – Prin. of Bio: Organismal Diversity (4 cr)
__BIO 220 – Microbiology (4 cr)
__BIO 260 – Genetics (4 cr)
__BIO 385 – Cell Biology (3 cr)
__BIO 418 – Molecular Biology (3 cr)
__BIO 461 – Techniques in Biotechnology (3 cr)
__BIO 499 – Capstone Seminar in Biology (1 cr)

Physiology Elective (4 cr)
Select one:
__BIO 351 – Animal Physiology (4 cr)
OR
__BIO 350 – Human Physiology (4 cr)

Experiential Elective (3 cr)
Select one:
__BIO 396-398 – Intro to Research (3 cr)
OR
__BIO 391-392 – Internship (3 cr)

Additional Biology Electives (9 cr)
Biology credits should total at least 41.
__BIO __________________________
__BIO __________________________
__BIO __________________________

Recommended Electives:
__BIO 230 – Botany (3 cr)
__BIO 324 – Pathogenic Microbiology (3 cr)
__BIO 408 – Principles of Virology (3 cr)
__BIO 409 – Immunology (3 cr)

Mathematics (7-8 cr)
__MAT 211 – Calculus I (4 cr) **
Select one:
__MAT 117 – Applied Statistics (3 cr) **
OR
__MAT 217 – Statistics I (4 cr) **

Physics (8 cr)
__PHY 121 – Introductory Physics I – Lecture (3 cr) **
PHY 122 – Introductory Physics II – Lecture (3 cr)
__PHY 123 – Physics I Lab (1 cr)
__PHY 125 – Physics II Lab (1 cr)

Chemistry (22-23 cr)
__CHM 121 – Chemical Bonding (3 cr) **
__CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)
__CHM 122 – Chemical Dynamics (3 cr)
__CHM 126 – Lab IIB-Equil. & Instrument. (1 cr)
__CHM 221 – Modern Organic Chemistry (3 cr)
__CHM 225 – Lab IIB-Basic Organic Techniques (1 cr)
__CHM 222 – Modern Organic Chem II (3 cr)
__CHM 226 – Lab IVB-Experiment. Org. Studies (1 cr)
__CHM 301 – Biochemistry I (3 cr)
Select one:
__CHM 371 – Analytical Chemistry (4 cr)
OR
__CHM 420 – Biochemistry II (3 cr)

Graduation Requirements: 120 cr
Free Electives: 14 cr
GPA Needed to Declare: 2.5

Declare Biology: Admission to this major is competitive. Students must have earned at least 15 credits & have grades of “C” or better in BIO 161/BIO 162 and CHM 121, MAT 175, or MAT 211.

HELPFUL HINTS FOR ADVISING:

Students should begin their math sequence in their 1st year.

Semester I
BIO 161– Principles of Bio
CHM 121 – Chemical Bonding
CHM 125 – Chem Lab I

Semester II
BIO 162 – Principles of Bio
CHM 122 – Chemical Dynamics
CHM 126 – Chem Lab II

Notes: Physics is normally taken in the junior year

Students lacking strong chemistry/math backgrounds should consider taking CHM 105 – Chemistry: An Observational Approach before CHM 121 – Chemical Bonding.

Disclaimer: Courses may be subject to change.
Biology—Clinical Sciences, B.S.

Requirements for Biology major with Clinical Science Concentration: 48-50 cr

General Education requirements not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Biology Core Courses (24 cr)
- __BIO 161 – Prin. of Bio: Cell Str. & Funct. (4 cr) **
- __BIO 162 – Principles of Bio: Organismal Diversity (4 cr)
- __BIO 220 – Microbiology (4 cr)
- __BIO 260 – Genetics (4 cr)
- __BIO 350 – Human Physiology (4 cr)
- __BIO 385 – Cell Biology (3 cr)
- __BIO 300 Careers in the Health Profession (1 cr)

Additional Biology Electives (7 cr)
Biology credits should total at least 41. Please note only 3 credits of research or internship may count toward biology electives. Credits in excess of that number count as free electives.
- BIO ____________________
- BIO ____________________

Physics Requirements (8 cr)
- __PHY 121 – Introductory Physics I – Lecture (3 cr) **
- PHY 123 – Physics I Lab (1 cr)
- __PHY 122 – Introductory Physics II – Lecture (3 cr)
- PHY 125 – Physics II Lab (1 cr)

Chemistry Requirements (16 cr)
- __CHM 121 – Chemical Bonding (3 cr) **
- CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)
- __CHM 122 – Chemical Dynamics (3 cr)
- CHM 126 – Lab IIB-Equilib. & Instrument. (1 cr)
- __CHM 221 – Modern Organic Chemistry (3 cr)
- CHM 225 – Lab IIB-Basic Organic Techniques (1 cr)
Select one:
- __CHM 227 – Intro to Biochem (4 cr) [recommended]
  OR
- __CHM 222 – Modern Organic Chem II (3 cr) AND
  CHM 226 – Lab IVB-Experiment. Org. Studies (1 cr)

Mathematics Requirements (7-8 cr)
- __MAT 211 – Calculus I (4 cr) **
Select one:
- __MAT 117 – Applied Statistics (3 cr) **
  OR
- __MAT 217 – Statistics I (4 cr) **

Medical Technology Concentration (8-14 cr):
- __BIO 324 – Pathogenic Microbiology (3 cr)
- __BIO 374 – Hematology (2 cr)
- __BIO 409 – Immunology (3 cr)

Recommended:
- __BIO 317 – Parasitology (3 cr)
- __BIO 418 – Molecular Biology (3 cr)

Histotechnology Concentration (7 cr):
- __BIO 371 – Human Anatomy (4 cr)
- __BIO 375 – Histology (3 cr)

Cytotechnology Concentration (7 cr):
- __BIO 371 – Human Anatomy (4 cr)
- __BIO 418 – Molecular Biology (3 cr)

Respiratory Therapy Concentration (7 cr):
- __BIO 371 – Human Anatomy (4 cr)
- __BIO ____________________ (3 cr)
Recommended:
- __BIO 409 – Immunology (3 cr)
- __ENG 238 – Technical/Professional Writing I (3 cr)

All SU coursework must be successfully completed prior to beginning the clinical program. Up to 30 credits will be transferred back to SU after successful completion of the clinical program.

Graduation Requirements: 120 cr
Free Electives: 25 cr
GPA Needed to Declare: 2.5

Declare Biology: Admission to this major is competitive. Students must have earned at least 15 credits & have grades of "C" or better in BIO 161/BIO 162 and CHM 121, MAT 175, or MAT 211.

HELPFUL HINTS FOR ADVISING:

Students should begin their math sequence in their 1st year.

Semester I
- BIO 161 – Principles of Bio
- CHM 121 – Chemical Bonding
- CHM 125 – Chem Lab IB

Semester II
- BIO 162 – Principles of Bio
- CHM 122 – Chemical Dynamics
- CHM 126 – Chem Lab IIB

Notes: 24 credits must be taken in residence.

Physics is normally taken in the junior year.

Students lacking strong chemistry/math backgrounds should consider taking CHM 105 before CHM 121.

Disclaimer: Courses may be subject to change.
Requirements for Biology major with Ecology and Environmental Science Concentration ≈ 58-60 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Biology Core Courses (19 cr)
- BIO 161 – Prin. of Bio: Cell Str. & Funct. (4 cr) **
- BIO 162 – Prin. of Bio: Organismal Diversity (4 cr)
- BIO 230 – Botany (3 cr)
- BIO 242 – Ecology (3 cr)
- BIO 260 – Genetics (4 cr)
- BIO 499 – Capstone Seminar in Biology (1 cr)

Physiology Elective (3-4 cr)
Select one:
- BIO 351 – Animal Physiology (3 cr)
- BIO 350 – Human Physiology (4 cr)

Ecology and Conservation Electives (9 cr)
Select any three:
- BIO 362 – Invertebrate Zoology (3 cr)
- BIO 363 – Vertebrate Zoology (3 cr)
- BIO 406 – Mammalogy (3 cr)
- BIO 412 – Ichthyology (3 cr)
- BIO 417 – Herpetology (3 cr)
- BIO 419 – Ornithology (3 cr)
- BIO 430 – Principles of Evolution (3 cr)
- BIO 442 – Aquatic Ecology (3 cr)
- BIO 444 – Conservation Biology (3 cr)
- BIO 448 – Field Botany and Plant Taxonomy (3 cr)

Cellular Elective (3-4 cr)
- BIO 220 – Microbiology (4 cr)
- BIO 385 – Cell Biology (3 cr)

Additional Biology Elective (3 cr)
Biology credits should total at least 41.
- BIO _______________________ (3 cr)

Recommended Elective:
- BIO 396-398 – Research (3 cr)
- BIO 391-392 – Internship (3 cr)

Geography–Earth Science Requirement (3 cr)
Select one:
- ESS 110 – Introduction to Geology (3 cr)
- ESS 210 – Physical Geology (3 cr)
- GEO 202 – GIS I (3 cr)
- GEO 224 – Soils (3 cr)
- GEO 226 – Hydrology (3 cr)

Mathematics Requirements (7-8 cr)
- MAT 211 – Calculus I (4 cr) **
Select one:
- MAT 117 – Applied Statistics (3 cr) **
- MAT 217 – Statistics I (4 cr) **

Chemistry Requirements (16 cr)
- CHM 121 – Chemical Bonding (3 cr) **
- CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)
- CHM 122 – Chemical Dynamics (3 cr)
- CHM 126 – Lab IIB-Equilib. & Instrument. (1 cr)
- CHM 221 – Modern Organic Chemistry (3 cr)
- CHM 225 – Lab IIB-Basic Organic Techniques (1 cr)

Physics Requirements (8 cr)
- PHY 121 – Introductory Physics I – Lecture (3 cr) **
- PHY 123 – Physics I Lab (1 cr)
- PHY 122 – Introductory Physics II – Lecture (3 cr)
- PHY 125 – Physics II Lab (1 cr)

Graduation Requirements: 120 cr
Free Electives: 15 cr
GPA Needed to Declare: 2.5

Declare Biology: Admission to this major is competitive. Students must have earned at least 15 credits & have grades of “C” or better in BIO 161/BIO 162 and CHM 121, MAT 175, or MAT 211.

HELPFUL HINTS FOR ADVISING:

Students should begin their math sequence in their 1st year.

Semester I
- BIO 161 – Principles of Bio
- CHM 121 – Chemical Bonding
- CHM 125 – Chem Lab IB

Semester II
- BIO 162 – Principles of Bio
- CHM 122 – Chemical Dynamics
- CHM 126 – Chem Lab IIB

Notes: Physics is normally taken in the junior year

Students lacking strong chemistry/math backgrounds should consider taking CHM 105 before CHM 121.

Disclaimer: Courses may be subject to change.
**Biology—Health Professions Concentration, B.S.**

Requirements for Biology major with Health Professions Concentration ≈ 56-61 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**Biology Core Courses (17 cr.)**
- BIO 161 – Prin. of Bio: Cell Str. & Funct. (4 cr) **
- BIO 162 – Prin. of Bio: Organismal Diversity (4 cr)
- BIO 220 – Microbiology (4 cr)
- BIO 260 – Genetics (4 cr)
- BIO 499 – Capstone Seminar in Biology (1 cr)

**Physiology Elective (4 cr)**
Select one:
- BIO 351 – Animal Physiology (4 cr) OR
- BIO 350 – Human Physiology (4 cr)

**Anatomy Elective (3-4 cr)**
Select one:
- BIO 370 – Comparative Vertebrate Anatomy (4 cr) OR
- BIO 371 – Human Anatomy (4 cr) [pre-physical therapy, pre-physician assistant, pre-occupational therapy] OR
- BIO 375 – Histology (3 cr)

**Molecular/Cellular Elective (3 cr)**
Select one:
- BIO 385 – Cell Biology (3 cr) OR
- BIO 418 – Molecular Biology (3 cr)

**Breadth Elective (3 cr)**
Select one:
- BIO 208 – Field Biology (3 cr) OR
- BIO 210 – Field Zoology (3 cr) OR
- BIO 230 – Botany (3 cr) OR
- BIO 242 – Ecology (3 cr) OR
- BIO 330 – Animal Behavior (3 cr)
- BIO 362 – Invertebrate Zoology (3 cr) OR
- BIO 363 – Vertebrate Zoology (3 cr) OR
- BIO 406 – Mammalogy (3 cr) OR
- BIO 412 – Ichthyology (3 cr) OR
- BIO 417 – Herpetology (3 cr) OR
- BIO 419 – Ornithology (3 cr) OR
- BIO 430 – Principles of Evolution (3 cr)

**Additional Biology Electives (9 cr)**
Professional program requirements should be considered when choosing electives. Only 3 credits of internship or research may be used here.

- BIO
- BIO
- BIO
- BIO

**Mathematics Requirements (7-8 cr)**
- MAT 211 – Calculus I (4 cr) **
Select one:
- MAT 117 – Applied Statistics (3 cr) ** OR
- MAT 217 – Statistics I (4 cr) **

**Physics Requirements (8 cr)**
- PHY 121 – Introductory Physics I – Lecture (3 cr) **
- PHY 123 – Physics I Lab (1 cr)
- PHY 122 – Introductory Physics II – Lecture (3 cr)
- PHY 125 – Physics II Lab (1 cr)

**Chemistry Requirements (16-19 cr)**
- CHM 121 – Chemical Bonding (3 cr) **
- CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)
- CHM 122 – Chemical Dynamics (3 cr)
- CHM 126 – Lab IIB-Equil. & Instrument. (1 cr)
- CHM 221 – Modern Organic Chemistry (3 cr)
- CHM 225 – Lab IIB-Basic Organic Techniques (1 cr)
Select one:
- CHM 227 – Intro to Biochemistry (4 cr)
- OR
- CHM 222 – Modern Organic Chem II (3 cr)
- CHM 226 – Lab IBV-Exper. Org. Studies (1 cr) AND
- CHM 301 – Biochemistry I (3 cr)

Organic II with lab and Biochemistry I are required for pre-med, pre-dental, pre-vet, and pre-pharmacy students. Pre-meds are urged to also take CHM 420 – Biochemistry II. Some veterinary programs require a “full course” in biochemistry, i.e., Biochemistry I & II.

**Graduation Requirements: 120 cr**

**Free Electives: 14 cr**

**GPA Needed to Declare: 2.8**

**Declare Biology:** Admission to this major is competitive. Students must have earned at least 15 credits & have grades of “C” or better in BIO 161/BIO 162 and CHM 121, MAT 175, or MAT 211.

The policy of the Shippensburg University Health Professions Committee requires a minimum 3.2 cumulative QPA (medical, dental, veterinary applicants) or 3.0 cumulative QPA (optometry, podiatric applicants) in order for a student to be granted a practice interview and committee letter.

**HELPFUL HINTS FOR ADVISING:**

Students should begin their math sequence in their 1st year.

**Semester I**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 161</td>
<td>Principles of Bio</td>
</tr>
<tr>
<td>CHM 121</td>
<td>Chemical Bonding</td>
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<tr>
<td>CHM 125</td>
<td>Chem Lab IB</td>
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**Semester II**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 162</td>
<td>Principles of Bio</td>
</tr>
<tr>
<td>CHM 122</td>
<td>Chemical Dynamics</td>
</tr>
<tr>
<td>CHM 126</td>
<td>Chem Lab IIB</td>
</tr>
</tbody>
</table>

**Notes:** Physics is normally taken in the junior year.

Students lacking strong chemistry/math backgrounds should consider taking CHM 105 before CHM 121.

**Disclaimer:** Courses may be subject to change.
Requirements for the Biology major with Secondary Education Certification = 80 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**BIOLOGY—SECONDARY EDUCATION, B.S.**

**Core Courses (29 cr)**

- BIO 161 – Prin. of Bio: Cell Str. & Funct. (4 cr) **
- BIO 162 – Prin of Bio: Organismal Diversity (4 cr)
- BIO 208 – Field Biology (3 cr)
- BIO 242 – Ecology (3 cr)
- BIO 260 – Genetics (4 cr)
- BIO 385 – Cell Biology (3 cr)
- BIO 430 – Principles of Evolution (3 cr)
- BIO 499 – Capstone Seminar in Biology (1 cr)

*Select one:
- BIO 351 – Animal Physiology (4 cr)
- BIO 350 – Human Physiology (4 cr)*

**Electives (9 cr)**

Biology credits should total at least 38. Only 3 credits of research or internship may count toward biology electives. Credits in excess of that number count as free electives.

- BIO
- BIO
- BIO
- BIO

**Mathematics Requirements (7-8 cr)**

- MAT 211 – Calculus I (4 cr) **

*Select one:
- MAT 117 – Applied Statistics (3 cr) **
- MAT 217 – Statistics I (4 cr) **

**Physics Requirements (4 cr)**

- PHY 121 – Introductory Physics I – Lecture (3 cr) **
- PHY 123 – Physics I Lab (1 cr)

*Recommended:
- PHY 122 – Introductory Physics II – Lecture (3 cr)
- PHY 125 – Physics II Lab (1 cr)*

**Chemistry Requirements (12-16 cr)**

- CHM 121 – Chemical Bonding (3 cr) **
- CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)
- CHM 122 – Chemical Dynamics (3 cr)
- CHM 126 – Lab IIB- Equil Instr (1 cr)
- CHM 221 – Modern Organic Chemistry (3 cr)
- CHM 225 – Lab IIB-Basic Organic Techniques (1 cr)

*Recommended:
- CHM 227 – Introduction to Biochemistry (4 cr)*

**Psychology Requirement (3 cr)**

- PSY 101 – General Psychology (3 cr) **

**College of Education and Human Services (33 cr)**

- TCH 207 – Org. & Psych. Foundations (3 cr)
- EEC 273 – Introduction to Exceptionalities (3 cr)

**Additional Requirements**

- EEC 423 – Effective Instructional Strategies (3cr)
- EDU 440 – Teaching of Science in Secondary Schools (3 cr)
- EDU 441 – Curriculum & Evaluation in Secondary Sci (3 cr)
- RDG 413 – Teaching Reading to ELL (3 cr)
- EEC 483 – Assessing Children with Exceptionalities (3 cr)
- EDU 495 – Student Teaching & Practicum (12 cr)

**Optional: Environmental Education Certification (9-15 cr)**

- EDU 410 – Environmental Education Practicum (3 cr)

*Select one:
- ESS 110 – Intro to Geology (3 cr)
- ESS 111 – Intro to Atmosphere (3 cr)
- ESS 210 – Physical Geology (3 cr)

*Select one:
- BIO 145 – Environmental Bio (3 cr)
- ESS 108 – Conservation of Natural Resources (3 cr)

**Remaining Electives (3-6 cr):**

See undergraduate catalogue for list:

- 
- 

Graduation Requirements: 120+ cr

Free Electives: 0 cr

GPA Needed to Declare: 3.0

**Declare Biology:** Admission to this major is competitive. Students must have earned at least 15 credits & have grades of “C” or better in BIO 161/BIO 162 and CHM 121, MAT 175, or MAT 211.

**PAPA examinations:** All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

**HELPFUL HINTS FOR ADVISING:**

Students should begin their math sequence in their 1st year.

**Semester I**

- BIO 161 – Principles of Bio
- CHM 121 – Chemical Bonding
- CHM 125 – Chem Lab IB

**Semester II**

- BIO 162 – Principles of Bio
- CHM 122 – Chemical Dynamics
- CHM 126 – Chem Lab IIB

**Notes:** Physics is normally taken in the junior year

Students lacking strong chemistry/math backgrounds should consider taking CHM 105 before CHM 121.

**Disclaimer:** Courses may be subject to change.
CHEMISTRY, B.S.

Requirements for the Chemistry major = 58 cr

General Education requirements not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Chemistry Core Courses (46 cr)

__CHM 110 – The Chemistry Experience (1 cr)
__CHM 121 – Chemical Bonding (3 cr) **
CHM 123 – Lab IA-Experimental Quant. Analysis (1 cr)
__CHM 122 – Chemical Dynamics (3 cr)
CHM 124 – Lab IIA-Experimental Quant. Analysis (1 cr)
__CHM 221 – Modern Organic Chemistry I (3 cr)
__CHM 222 – Modern Organic Chemistry II (3 cr)
__CHM 223 – Lab IIIA-Experimental Org. Techniques (1 cr)
__CHM 224 – Lab IVA-Qualitative Organic Analysis (3 cr)
__CHM 301 – Biochemistry I (3 cr)
__CHM 312, 313, 314, or 315 – Chemistry Seminar (1 cr)
__CHM 324 – Advanced Organic Lab (1 cr)
__CHM 363 – Physical Chemistry I (4 cr) **
__CHM 364 – Physical Chemistry II (4 cr)
__CHM 371 – Analytical Chemistry (4 cr)
__CHM 381 – Intermediate Inorganic Chemistry (3 cr)
__CHM 481 – Advanced Inorganic Chemistry (4 cr)

Select one:
__CHM 420 – Biochemistry II (3 cr)
OR
__CHM 490 – Special Topics (3 cr)

Mathematics Requirements (8 cr)

__MAT 211 – Calculus I (4 cr) **
__MAT 212 – Calculus II (4 cr)

Physics Requirements (8 cr)

__PHY 205 – Intermediate Physics I (3 cr) **
PHY 123 – Physics I Lab (1 cr)
__PHY 206 – Intermediate Physics II (3 cr)
PHY 125 – Physics II Lab (1 cr)

Biology Requirements (4 cr)

__BIO 161 – Prin. of Bio: Cell Str. & Funct. (4 cr) **

Computer Science Requirements (4 cr)

__CSC 110 – Computer Science I (4 cr) **

Graduation Requirements: 120 cr
Free Electives: 17 cr
GPA Needed to Declare: 2.0

American Chemical Society Certification available. See Department Chairperson for details.

All chemistry majors will take a comprehensive examination in their junior year at a time and place designated by the department. Satisfactory performance in all areas of this examination is a requirement for departmental recommendation and ACS certification.

HELPFUL HINTS FOR ADVISING:

Students should begin their math sequence in their 1st year.

Semester I
CHM 121 – Chemical Bonding
CHM 123 – Lab IA
MAT 211 – Calculus I

Semester II
CHM 122 – Chemical Dynamics
CHM 124 – Lab IIA
MAT 212 – Calculus II
BIO 161 – Prin of Bio: Cell Structure & Function

Semester III
PHY 205 – Intermediate Physics I
PHY 123 – Lab I
CHM 221 – Modern Organic Chem I
CHM 223 – Lab IIIA

Semester IV
PHY 206 – Intermediate Physics II
PHY 125 – Lab II
CHM 222 – Mod Organic Chem II
CHM 224 – Lab IVA

Chemistry minor is available – 23-27 cr
Biochemistry minor is available – 24-28 cr

Disclaimer: Courses may be subject to change.
CHEMISTRY—BIOCHEMISTRY, B.S.

Requirements for Chemistry major with Biochemistry Concentration ≈ 65 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Chemistry Requirements (44 cr)

- CHM 110 – The Chemistry Experience (1 cr)
- CHM 121 – Chemical Bonding (3 cr) **
- CHM 123 – Lab IA-Experimental Quant. Analysis (1 cr)
- CHM 122 – Chemical Dynamics (3 cr)
- CHM 124 – Lab IIA-Experimental Quant. Analysis (1 cr)
- CHM 221 – Modern Organic Chemistry I (3 cr)
- CHM 223 – Lab IIIA-Experimental Org. Techniques (1 cr)
- CHM 222 – Modern Organic Chemistry II (3 cr)
- CHM 224 – Lab IVA-Qualitative Organic Analysis (3 cr)
- CHM 301 – Biochemistry I (3 cr)
- CHM 312, 313, 314, or 315 – Chemistry Seminar (1 cr)
- CHM 324 – Advanced Organic Lab (1 cr)
- CHM 363 – Physical Chemistry I (4 cr)
- CHM 364 – Physical Chemistry II (4 cr)
- CHM 371 – Analytical Chemistry (4 cr)
- CHM 381 – Intermediate Inorganic Chemistry (3 cr)
- CHM 420 – Biochemistry II (3 cr)
- CHM 421 – Biochemistry Lab (1 cr)
- CHM 496 – Introduction to Research III (1 cr)

Mathematics Requirements (8 cr)

- MAT 211 – Calculus I (4 cr) **
- MAT 212 – Calculus II (4 cr)

Physics Requirements (8 cr)

- PHY 205 – Intermediate Physics I (3 cr) **
- PHY 123 – Physics I Lab (1 cr)
- PHY 206 – Intermediate Physics II (3 cr)
- PHY 125 – Physics II Lab (1 cr)

Biology Requirements (14 cr)

- BIO 161 – Prin. of Bio: Cell Str. & Funct. (4 cr) **
- BIO 260 – Genetics (4 cr)
- BIO 385 – Cell Biology (3 cr)
- BIO 461 – Techniques in Biotechnology (3 cr)

Recommended Electives (9 cr)

- CSC 110 Computer Science I (4 cr) **
- CHM 490 Special Topics (3 cr)

Graduation Requirements: 120 cr

Free Electives: 10 cr

GPA Needed to Declare: 2.0

# To graduate with American Chemical Society certification students must complete 2 additional credits in research (CHM 497/498)

All chemistry majors will take a comprehensive examination in their junior year at a time and place designated by the department. Satisfactory performance in all areas of this examination is a requirement for departmental recommendation and ACS certification.

HELPFUL HINTS FOR ADVISING:

Students should begin their math sequence in their 1st year.

Semester I
- CHM 121 – Chemical Bonding
- CHM 123 – Lab IA
- MAT 211 – Calculus I

Semester II
- CHM 122 – Chemical Dynamics
- CHM 124 – Lab IIA
- MAT 212 – Calculus II
- BIO 260 – Genetics

Semester III
- PHY 205 – Intermediate Physics I
- PHY 123 – Lab I
- CHM 221 – Modern Organic Chem I
- CHM 223 – Lab IIIA
- BIO 260 – Genetics

Semester IV
- PHY 206 – Intermediate Physics II
- PHY 125 – Lab II
- CHM 222 – Mod Organic Chem II
- CHM 224 – Lab IVA

Second semester juniors are required to take a comprehensive examination as a graduation requirement.

Disclaimer: Courses may be subject to change.
CHEMISTRY—FORENSICS, B.S.

Requirements for Chemistry major with Forensics Concentration ≈ 65 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Chemistry Core Courses (41-42 cr)
- CHM 110 – The Chemistry Experience (1 cr)
- CHM 121 – Chemical Bonding (3 cr) **
- CHM 123 – Lab IA-Experimental Quant. Analysis (1 cr)
- CHM 122 – Chemical Dynamics (3 cr)
- CHM 124 – Lab IIA-Experimental Quant. Analysis (1 cr)
- CHM 221 – Modern Organic Chemistry I (3 cr)
- CHM 223 – Lab IIIA-Experimental Org. Techniques (1 cr)
- CHM 222 – Modern Organic Chemistry II (3 cr)
- CHM 224 – Lab IVA-Qualitative Organic Analysis (3 cr)
- CHM 301 – Biochemistry I (3 cr)
- CHM 324 – Advanced Organic Lab (1 cr)
- CHM 363 – Physical Chemistry I (4 cr)
- CHM 364 – Physical Chemistry II (4 cr)
- CHM 371 – Analytical Chemistry (4 cr)
- CHM 381 – Intermediate Inorganic Chemistry (3 cr)
- CHM 4xx – Chemistry Elective (3-4 cr)

Mathematics Requirements (8 cr)
- MAT 211 – Calculus I (4 cr) **
- MAT 212 – Calculus II (4 cr)

Physics Requirements (8 cr)
- PHY 205 – Intermediate Physics I (3 cr) **
- PHY 123 – Physics I Lab (1 cr)
- PHY 206 – Intermediate Physics II (3 cr)
- PHY 125 – Physics II Lab (1 cr)

Biology Requirements (8 cr)
- BIO 161 – Prin. of Bio: Cell Str. & Funct. (4 cr) **
- BIO 260 – Genetics (4 cr)

Criminal Justice Requirements (12 cr)
- CRJ 100 – Introduction to Criminal Justice (3 cr)
- CRJ 261 – Criminal Law and Procedure (3 cr)
- CRJ 336 – Introduction to Forensic Science (3 cr)
- CRJ 456 – Forensic Science: Evidence Analysis (3 cr)

Recommended Electives (9 cr)
Recommended:
- BIO 418 – Molecular Biology (3 cr)
- BIO 461 – Techniques in Biotechnology (3 cr)
- CRJ 321 – Criminal Investigation (3 cr)

Graduation Requirements: 120 cr
Free Electives: 10 cr
GPA Needed to Declare: 2.0

American Chemical Society Certification available. See Department Chairperson for details.

All chemistry majors will take a comprehensive examination in their junior year at a time and place designated by the department. Satisfactory performance in all areas of this examination is a requirement for departmental recommendation and ACS certification.

HELPFUL HINTS FOR ADVISING:

Students should begin their math sequence in their 1st year.

Semester I
- CHM 121 – Chemical Bonding
- CHM 123 – Lab IA
- MAT 211 – Calculus I

Semester II
- CHM 122 – Chemical Dynamics
- CHM 124 – Lab IIA
- MAT 212 – Calculus II
- BIO 161 – Prin. of Bio: Cell Structure & Function

Semester III
- PHY 205 – Intermediate Physics I
- PHY 123 – Lab I
- CHM 221 – Modern Organic Chem I
- CHM 223 – Lab IIIA
- BIO 260 – Genetics

Semester IV
- PHY 206 – Intermediate Physics II
- PHY 125 – Lab II
- CHM 222 – Mod Organic Chem II
- CHM 224 – Lab IVA

Disclaimer: Courses may be subject to change.
Requirements for Chemistry major with medical sciences concentration ≈ 62 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Chemistry Core Courses (34-36 cr)
- CHM 110 – The Chemistry Experience (1 cr)
- CHM 121 – Chemical Bonding (3 cr) **
- CHM 123 – Lab IA-Experimental Quant. Analysis (1 cr)
- CHM 122 – Chemical Dynamics (3 cr)
- CHM 124 – Lab IIA-Experimental Quant. Analysis (1 cr)
- CHM 221 – Modern Organic Chemistry I (3 cr)
- CHM 223 – Lab IIIA-Experimental Org. Techniques (1 cr)
- CHM 222 – Modern Organic Chemistry II (3 cr)
- CHM 224 – Lab IVA-Qualitative Organic Analysis (3 cr)
- CHM 301 – Biochemistry I (3 cr)
- CHM 312 – Chemistry Seminar (1 cr)
- CHM 363 – Physical Chemistry I (4 cr)
- CHM 381 – Intermediate Inorganic Chemistry (3 cr)
- CHM 420 – Biochemistry II (3 cr)

Select one:
- CHM 496 – Introduction to Research I (1-3 cr)
  OR
- CHM 497 – Introduction to Research II (1-3 cr)

Mathematics Requirements (8 cr)
- MAT 211 – Calculus I (4 cr) **
- MAT 212 – Calculus II (4 cr)

Biology Requirements (18 cr)
- BIO 161 – Prin. of Bio: Cell Str. & Funct. (4 cr) **
- BIO 162 – Prin. of Bio: Organismal Diversity (4 cr)
- BIO 260 – Genetics (3 cr)
- BIO 385 – Cell Biology (3 cr)

Select one:
- BIO 350 – Human Physiology (4 cr)
  OR
- BIO 351 – Animal Physiology (4 cr)

Physics Requirements (8 cr)
- PHY 205 – Intermediate Physics I (3 cr) **
- PHY 123 – Physics I Lab (1 cr)
- PHY 206 – Intermediate Physics II (3 cr)
- PHY 125 – Physics II Lab (1 cr)

Restricted Electives (3-8 cr)
Select one or two:
- BIO 220 – Microbiology (4 cr) OR
- BIO 375 – Histology (3 cr) OR
- BIO 408 – Principles of Virology (3 cr) OR
- BIO 418 – Molecular Biology (3 cr) OR
- BIO 461 – Techniques in Biotechnology (3 cr) OR
- CHM 364 – Physical Chemistry II (4 cr) OR
- CHM 371 – Analytical Chemistry (4 cr) OR
- CHM 421 – Biochemistry Lab (1 cr)

Sociology and Psychology Requirements (6 cr)
- SOC 101 – Introduction to Sociology (3 cr) **
- PSY 101 – General Psychology (3 cr) **

Recommended Electives
- BIO 409 – Immunology (3 cr)
- CHM 324 – Advanced Inorganic Chemistry (4 cr)
- CHM 481 – Advanced Inorganic Chemistry (4 cr)
- CHM 490 – Selected Topics in Chemistry (1-3 cr)
- CSC 110 – Computer Science I – Lecture (3 cr)
- SOC 369 – Medical Sociology (3 cr)

Graduation Requirements: 120 cr
Free Electives: 13 cr
GPA Needed to Declare: 3.2

To enter into this concentration, students must have a GPA of 3.2. Students in this concentration must maintain a GPA of 3.2 or better.

Students that choose this concentration are not eligible for American Chemical Society Certification.

HELPFUL HINTS FOR ADVISING:

Students should begin their math sequence in their 1st year.

Semester I
- CHM 121 – Chemical Bonding
- CHM 123 – Lab IA
- MAT 211 – Calculus I

Semester II
- CHM 122 – Chemical Dynamics
- CHM 124 – Lab IIA
- MAT 212 – Calculus II
- BIO 161 – Prin. of Bio: Cell Structure & Function

Semester III
- PHY 205 – Intermediate Physics I
- PHY 123 – Lab I
- CHM 221 – Modern Organic Chem I
- CHM 223 – Lab IIIA
- BIO 162 – Prin. of Bio: Organismal Diversity

Semester IV
- PHY 206 – Intermediate Physics II
- PHY 125 – Lab II
- CHM 222 – Mod Organic Chem II
- CHM 224 – Lab IVA

Disclaimer: Courses may be subject to change.
# CHEMISTRY—PRE-PHARMACY, B.S.

Requirements for Chemistry major with Pre-Pharmacy Concentration ≈ 62 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**Chemistry Core Courses (41-42 cr)**
- CHM 110 – The Chemistry Experience (1 cr)
- CHM 121 – Chemical Bonding (3 cr) **
- CHM 123 – Lab IA-Experimental Quant. Analysis (1 cr)
- CHM 122 – Chemical Dynamics (3 cr) **
- CHM 124 – Lab IIA-Experimental Quant. Analysis (1 cr)
- CHM 221 – Modern Organic Chemistry I (3 cr)
- CHM 223 – Lab IIIA-Experimental Org. Techniques (1 cr)
- CHM 222 – Modern Organic Chemistry II (3 cr)
- CHM 224 – Lab IVA-Qualitative Organic Analysis (3 cr)
- CHM 301 – Biochemistry I (3 cr)
- CHM 324 – Advanced Organic Lab (1 cr)
- CHM 363 – Physical Chemistry I (4 cr)
- CHM 364 – Physical Chemistry II (4 cr)
- CHM 371 – Analytical Chemistry (4 cr)
- CHM 381 – Intermediate Inorganic Chemistry (3 cr)

**Mathematics Requirements (11 cr)**
- MAT 117 – Applied Statistics (3 cr) **
- MAT 211 – Calculus I (4 cr) **
- MAT 212 – Calculus II (4 cr)

**Physics Requirements (8 cr)**
- PHY 205 – Intermediate Physics I (3 cr) **
- PHY 123 – Physics I Lab (1 cr)
- PHY 206 – Intermediate Physics II (3 cr)
- PHY 125 – Physics I Lab (1 cr)

**Biology Requirements (15 cr)**
- BIO 161 – Prin. of Bio: Cell Str. & Funct. (4 cr)**
- BIO 162 – Prin. of Bio: Organismal Diversity (4 cr)
- BIO 220 – Microbiology (3 cr)

Select one:
- BIO 350 – Human Physiology (4 cr)
- OR
- BIO 371 – Human Anatomy (4 cr)

Graduation Requirements: 120 cr
Free Electives: 13 cr
GPA Needed to Declare: 2.0

All students are expected to have a minimum GPA of 2.8 by the end of the sophomore year. Some pre-professional programs will require a considerably higher GPA to be competitive for admission to a professional school.

All chemistry majors will take a comprehensive examination in their junior year at a time and place designated by the department. Satisfactory performance in all areas of this examination is a requirement for departmental recommendation and ACS certification.

**HELPFUL HINTS FOR ADVISING:**

Students should begin their math sequence in their 1st year.

| Semester I | CHM 121 – Chemical Bonding |
| CHM 123 – Lab IA |
| MAT 211 – Calculus I |

| Semester II | CHM 122 – Chemical Dynamics |
| CHM 124 – Lab IIA |
| MAT 212 – Calculus II |
| BIO 161 – Prin. of Bio: Cell Structure & Function |

| Semester III | PHY 205 – Intermediate Physics I |
| PHY 123 – Lab I |
| CHM 221 – Modern Organic Chem I |
| CHM 223 – Lab IIIA |
| BIO 162 – Prin. of Bio: Organismal Diversity |

| Semester IV | PHY 206 – Intermediate Physics II |
| PHY 125 – Lab II |
| CHM 222 – Mod Organic Chem II |
| CHM 224 – Lab IVA |

Disclaimer: Courses may be subject to change.
Requirements for Chemistry major with Secondary Education Certification = 78 cr

General Education requirements not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Chemistry Core Courses (37 cr)
__CHM 110 – The Chemistry Experience (1 cr)
__CHM 121 – Chemical Bonding (3 cr) **
CHM 123 – Lab IA-Experimental Quant. Analysis (1 cr)
__CHM 122 – Chemical Dynamics (3 cr)
__CHM 124 – Lab IIA-Experimental Quant. Analysis (1 cr)
__CHM 221 – Modern Organic Chemistry I (3 cr)
__CHM 223 – Lab IIIA-Experimental Org. Techniques (1 cr)
__CHM 222 – Modern Organic Chemistry II (3 cr)
__CHM 224 – Lab IVA-Qualitative Organic Analysis (3 cr)
__CHM 301 – Biochemistry I (3 cr)
__CHM 363 – Physical Chemistry I (4 cr)
__CHM 364 – Physical Chemistry II (4 cr)
__CHM 371 – Analytical Chemistry (4 cr)
__CHM 381 – Intermediate Inorganic Chemistry (3 cr)

Mathematics (8 cr)
__MAT 211 – Calculus I (4 cr) **
__MAT 212 – Calculus II (4 cr)

Physics (8 cr)
__PHY 205 – Intermediate Physics I (3 cr) **
PHY 123 – Physics I Lab (1 cr)
__PHY 206 – Intermediate Physics II (3 cr)
PHY 125 – Physics II Lab (1 cr)

Biology (4 cr)
__BIO 161 – Prin. of Bio: Cell Str. & Funct. (4 cr) **

Psychology Requirement (3 cr)
__PSY 101 – General Psychology (3 cr) **

College of Education and Human Services (33-36 cr)
__TCH 207 – Org. & Psych. Foundations (3 cr)
__EEC 273 – Introduction to Exceptionalities (3 cr)
__EEC 423 – Effective Instructional Strategies (3cr)
__EDU 440 – Teaching of Science in Secondary Schools (3 cr)
__EDU 441 – Curriculum & Evaluation in Secondary Sci (3 cr)
__RDG 413 – Teaching Reading to ELL (3 cr)
__EEC 483 – Assessing Children with Exceptionalities (3 cr)
__EDU 495 – Student Teaching & Practicum (12-15 cr)

Graduation Requirements: 123 cr
Free Electives: 0 cr
GPA Needed to Declare: 3.0

American Chemical Society Certification available. See Department Chairperson for details.

All chemistry majors will take a comprehensive examination in their junior year at a time and place designated by the department. Satisfactory performance in all areas of this examination is a requirement for departmental recommendation and ACS certification.

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

HELPFUL HINTS FOR ADVISING:

Students should begin their math sequence in their 1st year.

Semester I
CHM 121 – Chemical Bonding
CHM 123 – Lab IA
MAT 211 – Calculus I

Semester II
CHM 122 – Chemical Dynamics
CHM 124 – Lab IIA
MAT 212 – Calculus II
PSY 101 – General Psychology

Semester III
PHY 205 – Intermediate Physics I
PHY 123 – Lab I
CHM 221 – Modern Organic Chem I
CHM 223 – Lab IIIA
BIO 161 – Prin. of Bio: Cell Structure & Function

Semester IV
PHY 206 – Intermediate Physics II
PHY 125 – Lab II
CHM 222 – Mod Organic Chem II
CHM 224 – Lab IVA

Disclaimer: Courses may be subject to change.
CIVIL ENGINEERING, B.S.

Requirements for Software Engineering major ≈ 88 cr

General Education requirements not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Engineering Core (12 cr)
__ENGR 100 – Engineering Seminar I (1 cr)
__ENGR 110 – Modeling & Simulation (3 cr)
__ENGR 120 – Programming for Engineers (3 cr)
__ENGR 200 – Engineering Seminar II (1 cr)
__ENGR 300 – Engineering Seminar III (1 cr)
__ENGR 310 – Statistical Process Control (3 cr)

Mathematics Requirements (22 cr)
__MAT 211 – Calculus I (4 cr) **
__MAT 212 – Calculus II (4 cr) **
__MAT 213 – Calculus III (4 cr)
__MAT 318 – Linear Algebra (3 cr)
__MAT 322 – Differential Equations (3 cr)
__MAT 375 – Probability and Stats for Engineers (4 cr)

Physical Science Requirements (18 cr)
__PHY 205 – Intermediate Physics I Lecture (3 cr) **
__PHY 206 – Intermediate Physics I Lab (1 cr)
__ESS 210 – Physical Geology (3 cr) **
__GEO 226 – Hydrology (3 cr)

Civil and Mechanical Engineering Requirements (40 cr)
__MECH 200 – Statics (3 cr)
__MECH 210 – Dynamics (4 cr)
__MECH 220 – Fluids (4 cr)
__CIVE110 – Measurements and CAD (3 cr)
__CIVE200 – Mechanics of Materials (4 cr)
__CIVE300 – Structural Analysis (3 cr)
__CIVE320 – Construction Methods and Materials (3 cr)
__CIVE330 – Environmental Engineering (3 cr)
__CIVE340 – Design of Concrete Structures (3 cr)
__CIVE350 – Soil Mechanics (4 cr)
__CIVE410 – Foundation Engineering (3 cr)
__CIVE499 – Civil Engineering Capstone (3 cr)

No Concentration (9 cr)
__CIVE 310 – Design of Steel Structures (3 cr)
__CIVE 400 – Construction Project Management (3 cr)
__CIVExxx – Civil Engineering Elective (3 cr)

Optional Environmental Concentration (9 cr)
__CIVE 440 – Water and Wastewater Treatment (3 cr)
__CIVE 450 – Waste Management (3 cr)
__CIVE xxx – Civil or GEO/ESS Elective (related to Environmental Concentration) (3 cr)

Graduation Requirements: 120+ cr
Free Electives: 0 cr
GPA Needed to Declare: 2.0

HELPFUL HINTS FOR ADVISING:

Semester I
MAT 211 – Calculus I
PHY 205/123 – Intermediate Physics I
ENGR 100 – Seminar I
ENGR 110 – Modeling & Simulation

Semester II
MAT 212 – Calculus II
PHY 206/125 – Intermediate Physics II
ENGR 120 – Programming for Engineers

Disclaimer: Courses may be subject to change.
COMMUNICATION/JOURNALISM, B.S.

Requirements for Communications/Journalism major = 42 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Communication/Journalism Core (15 cr)
- COM 111 – Introduction to Mass Communications (3 cr)
- COM 112 – Media Writing (3 cr)
- COM 245 – Diversity and the Media (3 cr)
- COM 345 – Communication Law and Ethics (3 cr)
- COM 355 – Comm/Journ Professional Practicum (3 cr)

Electronic Media Emphasis (12 cr)
- COM 224 – Electronic Media (3 cr)
- COM 284 – Electronic Media Basic Production (3 cr)
- COM 424 – Electr. Media Producing & Performance (3 cr)
- COM 484 – Electronic Media Programming & Mgmt (3 cr)

Print Media Emphasis (12 cr)
- COM 285 – News Writing & Reporting (3 cr)
- COM 293 – Editing (3 cr)
- COM 375 – Public Affairs Reporting (3 cr)
- COM 478 – Digital Journalism (3 cr)

Public Relations Emphasis (12 cr)
- COM 201 – Principles of Public Relations (3 cr)
- COM 241 – Public Relations Writing (3 cr)
- COM 381 – Promotional Publication Design (3 cr)
- COM 432 – Public Relations Research & Campaigns (3 cr)

Communication/Journalism Electives (15 cr)
Students can choose 5 courses from the Professional Emphases courses above not included in the student’s professional Emphasis and the courses listed below:
- COM 290 – Advertising Copywriting (3 cr)
- COM 305 – Sports Journalism (3 cr)
- COM 335 – Media Advertising and Sales (3 cr)
- COM 360 – Basic Digital Photographic Comm. (3 cr)
- COM 362 – Photojournalism (3 cr)
- COM 395 – Internship I (1-6 cr)
- COM 396 – Internship II (1-6 cr)
- COM 410 – Women and the Media (3 cr)
- COM 425 – Feature Writing (3 cr)
- COM 451 – Electronic Field Production (3 cr)
- COM 452 – Multimedia Journalism (3 cr)
- COM 460 – Case Studies in Public Relations (3 cr)
- COM 470 – Advanced Digital Photographic Comm. (3 cr)
- COM 476 – Magazine Design (3 cr)
- COM 481 – Digital Media Design (3 cr)
- COM 482 – Internet Communication (3 cr)
- COM 490, 491, 492 – Selected Topics (1-3 cr)

Mathematics Requirement (3 cr)
- MAT 117 – Applied Statistics (3 cr) **

# B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

Above average writing skills are needed in this major and students are highly encouraged to take courses that will enhance these skills.

As part of the COM 112: Media Writing course, a grammar/style proficiency exam is given to all students. This exam must be passed with a score of 70 or better to pass the course and stay in the major/minor. Students are permitted to take the exam no more than two times. COM 112 must be taken at SU.

A professional internship is strongly recommended. One to three internship credits may be scheduled by qualified juniors or seniors who meet the department standards and who have obtained written approval from the department internship coordinator. Each internship credit is equivalent to 40 hours of work on-site.

Only 12 credits of transfer may be counted as part of the major.

Graduation Requirements: 120 cr
Free Electives: 33 cr
GPA needed to declare: 2.0

HELPFUL HINTS FOR ADVISING:

Semester I: COM 111 – Intro to Mass Comm
Semester II: COM 112 – Media Writing

A Communication/Journalism minor is available – 18 cr. Transfer courses are not permitted to count toward the minor.

Disclaimer: Courses may be subject to change.
Requirements for Computer Engineering major = 70 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**Engineering Core (12 cr)**
- ENGR 100 – Engineering Seminar I (1 cr)
- ENGR 110 – Modeling & Simulation (3 cr)
- ENGR 120 – Programming for Engineers (3 cr)
- ENGR 200 – Engineering Seminar II (1 cr)
- ENGR 300 – Engineering Seminar III (1 cr)
- ENGR 310 – Statistical Process Control (3 cr)

**Computer Science & Engineering Requirements (26 cr)**
- CMPE 220 – Computer Organization (4 cr)
- CMPE 320 – Operating Systems (4 cr)
- CMPE 322 – Microcontrollers & Interfaces (4 cr)
- CMPE 411 – OS Design & Implementation (4 cr)
- CMPE 420 – Digital and Reconfigurable Computing (4 cr)
- ELEC 220 – Linear Circuit Analysis (4 cr)
- CMPE 499 – Engineering Design & Development (2 cr)

**Elective Credits (12 cr)**
(Must be taken at 300 or 400 level)
- CMPE (4 cr)
- ENGR, CMPE, ELEC or SWE (4 cr)
- ENGR, CMPE, ELEC or SWE (4 cr)

**Mathematics Requirements (19 cr)**
- MAT 211 – Calculus I (4 cr)**
- MAT 212 – Calculus II (4 cr)
- MAT 213 – Calculus III (4 cr)
- MAT 255 – Discrete Mathematics (4 cr)
- MAT 322 – Differential Equations (3 cr)
- MAT 375 – Probability & Stats for Engineers (4 cr)

**Physics Requirements (12 cr)**
- PHY 205 – Intermediate Physics I (3 cr)**
- PHY 206 – Intermediate Physics II (3 cr)
- PHY 125 – Physics I Lab (1 cr)

Graduation Requirements: 120 cr
Free Electives: 5 cr
GPA Needed to Declare: 2.0

Students must be at a minimum math placement level of 6 to declare.

Students should be advised that this program is academically challenging. Significant effort outside of class, self-discipline, and commitment to completing tasks will be crucial for student success.

Students pursuing this major should be very strong academically, have strong math, logic, and reasoning skills; and a background in science.

HELPFUL HINTS FOR ADVISING:

Semester I
- ENGR 110 – Modeling
- ENGR 110 Engineering Seminar I
- MAT 211 – Calculus I
- PHY 205 – Intermediate Physics I
- PHY 123 – Physics I Lab

Semester II
- ENGR 210 – Programming for Engineers
- MAT 212 – Calculus II
- PHY 206 – Intermediate Physics II
- PHY 125 – Physics II Lab

Disclaimer: Courses may be subject to change.
COMPUTER SCIENCE, B.S.

Requirements for Computer Science major ≈ 65 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Mathematics Core (15 cr)

__MAT 211 – Calculus I (4 cr) **
__MAT 225 – Discrete Mathematics (4 cr)
__MAT 318 – Elementary Linear Algebra (3 cr)
Select one:
__MAT 217 – Statistics I (4 cr)
OR
__MAT 375 – Probability & Stats for Engineers (4 cr)

Computer Science Core (32 cr)

__CSC 110 – Computer Science I-Lecture (4 cr) **
__CSC 111 – Computer Science II (4 cr)
__SWE 200 – Design Patterns (4 cr)
__CMPE 220 – Computer Organization (4 cr)
__SWE 310 – Design and Analysis of Algorithms (4 cr)
__CMPE 320 – Operating Systems (4 cr)
__CMPE 310 – Theoretical Foundations of CS (4 cr)
__CSC 415 – Theoretical Foundations of CS (4 cr)
__CSC 498 – Senior Research Methods (2 cr)
__CSC 499 – Senior Research and Development (2 cr)

Science Requirement (8 cr)

Select any two:
__BIO 161 – Prin. of Bio: Cell Str. and Funct. (4 cr) ** OR
__BIO 162 – Prin. of Bio: Organismal Diversity (4 cr) ** OR
__CHM 121 – Chemical Bonding (3 cr) **
__CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr) OR
__CHM 122 – Chemical Dynamics (3 cr) **
__CHM 126 – Lab IIB-Equilibrium & Instr (1 cr) OR
__ESS 110 – Intro to Geology (3 cr) OR
__PHY 205 – Intermediate Physics I (3 cr)
__PHY 123 – Physics I Lab (1 cr) ** OR
__PHY 206 – Intermediate Physics II (3 cr)
__PHY 125 – Physics II Lab (1 cr) **

Artificial Intelligence Concentration (18-19 cr)

__CSC 462 – Artificial Intelligence (4 cr)
__CSC 402 – Big Data Analytics (4 cr)
__CSC 403 – Machine Learning (4 cr)
__CSC, SWE, CMPE, or ELEC 4xx (3-4 cr)
Select one:
__MAT 326 – Mathematical Modeling (3 cr) OR
__PSY 320 – Behavioral Neuroscience (3 cr) OR
__PSY 325 – Psychology of Human Cognition (3 cr)

Computer Science Applications Concentration (18-20 cr)

__CSC 371 – Database Management Systems (4 cr)
__CSC 431 – Computer Networks (4 cr)
__CSC 462 – Artificial Intelligence (4 cr)
__CSC, SWE, CMPE, or ELEC 4xx (3-4 cr)
Select one:
__MIL 231 – Self/Team Dev (2 cr) AND
__MIL 232 – Indiv/Team Mil Tact (2 cr) OR
__MIS 344 – Bus Syst Analy Des (3 cr) OR
__MIS 399 – Intro Corp Cybersecurity (3 cr) OR
__MIS 442 – E-Commerce Tech Intg (3 cr) OR
__MAT 326 – Mathematical Modeling (3 cr) OR
__MAT 219 – Data Science I (3 cr) OR
__GEO 202 – GIS I: Intro to GIS (3 cr) OR
__GEO 339 – Remote Sensing (3 cr) OR
__ECO 333 – Res & Analysis Econ (3 cr)

Computer Graphics Concentration (18-19 cr)

__CSC 350 – Introduction to Computer Graphics (4 cr)
__CSC 361 – Video Game Programming (4 cr)
__CSC 451 – Computer Graphics Algorithms (4 cr)
__CSC, SWE, CMPE, ELEC 3xx or 4xx (3-4 cr)
Select one:
__ART 217 – Computer Design I (3 cr) OR
__GEO 202 – GIS I: Intro to Geographic Info Systems (3 cr) OR
__GEO 339 – Remote Sensing (3 cr)

CS w/ Secondary Field Concentration

__major or minor in other discipline
__CSC, SWE, CMPE, ELEC 3xx or 4xx (4 cr)
__CSC, SWE, CMPE, ELEC 3xx or 4xx (4 cr)
Select one:
__CSC 361 – Video Game Programming (4 cr)
__CSC 371 – Database Mtg Systems (4 cr)
__CSC 403 – Machine Learning (4 cr)
__CSC 434 – Web Programming (4 cr)
__CSC 451 – Comp Graph Algorithm (4 cr)

Graduation Requirements: 120 cr
Free Electives: 10 cr
GPA Needed to Declare: 2.0

Students who wish to design a personalized concentration may do so with the help of their advisor. The advisor will then submit the request to the department for approval. The student's course of study must be approved by the department in writing.

To declare this major a student must earn a 'C' or better in CSC 110 Computer Science I and be at a minimum math placement of level 4.

HELPFUL HINTS FOR ADVISING:

Semester I
CSC 107 – Computer Science I-Lab
CSC 110 – Computer Science I-Lecture
MAT 211 – Calculus I

Semester II
CSC 111 – Computer Science II
MAT 225 – Discrete Mathematics

Semester III
SWE 200 – Design Patterns
CMPE 220 – Computer Organization
BIO 161, CHM 121/123, or PHY 205/123

Semester IV
CSC 310 – Design & Analysis of Algorithms
CMPE 320 – Operating Systems
BIO 162, CHM 122/124, or PHY 206/125

A computer science minor is available ~ 20-21 cr
Disclaimer: Courses may be subject to change.
ECONOMICS, B.S.

Requirements for Economics major = 41-55 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Economics Requirements (27 cr)
- ECO 101 – Prin. of Macroeconomics (3 cr) **
- ECO 102 – Prin. of Microeconomics (3 cr) **
- ECO 270 – Intermediate Macroeconomic Theory (3 cr)
- ECO 280 – Managerial Economics (3 cr)
  ECO __________________________(300+ level)
- ECO __________________________(300+ level)
- ECO __________________________(300+ level)
- ECO __________________________(300+ level)

Business Concentration (24-26 cr)
Courses below fulfill requirements for business minor.
- ACC 200 – Fundamentals of Financial Accounting (3 cr)
- FIN 311 – Financial Management (3 cr)
- MKT 305 – Organization Behavior (3 cr)
- MKT 305 – Principles of Marketing (3 cr)
  FIN or ACC __________________________(3 cr)
  Select 1 course from the College of Business (3 cr)

Select one:
- MAT 181 – Applied Calculus (3 cr) ** OR
- MAT 211 – Calculus (4 cr) **

Select one:
- MAT 117 – Applied Statistics (3 cr) ** OR
- MAT 217 – Statistics I (4 cr) ** OR
- SCM 200 – Statistical Applications in Bus. (3 cr) OR
  [pre-req: MIS 142]

Data Science Concentration (23-27 cr)
- MAT 217 – Statistics I (4 cr) **
- MAT 219 – Data Science I (3 cr)
- MAT 317 – Statistics II (3 cr)
- MAT 319 – Data Science II (3 cr)
- ECO 333 – Research & Analysis in Economics (3 cr)

Select one:
- MAT 181 – Applied Calculus (3 cr) ** OR
- MAT 211 – Calculus (4 cr) **

Select one:
- CSC 104 – Programming in Python (3 cr) ** OR
- CSC 110 – Computer Science I – Lecture (4 cr) ** OR
- MIS 240 – Introduction to Programming Concepts (3 cr)

Mathematics Concentration (20-23 cr)
- ECO __________________________(300+ level)
- MAT 211 – Calculus I (4 cr) **
- MAT 212 – Calculus II (4 cr) **
- MAT 217 – Statistics I (3 cr)

Select 3 of the following, 2 must be 300+:
- MAT 213 – Calculus III (4 cr)
- MAT 225 – Discrete Mathematics (4 cr) **
- MAT 317 – Statistics II (3 cr)
- MAT 318 – Elementary Linear Algebra (3 cr)
- MAT 322 – Differential Equations (3 cr)
- MAT 425 – Advanced Algebraic Structures (3 cr)

Political Science Concentration (24-28 cr)
- PLS 100 – U.S. Government & Politics (3 cr) **
- PLS 201 – Foundations of Political Science (3 cr)
- PLS 300 – Advanced American Government (3 cr)
  PLS __________________________(300+ level)
  PLS __________________________(300+ level)

Select one:
- PLS 301 – Political Science Research Methods (3 cr) OR
- PLS 302 – Public Policy Analysis (3 cr)

Select one:
- MAT 181 – Applied Calculus (3 cr) ** OR
- MAT 211 – Calculus I (4 cr) **

Select one:
- MAT 117 – Applied Statistics (3 cr) OR
- MAT 217 – Statistics I (4 cr)

To fulfill the Political Science minor, also take the following:
- PLS 141 – World Politics (3 cr) **

Public Administration Concentration (24-26 cr)
- PLS 100 – U.S. Government & Politics (3 cr) **
- PLS 271 – Introduction to Public Administration (3 cr)
- PLS 300 – Advanced American Government (3 cr)
  PLS __________________________(3 cr)

Select one:
- PLS 371 – Public Management (3 cr) OR
- PLS 373 – Public Financial Administration (3 cr)

Select one:
- MAT 181 – Applied Calculus (3 cr) ** OR
- MAT 211 – Calculus I (4 cr) **

Select one:
- MAT 117 – Applied Statistics (3 cr) ** OR
- MAT 217 – Statistics I (4 cr) **

Select one:
- PLS 371 – Public Management (3 cr) OR
- PLS 373 – Public Financial Administration (3 cr)

Select one:
- PLS 231 – State & Local Government (3 cr) OR
- PLS 371 – Public Management (3 cr) OR
- PLS 372 – Public Personnel Administration (3 cr) OR
- PLS 374 – Public Service Ethics (3 cr)

Social Science Concentration (24-28 cr)
- PLS 100 – U.S. Government & Politics (3 cr) **
  PLS __________________________(300+ level)
- SOC 241 – Contemporary Social Problems (3 cr)
  SOC __________________________(300+ level)
- GEO 230 – Economic Geography (3 cr)
  GEO __________________________(300+ level)

Select one:
- MAT 117 – Applied Statistics (3 cr) OR
- MAT 217 – Statistics I (4 cr)

Select one:
- MAT 181 – Applied Calculus (3 cr) ** OR
- MAT 211 – Calculus I (4 cr) **

Graduation Requirements: 120 cr
GPA Needed to Declare: 2.0
Free Electives: 20-34
HELPFUL HINTS FOR ADVISING:

Semester I
MAT 181 – Applied Calculus (3 cr) OR
MAT 211 – Calculus I (4 cr)
ECO 101 – Principles of Macroeconomics
ECO 102 – Principles of Microeconomics

Economics minor available – 18-19 cr
Disclaimer: Courses may be subject to change.
ELECTRICAL ENGINEERING, B.S.

Requirements for Electrical Engineering major ≈ 74 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Engineering Core (12 cr)
- ENGR 100 – Engineering Seminar I (1 cr)
- ENGR 110 – Modeling & Simulation (3 cr)
- ENGR 120 – Programming for Engineers (3 cr)
- ENGR 200 – Engineering Seminar II (1 cr)
- ENGR 300 – Engineering Seminar III (1 cr)
- ENGR 310 – Statistical Process Control (3 cr)

Computer Engineering Requirements (14 cr)
- CMPE 220 – Computer Organization (4 cr)
- CMPE 322 – Microcontrollers & Interfaces (4 cr)
- CMPE 420 – Digital and Reconfigurable Computing (4 cr)
- CMPE 499 – Engineering Design & Development (2 cr)

Electrical Engineering Requirements (20 cr)
- ELEC 220 – Linear Circuit Analysis (4 cr)
- ELEC 300 – Foundations of Electronic Systems (4 cr)
- ELEC 310 – Signals & Systems (4 cr)
- ELEC 360 – Communications Systems (4 cr)
- ELEC, CMPE, ENGR, SWE ______________(300+ level)

Math Requirements (23 cr)
- MAT 211 – Calculus I (4 cr)
- MAT 212 – Calculus II (4 cr)
- MAT 213 – Calculus III (4 cr)
- MAT 225 – Discrete Mathematics (4 cr)
- MAT 322 – Differential Equations (3 cr)
- MAT 375 – Probability & Stats for Engineers (4 cr)

Physics Requirements (20 cr)
- PHY 205 – Intermediate Physics I (3 cr)**
  PHY 123 – Physics I Lab (1 cr)
- PHY 206 – Intermediate Physics II (3 cr)
  PHY 125 – Physics II Lab (1 cr)**
- PHY 311 – Quantum I (3 cr)
- PHY 321 – Electricity & Magnetism I (4 cr)

Graduation Requirements: 120 cr
Free Electives: 1 cr
GPA Needed to Declare: 2.0

HELPFUL HINTS FOR ADVISING:

Semester I
- ENGR 110 – Modeling
- ELEC 100 – Engineering Seminar I
- MAT 211 – Calculus I
- PHY 123 – Physics I Lab
- PHY 205 – Intermediate Physics I

Semester II
- ENGR 210 – Programming for Engineers
- MAT 212 – Calculus II (4 cr)
- PHY 125 – Physics II Lab (1 cr)
- PHY 206 – Intermediate Physics II (3 cr)

Disclaimer: Courses may be subject to change.
Requirements for English major ≈ 42 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**English Core (9 cr)**

- ENG 130 – Literary Studies for Eng. Major & Minor (3 cr)
- ENG 213 – Writing & Research About Literature (3 cr)
- ENG 460 – Senior Seminar (3 cr)

**Required Survey Courses (9 cr)**

Select one:
- ENG 233 – American Literature I (3 cr)
- OR
- ENG 234 – American Literature II (3 cr)
- OR
- ENG 236 – British Literature I (3 cr)
- OR
- ENG 237 – British Literature II (3 cr)

Select one:
- ENG 240 – Global Literature (3 cr)
- OR
- ENG 239 – Postcolonial Literature (3 cr)

**Advanced Studies – Writing (3 cr)**

Select at least one:
- ENG 224 – Introduction to Creative Writing (3 cr)
- ENG 229 – Advanced Composition (3 cr)
- ENG 238 – Technical/Professional Writing I (3 cr)
- ENG 307 – Poetry Writing (3 cr)
- ENG 308 – Fiction Writing (3 cr)
- ENG 323 – Reviewing the Arts for Publication (3 cr)
- ENG 335 – Creative Nonfiction Writing (3 cr)
- ENG 341 – Teaching Writing in the Secondary Schools (3 cr)
- ENG 420 – Selected Topics in Writing (3 cr)
- ENG 427 – Advanced Poetry Workshop (3 cr)
- ENG 428 – Advanced Fiction Workshop (3 cr)
- ENG 435 – Advanced Creative Nonfiction (3 cr)
- ENG 438 – Technical Professional Writing II (3 cr)

**Advanced Studies – Genres (3 cr)**

Select at least one:
- ENG 304 – Literary Criticism (3 cr)
- ENG 333 – Cultural Studies (3 cr)
- ENG 336 – Theories and Approaches (3 cr)
- ENG 342 – Mythology (3 cr)
- ENG 360 – Popular Genres (3 cr)
- ENG 367 – Studies in Drama (3 cr)
- ENG 368 – Studies in Fiction (3 cr)
- ENG 369 – Studies in Poetry (3 cr)
- ENG 373 – Studies in Creative Nonfiction (3 cr)
- ENG 440 – Special Topics in Genre (3 cr)

**Advanced Studies – History and Movements (3 cr)**

Select at least one:
- ENG 318 – Studies in Eng. Renaissance (3 cr)
- ENG 330 – Shakespeare (3 cr)
- ENG 337 – Romanticism (3 cr)
- ENG 344 – Studies in Single Author (3 cr)
- ENG 349 – Victorian Literature (3 cr)
- ENG 363 – Modernism (3 cr)

- ENG 364 – Postmodernism (3 cr)
- ENG 366 – History & Structure of Eng Language (3 cr)
- ENG 376 – Studies in Medieval Literature (3 cr)
- ENG 377 – The Long 18th Century (3 cr)
- ENG 380 – 19th Century Literature (3 cr)
- ENG 383 – Literature After 1900 (3 cr)
- ENG 430 – Special Topics in Lit History & Movements (3 cr)

**Advanced Studies – Identities (3 cr)**

Select at least one:
- ENG 445 – Special Topics in Identities (3 cr)
- ENG 385 – Studies in Postcolonial Lit (3 cr)
- ENG 370 – Queer Studies (3 cr)
- ENG 375 – African American Lit (3 cr)
- ENG 345 – Women’s Literature (3 cr)
- ENG 358 – Ethnic Literature (3 cr)
- ENG 359 – Native American Literature (3 cr)
- ENG 362 – Disability in Literature (3 cr)

**Advanced Studies Electives (12 cr)**

Choose 4 courses in Advanced Studies:

- ENG
- ENG
- ENG
- ENG

**#B.A. students must attain proficiency in a foreign language.**

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

F=Fall only class
S=Spring only class

**Graduation Requirements: 120 cr**

Free Electives: 33 cr
GPA Needed to Declare: 2.0

**HELPFUL HINTS FOR ADVISING:**

300-level courses should not be taken in the first 2 semesters.

Semester I ENG 130 – Literary Studies for English
Semester II ENG 213 – Writing & Research

An English minor is available – 18 cr

**Disclaimer:** Courses may be subject to change.
Requirements for English major with Secondary Cert. ≈ 72 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Psychology Requirement (3 cr)
__PSY 101 – General Psychology (3 cr) **

Math Requirements (6 cr)
__MAT except 185 (3 cr) [MAT 105 recommended] **
__MAT except 185 (3 cr) [MAT 117 recommended] **

English Core (15 cr)
__ENG 130 – Literary Studies for Eng. Major & Minor (3 cr) F
__ENG 213 – Writing & Research About Literature (3 cr) S
__ENG 366 – History & Structure of English Language (3 cr)
__ENG 426 – Teaching Adolescent Literature (3 cr)
__ENG 460 – Senior Seminar (3 cr)

Required Survey Courses (9 cr)
Select one:
__ENG 233 – American Literature I (3 cr)
OR
__ENG 236 – British Literature I (3 cr)
Select one:
__ENG 234 – American Literature II (3 cr)
OR
__ENG 237 – British Literature II (3 cr)
Select one:
__ENG 240 – Global Literature (3 cr)
OR
__ENG 239 – Postcolonial Literature (3 cr)

Advanced Studies – Writing (3 cr)
Select at least one:
__ENG 224 – Introduction to Creative Writing (3 cr)
__ENG 229 – Advanced Composition (3 cr)
__ENG 238 – Technical/Professional Writing I (3 cr)
__ENG 307 – Poetry Writing (3 cr)
__ENG 308 – Fiction Writing (3 cr)
__ENG 323 – Reviewing the Arts for Publication (3 cr)
__ENG 335 – Creative Nonfiction Writing (3 cr)
__ENG 341 – Teaching Writing in the Secondary Schools (3 cr)
__ENG 420 – Selected Topics in Writing (3 cr)
__ENG 427 – Advanced Poetry Workshop (3 cr)
__ENG 428 – Advanced Fiction Workshop (3 cr)
__ENG 435 – Advanced Creative Nonfiction (3 cr)
__ENG 438 – Technical Professional Writing II (3 cr)

Advanced Studies – Genres (3 cr)
Select at least one:
__ENG 304 – Literary Criticism (3 cr)
__ENG 333 – Cultural Studies (3 cr)
__ENG 336 – Theories and Approaches (3 cr)
__ENG 342 – Mythology (3 cr)
__ENG 360 – Popular Genres (3 cr)
__ENG 367 – Studies in Drama (3 cr)
__ENG 368 – Studies in Fiction (3 cr)
__ENG 369 – Studies in Poetry (3 cr)
__ENG 373 – Studies in Creative Nonfiction (3 cr)
__ENG 440 – Special Topics in Genre (3 cr)

Advanced Studies – History and Movements (3 cr)
Select at least one:
__ENG 318 – Studies in Eng. Renaissance (3 cr)
__ENG 330 – Shakespeare (3 cr)
__ENG 337 – Romanticism (3 cr)
__ENG 344 – Studies in Single Author (3 cr)
__ENG 349 – Victorian Literature (3 cr)
__ENG 363 – Modernism (3 cr)
__ENG 364 – Postmodernism (3 cr)
__ENG 366 – History & Structure of Eng Language (3 cr)
__ENG 376 – Studies in Medieval Literature (3 cr)
__ENG 377 – The Long 18th Century (3 cr)
__ENG 380 – 19th Century Literature (3 cr)
__ENG 383 – Literature After 1900 (3 cr)
__ENG 430 – Special Topics in Lit History & Movements (3 cr)

Advanced Studies – Identities (3 cr)
Select at least one:
__ENG 445 – Special Topics in Identities (3 cr)
__ENG 385 – Studies in Postcolonial Lit (3 cr)
__ENG 370 – Queer Studies (3 cr)
__ENG 375 – African American Lit (3 cr)
__ENG 345 – Women’s Literature (3 cr)
__ENG 358 – Ethnic Literature (3 cr)
__ENG 359 – Native American Literature (3 cr)
__ENG 362 – Disability in Literature (3 cr)

Advanced Studies Elective (3 cr)
Select one additional course in Advanced Studies:
__ENG ____________________________ (3 cr)

Professional Education Requirements (33–36)
__TCH 207 – Org. & Psych. Foundations (3 cr)
__EEC 273 – Introduction to Exceptionalities (3 cr)
__EEC 290 – Introduction to English/Language Arts Ed (3 cr)
__EEC 423 – Effective Instructional Strategies (3 cr)
__RDG 413 – Teaching Reading to ELL (3 cr)
__EDU 422 – Methods of Teaching Eng in Secondary Ed (3 cr)
__EEC 483 – Assessing Children with Exceptionalities (3 cr)
__EDU 495 – Student Teaching & Practicum (12-15 cr)

A literature course taken to satisfy the Gen. Ed. requirement does NOT double count for the English major/minor.

##B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

Students must apply for “Professional Standing” the semester before ENG 422 to be admitted to the course. Students must not schedule any classes before noon the semester they take ENG 422.

F=Fall only class  S=Spring only class
Graduation Requirements: 120 cr
Free Electives: 3 cr
GPA Needed to Declare: 3.0

HELPFUL HINTS FOR ADVISING:

300-level courses should not be taken in the first 2 semesters.

Semester I        ENG 130 – Literary Studies for English
Semester II       ENG 213 – Writing & Research

Disclaimer: Courses may be subject to change.
Requirements for English major ≈ 42 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**English Core (9 cr)**

- ENG 130 – Literary Studies for Eng. Major & Minor (3 cr)
- ENG 213 – Writing & Research About Literature (3 cr)
- ENG 460 – Senior Seminar (3 cr)

**Required Survey Courses (9 cr)**

Select one:
- ENG 233 – American Literature I (3 cr) OR
- ENG 234 – American Literature II (3 cr)
Select one:
- ENG 236 – British Literature I (3 cr) OR
- ENG 237 – British Literature II (3 cr)
Select one:
- ENG 240 – Global Literature (3 cr) OR
- ENG 239 – Postcolonial Literature (3 cr)

**Advanced Studies – Writing (12 cr)**

Select four:
- ENG 224 – Introduction to Creative Writing (3 cr)
- ENG 229 – Advanced Composition (3 cr)
- ENG 238 – Technical/Professional Writing I (3 cr)
- ENG 307 – Poetry Writing (3 cr)
- ENG 308 – Fiction Writing (3 cr)
- ENG 323 – Reviewing the Arts for Publication (3 cr)
- ENG 335 – Creative Nonfiction Writing (3 cr)
- ENG 341 – Teaching Writing in the Secondary Schools (3 cr)
- ENG 420 – Selected Topics in Writing (3 cr)
- ENG 427 – Advanced Poetry Workshop (3 cr)
- ENG 428 – Advanced Fiction Workshop (3 cr)
- ENG 435 – Advanced Creative Nonfiction (3 cr)
- ENG 438 0 Technical Professional Writing II (3 cr)

**Advanced Studies – Genres (12 cr)**

Select at least one:
- ENG 304 – Literary Criticism (3 cr)
- ENG 333 – Cultural Studies (3 cr)
- ENG 336 – Theories and Approaches (3 cr)
- ENG 342 – Mythology (3 cr)
- ENG 360 – Popular Genres (3 cr)
- ENG 367 – Studies in Drama (3 cr)
- ENG 368 – Studies in Fiction (3 cr)
- ENG 369 – Studies in Poetry (3 cr)
- ENG 373 – Studies in Creative Nonfiction (3 cr)
- ENG 440 – Special Topics in Genre (3 cr)

**Advanced Studies – History and Movements (12 cr)**

Select at least one:
- ENG 318 – Studies in Eng. Renaissance (3 cr)
- ENG 330 Shakespeare (3 cr) #
- ENG 337 – Romanticism (3 cr)
- ENG 344 – Studies in Single Author (3 cr)
- ENG 349 – Victorian Literature (3 cr)
- ENG 363 – Modernism (3 cr)
- ENG 364 – Postmodernism (3 cr)

**Advanced Studies – Identities (12 cr)**

Select at least one:
- ENG 445 – Special Topics in Identities (3 cr)
- ENG 385 – Studies in Postcolonial Lit (3 cr)
- ENG 370 – Queer Studies (3 cr)
- ENG 375 – African American Lit (3 cr)
- ENG 345 – Women’s Literature (3 cr)
- ENG 358 – Ethnic Literature (3 cr)
- ENG 359 – Native American Literature (3 cr)
- ENG 362 – Disability in Literature (3 cr)

**English Elective (3 cr)**

Choose 1 course in Advanced Studies:

- ENG _______________________________

A literature course taken to satisfy the Gen. Ed. Category B requirement does NOT double count for the English major or the English minor.

###B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

F=Fall only class
S=Spring only class

Graduation Requirements: 120 cr
Free Electives: 33 cr
GPA Needed to Declare: 2.0

**HELPFUL HINTS FOR ADVISING:**

300-level courses should not be taken in the first 2 semesters.

Semester I ENG 130 – Literary Studies for English
Semester II ENG 213 – Writing & Research

An English minor is available – 18 cr

Disclaimer: Courses may be subject to change.
Requirements for French major ≈ 36 cr
Requirements for French major with Secondary Cert. ≈ 66 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

French Core (30 cr)
- FRN 202 – Intermediate Conversation (3 cr)
- FRN 204 – Ideas and Cultures from the French (3 cr)
- FRN 211 – Intermediate French Grammar (3 cr)
- FRN 300 – Advanced French Conversation (3 cr)
- FRN 308 – Diction et Comprehension (3 cr)
- FRN 309 – Advanced French Grammar (3 cr)
- FRN 316 – Composition and Stylistics (3 cr)
- FRN 330 – Masterpieces of French Literature (3 cr)
- FRN 331 – Masterpieces of Francophone Literature (3 cr)
- FRN 340 – Genres Litteraires (3 cr)

French Electives (6 cr)
Select two, at least one at the 400-level:
- FRN 380 – Aspects De La Civilisation FranÇaise (3 cr)
- FRN 392 – French Cultural Studies Immersion (3 cr)
- FRN 400 – Seminar: Advanced Studies in French (3 cr)
- FRN 411 – Theory and Practice of Translation (3 cr)
- FRN 490 – Selected Topics in French (3 cr)

French majors and minors are strongly urged to take history, political science, and geography courses that deal with French-speaking countries.

Secondary Education Certification
- TCH 207 – Organizational and Psych Foundations (3 cr)
- TCH 251 – Elements of Middle Level Instruction (3 cr)
- EEC 273 – Introduction to Exceptionalities (3 cr)
- EEC 423 – Effective Instructional Strategies (3 cr)
- EEC 483 – Assessing Children with Exceptionalities (3 cr)
- EDU 426 – Methods of Teaching Foreign Languages (3 cr)
- EDU 495 – Student Teaching & Professional Practicum (3 cr)

Math requirement:
- MAT ____________________________ (except MAT 185)
- MAT ____________________________ (except MAT 185)

Literature requirement:
- ENG 190, ENG 243, ENG 248, OR ENG 250 (3 cr)

Optional Translation Specialization Courses
- FRN 320 – French for the Professions (3 cr)
- FRN 380 – Aspects de la Civilisation Francaise (3 cr)
- FRN 411 – Theory & Practice of Translation (3 cr)

Select one:
- FRN 400 – Special Topics in French OR
- FRN ____________________________(300+ level)

Graduation Requirements: 120 cr
Free Electives: 39 cr without Cert; 9 cr with Cert
GPA Needed to Declare: 2.0 without Cert; 3.0 with Cert

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300

Dual Certification: Students planning to teach French will find it to their advantage to work for dual certification in two modern languages: a modern language and English, or a modern language and another field. To achieve dual certification, a student must have the approval of both departments involved, follow an approved course of studies in the specialty areas, take the appropriate methods course, and complete student teaching in both fields. See the Modern Languages Department for details.

ACTFL Oral Proficiency: All French Secondary Education Certification student must pass the ACTFL Oral Proficiency Interview prior to graduation and reach an advanced low level minimum.

HELPFUL HINTS FOR ADVISING

Year I Any introductory language courses necessary.
French Certificate & Translation in French Certificate available.
French Cultural Studies Minor & French Minor available.

Disclaimer: Courses may be subject to change.
GEOENVIRONMENTAL STUDIES, B.S.

Requirements for Geoenvironmental Studies major = 52 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Required Geography-Earth Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ESS 210</td>
<td>Physical Geology</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__ESS 355</td>
<td>Meteorology</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__ESS 224</td>
<td>Soils</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__ESS 226</td>
<td>Hydrology</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 391</td>
<td>Geography Seminar</td>
<td>(3 cr)</td>
</tr>
</tbody>
</table>

Highly recommended:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>__GEO 140</td>
<td>Cultural Geography</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 101</td>
<td>World Geography</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 103</td>
<td>Geography of U.S. &amp; Canada</td>
<td>(3 cr)</td>
</tr>
</tbody>
</table>

♦ If ESS 110 has been taken, substitute ESS 212, ESS 214, or GEO 306.

♦ If ESS 111 has been taken, substitute GEO 203 or ESS 404.

Geography Electives (6 cr)

Select at least 2:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>__GEO 230</td>
<td>Economic Geography</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 244</td>
<td>Land Use</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 305</td>
<td>Geography of Europe</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 308</td>
<td>Geography of Latin America</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 310</td>
<td>Transportation Geography</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 313</td>
<td>Geography of South and Southeast Asia</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 317</td>
<td>Geography of East Asia</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 320</td>
<td>Historical Geography</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 322</td>
<td>Urban Geography</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 450</td>
<td>Geography: Geology Field Studies</td>
<td>(1-3 cr)</td>
</tr>
</tbody>
</table>

Geoenvironmental Complex Systems Electives (9 cr)

Select at least 3:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>__GEO 301</td>
<td>Introduction to Biogeography</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 306</td>
<td>Geomorphology</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 402</td>
<td>Medical Geography</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 404</td>
<td>Hydrogeology</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 405</td>
<td>Env Cons &amp; Mgt in PA</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 421</td>
<td>Environmental Law</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 444</td>
<td>Environmental Land-Use Planning</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 446</td>
<td>Water Resources Management</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 450</td>
<td>Geography-Geology Field Studies</td>
<td>(1-3 cr)</td>
</tr>
<tr>
<td>__GEO 490  or 491</td>
<td>Selected Topics in Geography (1-3 cr)</td>
<td></td>
</tr>
<tr>
<td>__ESS 404</td>
<td>Applied Meteorology &amp; Climate</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__ESS 410</td>
<td>Sedimentary Geology &amp; Paleoenv</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__ESS 413</td>
<td>Mineral and Rock Resources</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__ESS 442</td>
<td>Environmental Geology</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__ESS 451</td>
<td>Coastal Environmental Geo</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__ESS 490</td>
<td>Selected Topics in Earth Science</td>
<td>(1-3 cr)</td>
</tr>
</tbody>
</table>

Geoenvironmental Field Experience (3 cr)

A junior status (60 cr) and 2.0 overall and major average required.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>__GEO 360</td>
<td>Internship in Geography I</td>
<td>(3 cr)</td>
</tr>
</tbody>
</table>

Technique Course Electives (6 cr)

Select at least 2:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>__GEO 202</td>
<td>GIS I: Intro to Geo Information Systems</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 339</td>
<td>Remote Sensing</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 352</td>
<td>Cartography</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 363</td>
<td>GIS II: Intermediate Geo Information Syst.</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 420</td>
<td>GIS III: Advanced Geo Information Syst.</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 425</td>
<td>Image Processing</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 440</td>
<td>Field Techniques</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 441</td>
<td>Quantitative Methods</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 450</td>
<td>Geography-Geology Field Studies</td>
<td>(1-3 cr)</td>
</tr>
<tr>
<td>__GEO 463</td>
<td>App Geophys Imaging</td>
<td>(3 cr)</td>
</tr>
</tbody>
</table>

Geoenvironmental Electives (3 cr)

Select one:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ESS 212</td>
<td>Historical Geology</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__ESS 214</td>
<td>Geology of National Parks</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__ESS 220</td>
<td>Oceanography</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 203</td>
<td>Climatology</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 306</td>
<td>Geomorphology</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__GEO 397</td>
<td>Introduction to Research</td>
<td>(1-3 cr)</td>
</tr>
<tr>
<td>__GEO 450</td>
<td>Geography-Geology Field Studies</td>
<td>(1-3 cr)</td>
</tr>
<tr>
<td>__GEO 490</td>
<td>Selected Topics in Geography</td>
<td>(1-3 cr)</td>
</tr>
<tr>
<td>__Any 200-400 level course listed in the above categories not previously taken may also be used as a Geoenvironmental elective.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Biology (9-11 cr)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>__BIO 162</td>
<td>Principles of Bio: Organismal Diversity</td>
<td>(4 cr)</td>
</tr>
<tr>
<td>__BIO 145</td>
<td>Environmental Biology</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__BIO 208</td>
<td>Field Biology</td>
<td>(3 cr)</td>
</tr>
</tbody>
</table>

Chemistry/Physics (7 cr)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>__PHY 121</td>
<td>Introductory Physics I - Lecture</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__PHY 123</td>
<td>Physics I Laboratory</td>
<td>(1 cr)</td>
</tr>
<tr>
<td>__CHM 105</td>
<td>An Observational Approach</td>
<td>(3 cr)</td>
</tr>
</tbody>
</table>

Computer Science (3-4 cr)

Select one:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>__CSC 103</td>
<td>Overview of Computer Sci</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__CSC 104</td>
<td>Python Programming</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__CSC 180</td>
<td>Microcomputer Basic</td>
<td>(3 cr)</td>
</tr>
</tbody>
</table>

Mathematics (3-4 cr)

Select one:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>__MAT 117</td>
<td>Applied Stats</td>
<td>(3 cr)</td>
</tr>
<tr>
<td>__MAT 217</td>
<td>Statistics I</td>
<td>(4 cr)</td>
</tr>
</tbody>
</table>

Graduation Requirements: 120 cr

Free Electives: 11 cr

GPA Needed to Declare: 2.0

Disclaimer: Courses may be subject to change.
## GEOGRAPHY—GEOGRAPHIC INFORMATION SYSTEMS (GIS) CONCENTRATION, B.S.

Requirements for Geography, Geographic Information Systems Concentration ≈ 60

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

### Geography Core (15 cr)
- GEO 105 – Physical Geography (3 cr)
- GEO 202 – GIS I: Intro to Geographic Info Syst. (3 cr)
- GEO 230 – Economic Geography (3 cr)
- GEO 391 – Geography Seminar (3 cr)

Select one:
- GEO 322 – Urban Geography (3 cr) OR
- GEO 244 – Land Use (3 cr)

### Geographic Information Systems Concentration (24 cr)
- GEO 339 – Remote Sensing (3 cr)
- GEO 352 – Cartography (3 cr)
- GEO 363 – GIS II: Intermediate HIS (3 cr)
- GEO 420 – GIS III: Advanced GIS (3 cr)

Select two:
- GEO 425 – Image Processing (3 cr)
- GEO 440 – Field Techniques (3 cr)
- GEO 441 – Qualitative Methods (3 cr)
- GEO 463 – Applied Geophysical Imaging (3 cr)
- GEO 4____________________________ (400 level)

Select one:
- GEO 244 – Land Use (3 cr) ♦ OR
- GEO 301 – Intro Biogeography (3 cr) OR
- GEO 310 – Transport Geography (3 cr) OR
- GEO 322 – Urban Geography (3 cr) ♦ OR
- GEO 427 – Sustainability (3 cr) OR
- GEO 444 – Envir Land Use Plan (3 cr)

♦ if not taken in Geography Core.

### Geography Internship
A junior status (60 cr) and 2.0 overall and major average required.
- GEO 360, 361, 390, or 394 – Internship (3 cr)

### Social Sciences (12 cr)
- PLS 100 – U.S. Government & Politics (3 cr)
- SOC 101 – Intro to Sociology (3 cr)

Select two:
- PHL 322 – Ethical Issues & Computer Technology (3 cr)
- PLS 231 – State and Local Government (3 cr)
- PLS 271 – Introduction to Public Administration (3 cr)
- PLS 331 –Urban Politics & Administration (3 cr)
- PLS 431 – Pennsylvania Local Government (3 cr)
- SOC 220 – Social Stratification (3 cr)
- SOC 346 – City and Community (3 cr)
- SOC 363 – Population Problems (3 cr)

### Art, Computer Science, Information Systems Electives (12-15 cr)
- CSC 104 – Programming in Python (3 cr)

Select 3:
- ART 217 – Computer Design I (3 cr)

- CSC 110 – Computer Science I - Lecture (4 cr) **
- CSC 111 – Computer Science II (4 cr)
- MSC __________________________ (3-4 cr)
- MIS 142 – Business Computer Systems (3 cr)
- MIS 240 – Introduction to Programming Concepts (3 cr)
- MIS 300 – Info Technology & Business Operations (3 cr)
- MIS 355 – Database Applications (3 cr)

### Math Requirement (6+ cr)
- MAT 117 – Applied Statistics (3 cr) **

Select one:
- MAT 140A or B – College Algebra (3-4 cr) ** OR
- MAT 175 – Precalculus (3 cr) ** OR
- MAT 211 – Calculus I (4 cr) ** OR
- MAT 225 – Discrete Mathematics (4 cr) **

### English Requirement (3 cr)
- ENG 238 – Technical/Professional Writing (3 cr)

Graduation Requirements: 120 cr
Free Electives: 15 cr
GPA Needed to Declare: 2.0

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A 12-credit Geographic Information (GIS) Certificate Program also offered. See department for details.

Disclaimer: Courses may be subject to change.
Requirements for Geography major with Land Use Concentration
≈ 51 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Geography Core (15 cr)
__GEO 105 – Physical Geography (3 cr) **
__GEO 202 – GIS I: Intro to Geographic Info Syst. (3 cr)
__GEO 230 – Economic Geography (3 cr)
__GEO 391 – Geography Seminar (3 cr)
Select one:
__GEO 244 – Land Use (3 cr)
__GEO 322 – Urban Geography (3 cr)

Land Use Concentration (21 cr)
__GEO 441 – Quantitative Methods in Geography (3 cr)
__GEO 444 – Environmental Land-Use Planning (3 cr)
Select 5:
__ESS 214 – Geology of National Parks (3 cr)
__ESS 413 – Mineral and Rock Resources (3 cr)
__ESS 442 – Environmental Geology (3 cr)
__GEO 244 – Land Use (3 cr) *
__GEO 310 – Transportation Geography (3 cr)
__GEO 314 – Industrial Geography (3 cr)
__GEO 320 – Historical Geography (3 cr)
__GEO 322 – Urban Geography (3 cr) *
__GEO 326 – Political Geography (3 cr)
__GEO 339 – Remote Sensing (3 cr)

Techniques Elective (6 cr)
Select two:
__GEO 339 – Remote Sensing (3 cr)
__GEO 352 – Cartography (3 cr)
__GEO 420 – GIS III: Advanced GIS (3 cr)
__GEO 425 – Image Processing (3 cr)
__GEO 440 – Field Techniques (3 cr)
__GEO 441 – Quantitative Methods (3 cr)

Geography Field Experience (3 cr)
A junior status (60 cr) and 2.0 overall and major average required.
__GEO 360, 361, 390, or 394 – Internship (3 cr)

Political Science Requirement (9 cr)
__PLS 100 – U.S. Government & Politics (3 cr)
Select 2:
__PLS 231 – State & Local Government (3 cr) ♠
__PLS 341 – International Law & Organizations (3 cr) ♠
__PLS 431 – Pennsylvania Local Government (3 cr) ♠
__PLS _______________________________

Math & Comp Sci Requirements (6-8 cr)
__MAT 117 – Applied Statistics (3 cr) **
Select 1 course:
__CSC 103 – Overview of Computer Sci (3 cr) ** OR
__CSC 180 – Microcomputer Basics (3 cr) **
Requirements for History major ≈ 30 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

History Core (18 cr)
- HIS 105 – Historical Foundation of Global Cultures (3 cr) **
- HIS 106 – Thinking Historically in a Global Age (3 cr) **
- HIS 201 – Early History of the United States (3 cr) **
- HIS 202 – Recent History of the United States (3 cr)
- HIS 203 – Theory and Practice of History (3 cr)
- HIS 397 – Seminar in Comparative History (3 cr)

Restricted Electives (12 cr)
- HIS ______________ (American History 300+ level)
- HIS ______________ (European History 300+ level)
- HIS ______________ (Africa/Asia/Latin Am/Mid East 300+)
- HIS ______________ (Africa/Asia/Latin Am/Mid East 300+)

No Concentration (6 cr)
- HIS ______________ (300+ level)
- HIS ______________ (300+ level)

European History Requirements (12 cr)
Select 4:
- HIS 320 – Europe Middle Ages: 300 to 1270 (3 cr)
- HIS 321 – Late Medieval Europe: 1270 to 1517 (3 cr)
- HIS 325 – History of the Tsarist Russia (3 cr)
- HIS 326 – History of the U.S.S.R. (3 cr)
- HIS 330 – History of Modern Germany: 1919 to Present (3 cr)
- HIS 331 – History of Modern France: 1750 to Present (3 cr)
- HIS 332 – English History: 1066 to Present (3 cr)
- HIS 334 – Europe 1715-1815 (3 cr)
- HIS 337 – History of the Byzantine Empire (3 cr)
- HIS 348 – The History of Ancient Rome (3 cr)
- HIS 356 – History of 19th Century Europe (3 cr)
- HIS 357 – History of Holocaust (3 cr)
- HIS 359 – History of Western Political Thought (3 cr)
- HIS 361 – History of 20th Century Europe (3 cr)
- HIS 362 – Europe 1450-1715 (3 cr)
- HIS 386 – History Research Seminar (3 cr)
- HIS 387, 389, 391 – History Internship (3 cr)
- HIS 390, 394, 492, 496 – Selected Topics in History (3 cr)
- HIS 423 – Issues in 20th-Century Europe (3 cr)

American History Requirements (12 cr)
Select 4:
- HIS 301 – The West in American History (3 cr)
- HIS 302 – American Business History (3 cr)
- HIS 304 – American Diplomatic History (3 cr)
- HIS 305 – The Civil War Era (3 cr)
- HIS 307 – Contemporary U.S. History since 1945 (3 cr)
- HIS 309 – History of the American Worker (3 cr)
- HIS 314 – History of Jacksonian America (3 cr)
- HIS 318 – History of U.S. Women (3 cr)
- HIS 319 – Introduction to Public History (3 cr)
- HIS 338 – Colonial America (3 cr)
- HIS 341 – African-American History (3 cr)
- HIS 342 – U.S. Immigration and Ethnicity (3 cr)
- HIS 345 – Military History of the United States (3 cr)
- HIS 352 – The U.S. and Vietnam (3 cr)
- HIS 358 – American Environmental History (3 cr)

History, Asian & Middle Eastern History Requirements (12 cr)
Select 4:
- HIS 339 – The Central Islamic Lands, 500-1700 (3 cr)
- HIS 344 – History of the Modern Middle East (3 cr)
- HIS 350 – History of Modern Japan (3 cr)
- HIS 353 – Modern Southeast Asia (3 cr)
- HIS 354 – Traditional China (3 cr)
- HIS 355 – History of Modern China (3 cr)
- HIS 382, 383, 394, 482, 483, 496 – Selected Topics (1-3 cr)
- HIS 386 – History Research Seminar (3 cr)
- HIS 387, 389, 391 – History Internship (3 cr)
- HIS 454 – China and the Outside World (3 cr)
- HIS 385, 388, 394, 490, 496 – Selected Topics (3 cr)
- HIS 386 – History Research Seminar (3 cr)
- HIS 387, 389, 391 – History Internship (3 cr)
- HIS 402 – Revolutionary America (3 cr)
- HIS 413 – Pennsylvania History (3 cr)
- HIS 428 – Issues in Gilded Age & Progressive Era (3 cr)
- HIS 430 – U.S. Cultural History (3 cr)
- HIS 433 – Oral History (3 cr)

Public History Concentration (12 cr)
Public History Methods:
- HIS 319 – Introduction to Public History (3 cr)
Select one:
- HIS 390 – Selected Topics in History (3 cr)
- HIS 413 – Pennsylvania History (3 cr)
- HIS 430 – U.S. Cultural History (3 cr)
- HIS 433 – Oral History (3 cr)
- HIS 460 – Archives and Public History (3 cr)
- HIS 490 – Selected Topics in History (1-3 cr)

Required Internship:
- HIS 387, 389, 391 – History Internship I (3 cr)
- HIS 387, 389, 391 – History Internship II (3 cr)

Graduation Requirements: 120 cr
Free Electives: 36 cr
GPA Needed to Declare: 2.0

##B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

HELPFUL HINTS FOR ADVISING

Year 1
- HIS 105 – Historical Foundations of Global Cultures
- HIS 106 – Thinking Historically in a Global Age

History minor also available – 18 cr.

Disclaimer: Courses may be subject to change.
Human Communication Studies, B.A.##

Requirements for human communication studies major ≈ 36 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**General Education Human Communications Offerings**
- HCS 100 – Intro to Human Communication Studies (3 cr) **
- HCS 125 – Survey of Human Communications (3 cr) **

**Human Communications Core (15 cr)**
- HCS 200 – Human Communication Theory (3 cr)
- HCS 210 – Public Speaking (3 cr)
- HCS 360 – Research Methods in Communication (3 cr)
- HCS 370 – Rhetorical Criticism (3 cr)
- HCS 400 – Senior Seminar (3 cr)

- Prerequisite for most upper-level courses.

**Rhetoric and Symbolism (3 cr)**
Select at least one:
- HCS 325 – Rhetoric African-Am. Struggle & Progress (3 cr)
- HCS 345 – Environmental Communication (3 cr)
- HCS 352 – Argumentation & Debate (3 cr)
- HCS 356 – Persuasion (3 cr)
- HCS 363 – Political Rhetoric (3 cr)
- HCS 365 – Language and Meaning (3 cr)
- HCS 375 – Special Topics in Rhetoric and Symbolism (3 cr)

**Organizational Communication (3 cr)**
Select at least one:
- HCS 230 – Small Group Communication (3 cr)
- HCS 260 – Computer-Mediated Communication (3 cr)
- HCS 350 – Theories of Organizational Communication (3 cr)
- HCS 351 – Special Topics Organizational Comm (3 cr)
- HCS 372 – Communication for Training & Instruction (3 cr)
- HCS 381 – Profess. Comm & Multi-media Presentation (3 cr)

**Cultural Perspectives (3 cr)**
Select at least one:
- HCS 270 – Intergroup/Intercultural Communication (3 cr)
- HCS 310 – African-American Communication (3 cr)
- HCS 315 – Asian-American Communication (3 cr)
- HCS 330 – Special Topics in Cultural Perspectives (3 cr)
- HCS 335 – Popular Culture and Gender Construction (3 cr)
- HCS 340 – Gender and Communication (3 cr)
- HCS 410 – Feminist Perspectives on Comm. Theory (3 cr)

**Interpersonal Communication (3 cr)**
Select at least one:
- HCS 220 – Nonverbal Communication (3 cr)
- HCS 225 – Communication and Sport (3 cr)
- HCS 250 – Interpersonal Communication (3 cr)
- HCS 265 – Interviewing (3 cr)
- HCS 333 – Communicating Identity (3 cr)
- HCS 349 – Special Topics in Interpersonal Comm. (3 cr)
- HCS 385 – Resolving Conflict through Communication (3 cr)
- HCS 430 – Advanced Interpersonal Communication (3 cr)

**Free Human Communications Electives (9 cr)**
Select 3 from Rhetoric and Symbolism, Organizational Communication, Cultural Perspectives, and/or Interpersonal Communication:
- HCS ______________________________
- HCS ______________________________
- HCS ______________________________

**Recommended Internship**
Department permission required
- HCS 391 – Internship I (3 cr)
- HCS 392 – Internship II (3 cr)
- HCS 393 – Internship III (3 cr)

Graduation Requirements: 120 cr
Free Electives: 39 cr
GPA Needed to Declare: 2.0

##B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

**HELPFUL HINTS FOR ADVISING**

Year 1  
HCS 100 – Intro to Human Communication Studies
HCS 125 – Survey of Human Communication Studies (prerequisite for HCS 200)

 Majors must select at least four HCS courses at 300 level or above.

Human Communication Studies Minor available – 18 cr.

Disclaimer: Courses may be subject to change.
INTERDISCIPLINARY ARTS, B.A.##

Requirements for Interdisciplinary Arts major ≈ 42 cr

General Education requirements not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Interdisciplinary Arts Core
__IAP 111 – Introduction to Interdisciplinary Arts (3 cr) **
Select three (one to satisfy each Arts Concentration):
__ART 101 – Art Appreciation (3 cr)
__COM 111 – Intro to Mass Communication (3 cr)
__ENG 243, 248, or 350 – English Literature (3 cr)
__MUS 121 – Intro to Music (3 cr)
__THE 121 – Intro to Theater (3 cr)

Curriculum Track (42 cr)
Interdisciplinary Arts majors choose a primary concentration consisting of 6 courses (18 cr) and two secondary concentrations of 4 courses each (12 cr each). The primary concentration and at least one of the secondary concentrations must be in the arts, although one of the secondary concentrations can be in a discipline outside of the arts. Popular concentrations include communications, dance, art, English, music and theater.

In the curriculum track, majors are also required to take one course in each of the following four areas: History and Culture, Theory and Criticism, Arts Praxis, and Professional Skills. See My Degree Audit for full list.

Primary Concentration (18 cr)
__ _________________________________ (300+ level)

Secondary Concentration I (12 cr)
__ _________________________________ (300+ level)

Secondary Concentration II (12 cr)
__ _________________________________ (300+ level)

Senior Capstone (3 cr)
__IAP 449 – Interdisciplinary Arts Senior Thesis (3 cr) OR
__IAP 451 – Interdisciplinary Arts Showcase (3 cr) OR
__IAP 452 – Interdisciplinary Arts Internship (3 cr) OR
__IAP 453 – Interdisciplinary Arts Internship (3 cr)

Graduation Requirements: 120 cr
Free Electives: 33 cr
GPA Needed to Declare: 2.0

##B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

Disclaimer: Courses may be subject to change.
# Requirements for International Studies major

- **42 cr**

General Education requirements not listed here. Courses marked with the double asterisk ** may count as general education requirements.

### International Studies (6 cr)
- INT 200 – Intro to International Studies (3 cr)
- INT 300 – International Studies Seminar (3 cr)

### Requirements for Fall 2018 General Education (12 cr)
- HIS 105 – Historical Foundation of Global Cultures (3 cr) **
- HIS 106 – Thinking Historically in a Global Age (3 cr) **
- PLS 141 – World Politics (3 cr) **

Select one:
- ANT 111 – Cultural Anthropology (3 cr) ** OR
- GEO 101 – World Geography (3 cr) **

*ECO 113 required for Global Business Concentration

### Foreign Language Requirement (9 cr)

- __________________________ (200+ level)
- __________________________ (200+ level)
- __________________________ (200+ level)

*9 credit hours at the 200-level or higher in Arabic, Chinese, French, German, or Spanish. 9 credit hours at any level for other languages.

### Study Abroad or Internship Requirement (3 cr)

Select one:
- Study Abroad ______________ OR
- Internship _______________

Students must select two concentrations: 1) Global Perspectives concentration 2) Area Studies concentration.

### Global Perspectives Concentration (12 cr)

Choose either Comparative Culture, Political Relations, or Business-Economics:

- __________________________
- __________________________ (300+ level)
- __________________________ (300+ level)

*courses must come from at least 2 different disciplines; 6 credits at 300-level or higher

### Area Studies Concentration (12 cr)

Choose either Africa-Middle East, Asia, Europe, or Latin America-Caribbean:

- __________________________
- __________________________ (300+ level)
- __________________________ (300+ level)

*courses must come from at least 2 different disciplines; 6 credits at 300-level or higher

Class list for concentrations available at https://www.ship.edu/ism/is_major_effective_2018_19_ay/ or through My Degree Audit.

Graduation Requirements: 120 cr
Free Electives: 33 cr
GPA Needed to Declare: 2.0

### International Studies Minor also available – 21 cr.

Disclaimer: Courses may be subject to change.
Requirements for mathematics major ≈ 50 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Students must take all courses. Beyond the core courses, students must either (a) complete a concentration, or (b) take at least 5 MAT courses at the 300 level or above, of which at least 2 are at the 400 level, and do one of the following: complete a minor, complete a second major, or take 3 allied electives*, at least 1 of which must be a non-MAT course.

Mathematics Core (30 cr)
- MAT 185 – First Year Mathematics Seminar (3 cr)
- MAT 211 – Calculus I (4 cr) **
- MAT 212 – Calculus II (4 cr) **
- MAT 213 – Calculus III (4 cr)
- MAT 217 – Statistics I (4 cr)
- MAT 225 – Discrete Mathematics (4 cr) **
- MAT 318 – Elementary Linear Algebra (3 cr)
- MAT 320 – Intro to Abstract Algebra (3 cr)
- MAT 441 – Real Analysis I (3 cr)

Required Computer Science (3-4 cr)
Select one:
- CSC 104 – Programming in Python (3 cr) ** OR
- CSC 180 – Microcomputer Basic (3 cr) ** OR
- CSC 110 – Computer Science I (4 cr) **

Applied Mathematics Concentration
- MAT 332 – Differential Equations (3 cr)
- MAT 326 – Mathematical Modeling (3 cr)
- MAT _________________________ (300 + level)
- MAT _________________________ (300 + level)
Select one:
- MAT 410 – Numerical Analysis (3 cr) OR
- MAT 422 – Partial Differential Equations (3 cr) OR
- MAT 476 – Probability (3 cr) OR
- MAT 491 – Topics in Applied Mathematics (3 cr)

Either complete a minor, complete a second major, or choose three allied electives numbered 300 or above from ACC, BIO, CHM, CSC, CMPE, ECO, ESS, FIN, MAT, MIS, PHY, SCM, or SWE:
- __________________________ (300+ level)
- __________________________ (300+ level)
- __________________________ (300+ level)

Statistics Concentration
- MAT 317 – Statistics II (3 cr)
- MAT 476 – Probability (3 cr)
- MAT 486 – Mathematical Statistics (3 cr)
- MAT _________________________ (300+ level)
- MAT _________________________ (300+ level)

Either complete a minor, complete a second major, or choose three allied electives numbered 300 or above from ACC, BIO, CHM, CSC, CMPE, ECO, ESS, FIN, MAT, MIS, PHY, SCM, or SWE:
- __________________________ (300+ level)
- __________________________ (300+ level)
- __________________________ (300+ level)

Custom Concentration (with advisement)
- MAT __________________________ (300+ level)
- MAT __________________________ (300+ level)
- MAT __________________________ (300+ level)
- MAT __________________________ (400 level)
- MAT __________________________ (400 level)

Either complete a minor, complete a second major, or choose three allied electives numbered 300 or above from ACC, BIO, CHM, CSC, CMPE, ECO, ESS, FIN, MAT, MIS, PHY, SCM, or SWE:
- __________________________ (300+ level)
- __________________________ (300+ level)
- __________________________ (300+ level)

Without Concentration
- MAT __________________________ (300+ level)
- MAT __________________________ (300+ level)
- MAT __________________________ (400 level)
- MAT __________________________ (400 level)

Either complete a minor, complete a second major, or choose three allied courses numbered 300 or above from ACC, BIO, CHM, CSC, CMPE, ECO, ESS, FIN, MAT, MIS, PHY, SCM, or SWE:
- __________________________ (300+ level)
- __________________________ (300+ level)
- __________________________ (300+ level)

Graduation Requirements: 120 cr
Free Electives: 25 cr
GPA Needed to Declare: 2.0

HELPFUL HINTS FOR ADVISING

Semester I
- MAT 185 – First Year Math Seminar
- MAT 211 – Calculus I

Semester II
- MAT 212 – Calculus II
- MAT 225 – Discrete Mathematics

Mathematics minor also available – 18-21 cr.

Disclaimer: Courses may be subject to change.
Mathematics—Secondary Education Certification, B.S.

Requirements for Mathematics Secondary Education Certification ≈ 74 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Mathematics Core (42 cr)
- MAT 185 – First Year Mathematics Seminar (3 cr)
- MAT 211 – Calculus I (4 cr) **
- MAT 212 – Calculus II (4 cr) **
- MAT 213 – Calculus III (4 cr)
- MAT 217 – Statistics I (4 cr)
- MAT 225 – Discrete Mathematics (4 cr) **
- MAT 318 – Elementary Linear Algebra (3 cr)
- MAT 320 – Intro to Abstract Algebra (3 cr)
- MAT 441 – Real Analysis I (3 cr)

Required Computer Science (3-4 cr)
- CSC 104 – Programming in Python (3 cr) ** OR
- CSC 180 – Microcomputer Basic (3 cr) ** OR
- CSC 110 – Computer Science I (4 cr) **

Secondary Education Concentration
- MAT 326 – Mathematical Modeling (3 cr)
- MAT 333 – Geometry (3 cr) F, odd
- MAT 400 – History of Mathematics (3 cr) F, even
- MAT ________________________(400 level)

Professional Education Requirements (36 cr)
- TCH 207 – Org. & Psych. Foundations (3 cr)
- EEC 273 – Introduction to Exceptionalities (3 cr)
- EEC 423 – Effective Instructional Strategies (3 cr)
- RDG 413 – Teaching Reading to ELL (3 cr)
- EEC 483 – Assessing Children with Exceptionalities (3 cr)
- EDU 371 – Technology in the Mathematics Classroom (3 cr)
- EDU 434 – Teaching of Mathematics I (3 cr)
- EDU 435 – Teaching of Mathematics II (3 cr)
- EDU 495 – Student Teaching & Practicum (12 cr)

Optional Special Education Certification (21 cr)
Take the following in addition to the courses above:
- EEC 280 – Best Practices in Collaboration (3 cr)
- EEC 320 – Interventions for Comm. Impairments (3 cr)
- EEC 325 – Interventions for Social, Emotional, Behav. (3 cr)
- EEC 330 – Teaching Students with Exceptionalities (3 cr)
- EEC 335 – Interventions for Cognitive or Physical (3 cr)
- EEC 447 – Special Education Processes (3 cr)
- EEC 546 – Transition for Students w/ Disabilities (3 cr)

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 cr.

Graduation Requirements: 120+ cr
Free Electives: 1 cr
GPA Needed to Declare: 3.0

HELPFUL HINTS FOR ADVISING

Semester I
MAT 185 – First Year Mathematics Seminar
MAT 211 – Calculus I

Semester II
MAT 212 – Calculus II
MAT 225 – Discrete Mathematics

Disclaimer: Courses may be subject to change.
MECHANICAL ENGINEERING, B.S.

Requirements for Mechanical Engineering major ≈ 82 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Math Requirements (19 cr.)
- MAT 211 – Calculus I (4 cr) **
- MAT 212 – Calculus II (4 cr) **
- MAT 318 – Elementary Linear Algebra (3 cr)
- MAT 375 – Probability & Statistics for Engineers (3 cr)
- MAT 322 – Differential Equations (3 cr)

Science Requirements (20 cr)
- CHM 121 – Chemical Bonding (3 cr) **
- CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)
- CHM 122 – Chemical Dynamics (3 cr)
- CHM 126 – Lab IIB-Equilibrium & Instrumentation (1 cr)
- PHY 205 – Intermediate Physics I Lecture (3 cr) **
- PHY 123 – Physics I Lab (1 cr)
- PHY 206 – Intermediate Physics II Lecture (3 cr) **
- PHY 125 – Physics II Lab (1 cr)
- PHY 331 – Mechanics I (4 cr)

Engineering Core (12 cr)
- ENGR 100 – Engineering Seminar I (1 cr)
- ENGR 110 – Modeling and Simulation (3 cr)
- ENGR 120 – Programming for Engineers (3 cr)
- ENGR 200 – Engineering Seminar II (1 cr)
- ENGR 300 – Engineering Seminar III (1 cr)
- ENGR 310 – Statistical Process Control (3 cr)

Mechanical Engineering Requirements (35 cr)
- CMPE 499 – Engineering Design & Development (2 cr)
- ELEC 220 – Linear Circuit Analysis (3 cr)
- MECH 200 – Statics (4 cr)
- MECH 210 – Dynamics (4 cr)
- MECH 220 – Fluids (4 cr)
- MECH 230 – Mechanics of Materials (4 cr)
- MECH 300 – Engineering Materials (4 cr)
- MECH 310 – Manufacturing Processes (4 cr)
- MECH 320 – Machine Dynamics (4 cr)
- MECH 410 – Mechanics of Thermodynamics (4 cr)
- MECH 420 – Machine Design (4 cr)
- MECH 450 – Thermal System Design (4 cr)

Engineering Elective (3-4 cr)
Select one:
- CIV, COMPE, ELEC, ENGR, MECH _______ (200+ level)
- MAT 213 – Calculus III (4 cr)
- MAT 410 – Numerical Analysis (4 cr)

Graduation Requirements: 120+ cr
Free Electives: 0 cr
GPA Needed to Declare: 2.0

HELPFUL HINTS FOR ADVISING

Semester I
- MAT 211 – Calculus I
- PHY 205/123 – Physics I Lecture & Lab
- ENGR 100 – Seminar I
- ENGR 110 – Modeling & Simulation

Semester II
- MAT 212 – Calculus II
- PHY 206/125 – Physics II Lecture & Lab
- ENGR 120 – Programming for Engineers

Disclaimer: Courses may be subject to change.
Requirements for Physics major \( \approx 71-72 \) cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**Physics Core Requirements (32 cr)**

- **PHY 107 – Seminar for Physics Majors (2 cr)**
- **PHY 221 – Fundamentals of Physics I (5 cr)** **
- **PHY 222 – Fundamentals of Physics II (5 cr)**
- **PHY 301 – Mathematical & Numerical Techniques (4 cr)**
- **PHY 311 – Quantum I (4 cr)**
- **PHY 321 – Electricity and Magnetism I (4 cr)**
- **PHY 331 – Mechanics I (4 cr)**
- **PHY 341 – Classical and Statistical Thermodynamics (4 cr)**

**Math Requirements (15 cr)**

- **MAT 211 – Calculus I (4 cr)** **
- **MAT 212 – Calculus II (4 cr)** **
- **MAT 213 – Calculus III (4 cr)**
- **MAT 322 – Differential Equations (3 cr)**

**Chemistry Requirement (4 cr)**

- **CHM 121 – Chemical Bonding (3 cr)** **
- **CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)**

**Computer Science/Engineering Requirement (3-4 cr)**

Select one:
- **CSC 110 – Computer Science I-Lecture (4 cr)** **
- **ENGR 120 – Programming for Engineers (3 cr)**

**General Physics Concentration (29 cr)**

Physics Electives (9-12 cr):

- **PHY _____________________(300 + level)**
- **PHY _____________________(300 + level)**
- **PHY _____________________(300 + level)**

Free Electives (20 cr):

12 credits must be taken at the 300 level or higher. A minor in another discipline is strongly encouraged.

**Advanced Physics Concentration (28-32 cr)**

- **CHM 122 – Chemical Dynamics (3 cr)**
- **CHM 126 – Laboratory IIB (1 cr)**
- **PHY 411 – Quantum II (3 cr)**
- **PHY 421 – Electricity & Magnetism II (3 cr)**
- **PHY 431 – Mechanics II (3 cr)**

Select one:

- **PHY 397 – Intro to Research (3 cr)** OR
- **PHY 389 – Research II (3 cr)**

**Computational Physics Concentration (25-26 cr)**

- **MAT 318 – Elementary Linear Algebra (3 cr)**
- **MAT 410 – Numerical Analysis (3 cr)**
- **CSC 111 – Computer Science II (4 cr)**
- **CMPE 322 – Microcontrollers & Interfaces (4 cr)**
- **PHY 471 – Computational Physics (4 cr)**
- **PHY _____________________(300+ level)**
- **PHY _____________________(300+ level)**

Select one:

- **CMPE 220 – Computer Organization (4 cr)** OR
- **CSC 371 – Database Management Systems (4 cr)**

**Graduation Requirements: 120 cr**

Free Electives: 3-4 cr

GPA Needed to Declare: 2.0

**HELPFUL HINTS FOR ADVISING**

Semester I

- MAT 211 – Calculus I
- PHY 107 – Seminar for Physics Majors

Semester II

- MAT 212 – Calculus II
- PHY 221 – Fundamentals of Physics I

Students are recommended to complete 1 semester of Calculus before starting the intermediate physics sequence.

Chemistry should be taken in the junior year. Exceptional students may take it earlier.

Computer Science I should be taken early in the program.

Physics minor is available – 26 cr.

Disclaimer: Courses may be subject to change.
POLITICAL SCIENCE, B.A.##

Requirements for Political Science major ≈ 36 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

General Education Recommendations:
__MAT 117 – Applied Statistics (3 cr)**  
__SOC 101 – Introduction to Sociology ** (3 cr)
Select one:
__ECO 101 – Principles of Macroeconomics (3 cr) ** OR  
__ECO 102 – Principles of Microeconomics (3 cr) ** OR  
__ECO 113 – Principles of Economics (4 cr)**
Select one:
__GEO 101 – World Geography (3 cr)** OR  
__GEO 103 – Geography of the U.S. & Canada ** (3 cr)

Political Science Core (21 cr)
__PLS 100 – U.S. Government & Politics (3 cr)**  
__PLS 141 – World Politics (3 cr)**  
__PLS 201 – Foundations of Political Science (3 cr)  
__PLS 202 – Applications in Public Affairs (3 cr)  
__PLS 300 – Advanced American Government (3 cr)  
__PLS 301 – Political Science Research Methods (3 cr)  
__PLS 399 – Senior Seminar (3 cr)

Experiential Learning (6 cr)
Select two:
__PLS 251 – Introduction to Comparative Politics (3 cr)  
__PLS 252 – Costa Rica: Politics, Economy & Society (3 cr)  
__PLS 307 – Applied Research in Political Science (1-3 cr)  
__PLS 313 – The Judicial Process (3 cr)  
__PLS 323 – Campaigns, Elections & Political Parties (3 cr)  
__PLS 333 – Applications in State & Local Public Policy (3 cr)  
__PLS 347 – Applied Diplomacy (3 cr)  
__PLS 348 – Applied Diplomacy (3 cr)  
__PLS 357 – Comparative Revolutions (3 cr)  
__PLS 358 – European Political Economy & Security (3 cr)  
__PLS 359 – European Political Integration & Identity (3 cr)  
__PLS 395 – Internship I (3 cr)  
Any Study Abroad course in any discipline.

In addition to the required core and experiential learning, students need to take courses in three other applied competency areas (see below). To meet this requirement, students need 15 credits in oral communication, written communication, and problem solving.

Oral Communication (3 cr):
Select at least one:
__PLS 252 – Costa Rica: Politics, Economy & Society (3 cr)  
__PLS 311 – The Legislative Process (3 cr)  
__PLS 313 – The Judicial Process (3 cr)  
__PLS 324 – Women in American Politics (3 cr)  
__PLS 347 – Applied Diplomacy (3 cr)  
__PLS 348 – Applied Diplomacy (3 cr)  
__PLS 357 – Comparative Revolutions (3 cr)  
__PLS 361 – Political Theory from Ancient Times-19th C (3 cr)  
__PLS 373 – Public Financial Administration (3 cr)

Written Communication (3 cr):
Select at least one:
__PLS 231 – State and Local Government (3 cr)
__PLS 307 – Applied Research in Political Science (1-3 cr)  
__PLS 312 – The American Presidency (3 cr)  
__PLS 321 – Public Opinion and Political Media (3 cr)  
__PLS 322 – Interest Groups in American Society (3 cr)  
__PLS 324 – Women in American Politics (3 cr)  
__PLS 325 – African American Politics (3 cr)  
__PLS 341 – International Law & Organization (3 cr)  
__PLS 351 – European Politics (3 cr)  
__PLS 356 – Politics of Developing Regions (3 cr)  
__PLS 363 – American Political Thought (3 cr)  
__PLS 365 – The Federal System (3 cr)  
__PLS 366 – First Amendment Freedoms (3 cr)  
__PLS 367 – Criminal Law & Equal Protections (3 cr)  
__PLS 371 – Public Management (3 cr)  
__PLS 372 – Public Personnel Administration (3 cr)  
__PLS 381 – Principles of Labor Relations (3 cr)

Problem Solving (3 cr):
Select at least one:
__PLS 271 – Intro to Public Administration (3 cr)  
__PLS 325 – African American Politics (3 cr)  
__PLS 331 – Urban Politics & Administration (3 cr)  
__PLS 342 – American Foreign Policy (3 cr)  
__PLS 343 – Global Economic and Political Conflict (3 cr)  
__PLS 351 – European Politics (3 cr)  
__PLS 356 – Politics of Developing Regions (3 cr)  
__PLS 361 – Political Theory from Ancient Times-19th C (3 cr)  
__PLS 362 – Contemporary Political Ideologies (3 cr)  
__PLS 365 – The Federal System (3 cr)  
__PLS 366 – First Amendment Freedoms (3 cr)  
__PLS 367 – Criminal Law & Equal Protections. (3 cr)  
__PLS 374 – Public Service Ethics (3 cr)

Students are required to obtain a minor, certificate, or select a 12 credit hour concentration in another department.

Graduation Requirements: 120 cr
Free Electives: 39 cr
GPA Needed to Declare: 2.0

##B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

Disclaimer: Courses may be subject to change.
Requirements for Political Science major with International Concentration ≈ 36 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

General Education Recommendations:
- MAT 117 – Applied Statistics (3 cr) **
- SOC 101 – Introduction to Sociology ** (3 cr)
Select one:
- ECO 101 – Principles of Macroeconomics (3 cr) ** OR
- ECO 102 – Principles of Microeconomics (3 cr) ** OR
- ECO 113 – Principles of Economics (4 cr) **
Select one:
- GEO 101 – World Geography (3 cr) ** OR
- GEO 103 – Geography of the U.S. & Canada ** (3 cr)

Political Science Core (21 cr)
- PLS 100 – U.S. Government & Politics (3 cr) **
- PLS 141 – World Politics (3 cr) **
- PLS 201 – Foundations of Political Science (3 cr)
- PLS 202 – Applications in Public Affairs (3 cr)
- PLS 251 – Introduction to Comparative Politics (3 cr)
- PLS 301 – Political Science Research Methods (3 cr)
- PLS 341 – International Law & Organization (3 cr)
- PLS 399 – Senior Seminar (3 cr)

Experiential Learning (6 cr)
Select two:
- PLS 251 – Introduction to Comparative Politics (3 cr)
- PLS 252 – Costa Rica: Politics, Economy & Society (3 cr)
- PLS 307 – Applied Research in Political Science (1-3 cr)
- PLS 313 – The Judicial Process (3 cr)
- PLS 323 – Campaigns, Elections & Political Parties (3 cr)
- PLS 333 – Applications in State & Local Public Policy (3 cr)
- PLS 347 – Applied Diplomacy (3 cr)
- PLS 348 – Applied Diplomacy (3 cr)
- PLS 357 – Comparative Revolutions (3 cr)
- PLS 358 – European Political Economy & Security (3 cr)
- PLS 359 – European Political Integration & Identity (3 cr)
- PLS 395 – Internship I (3 cr)
- Any Study Abroad course in any discipline.

International Concentration Electives (12 cr)
Select four:
- PLS 252 – Costa Rica: Politics, Economy & Society (3 cr)
- PLS 307 – Applied Research in Political Science (1-3 cr)
- PLS 342 – American Foreign Policy (3 cr)
- PLS 343 – Global Economic & Political Conflict (3 cr)
- PLS 347 – Applied Diplomacy (3 cr)
- PLS 348 – Applied Diplomacy (3 cr)
- PLS 351 – European Politics (3 cr)
- PLS 356 – Politics of Developing Regions (3 cr)
- PLS 357 – Comparative Revolutions (3 cr)
- PLS 358 – European Political Economy & Security (3 cr)
- PLS 359 – European Political Integration & Identity (3 cr)
- PLS 394 – Selected Topics in International Politics (3 cr)

Graduation Requirements: 120 cr
Free Electives: 39 cr
GPA Needed to Declare: 2.0

###B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

A student may count a maximum of six internship credits toward the major. Additional internship credit hours can be used as credits applied toward graduation.

Disclaimer: Courses may be subject to change.
Requirements for Psychology major = 42 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

General Education Psychology Requirement (3 cr)
__PSY 101 – General Psychology (3 cr) **

Psychology Core (27 cr)
Scientific Methods:
__PSY 105 – Research Design & Statistics I (3 cr)
__PSY 205 – Research Design & Statistics II (3 cr)
__PSY 301 – Experimental Psychology (3 cr)

Select one from each category below:
Developmental:
__PSY 265 – Childhood & Adolescence (3 cr) OR
__PSY 352 – Adulthood & Aging (3 cr)

Social/Personality:
__PSY 240 – Psychology of Personality (3 cr) OR
__PSY 270 – Social Psychology (3 cr)

Abnormal:
__PSY 330 – Abnormal Psychology (3 cr) OR
__PSY 355 – Psychology of the Exceptional Child (3 cr)

Neuroscience:
__PSY 320 – Behavioral Neuroscience (3 cr) OR
__PSY 323 – Sensation & Perception (3 cr)

Learning/Behavioral:
__PSY 235 – Conditioning and Learning (3 cr) OR
__PSY 383 – Children’s Understanding Social World (3 cr)

Cognition/S&P:
__PSY 323 – Sensation and Perception (3 cr) OR
__PSY 325 – Psychology of Human Cognition (3 cr)

Psychology Electives (12 cr)
Select at least two from each category below:
Ethical & Social Responsibility in a Diverse World:
__PSY 315 – Psych of Prejudice & Minority Experience (3 cr)
__PSY 350 – Psychology of Sustainability (3 cr)
__PSY 365 – Multicultural Psychology (3 cr)
__PSY 410 – Psychology and Women (3 cr)
__PSY 420 – Health Psychology (3 cr)
__PSY 447 – Multicultural Health Psychology (3 cr)
__PSY 470 – Legal Psychology (3 cr)

Professional Development:
__PSY 311 – Applied Behavior Analysis (3 cr)
__PSY 335 – Psychology of Social Influence (3 cr)
__PSY 340 – Introduction to Clinical Psychology (3 cr)
__PSY 361 – Psychology of Group Interaction (3 cr)
__PSY 384 – Psychology of Person-to-Person Interaction (3 cr)
__PSY 432 – Psychology of Computers & the Internet (3 cr)
__PSY 435 – Psychopharmacology (3 cr)
__PSY 445 – Psychology of Thinking (3 cr)
__PSY 450 – Crisis Intervention (3 cr)
__PSY 475 – Industrial and Organizational Psychology (3 cr)
__PSY 485 – Tests and Measurements (3 cr)

Psychology Capstone (3 cr)
Select one:
__PSY 374, 375 – Advanced Research in Psychology (3 cr)
__PSY 379 – Capstone Seminar in Psychology (3 cr)

Graduation Requirements: 120 cr
Free Electives: 33 cr
GPA Needed to Declare: 2.3

The remaining credits toward your 120 total should be comprised of a minor. Minors are 18-21 credits. Other courses of interest outside the major to broaden your higher educational experiences, and additional psychology courses.

#B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

Internship – Up to 6 credits can count toward an internship; 3 credits can count toward the psychology major.

Students can take PSY 385 Internship I, or both PSY 385 and PSY 386 Internship II. If your internship involves one-to-one confidential and personal interaction with clients, you must take PSY 384 (Person to Person Interaction) prior to your internship. Likewise, if it involves group interaction, you must take PSY 361 (Group Interaction) prior to your internship. If your internship will involve interaction with children, you must have taken a child psychology or child development course prior to your internship. Comparable training may qualify. Please discuss your preparation with your agency, faculty internship coordinator, or the department internship coordinator.

HELPFUL HINTS FOR ADVISING:

Year I
PSY 101 – General Psychology
PSY 105 – Research Design & Statistics I

Year II
PSY 205 – Research Design & Statistics II
Begin Foundation Courses

Year III
PSY 301 – Experimental Psychology

Psychology minor available – 18 cr

Disclaimer: Courses may be subject to change.
Requirements for Public Administration major ≈ 42 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**Political Science Core (30 cr)**
- PLS 100 – U.S. Government and Politics (3 cr) **
- PLS 202 – Applications in Public Affairs (3 cr)
- PLS 231 – State and Local Government (3 cr)
- PLS 271 – Introduction to Public Administration (3 cr)
- PLS 300 – Advanced American Gov’t & Public Policy (3 cr)
- PLS 301 – Political Science Research Methods (3 cr)
- PLS 302 – Public Policy Analysis (3 cr)
- PLS 371 – Public Management (3 cr)
- PLS 372 – Public Personnel Administration (3 cr)
- PLS 373 – Public Financial Administration (3 cr)

**Public Administration Electives (6 cr)**
Select 2 of the following:
- PLS 307 – Applied Research in Political Science (1-3 cr)
- PLS 331 – Urban Politics & Administration (3 cr)
- PLS 332 – Federal-State-Local Relations (3 cr)
- PLS 333 – Applications in State & Local Public Policy (3 cr)
- PLS 365 – Constitutional Law: The Federal System (3 cr)
- PLS 374 – Public Service Ethics (3 cr)
- PLS 381 – Principles of Labor Relations (3 cr)
- PLS 389 – Selected Topics in Public Administration (3 cr)
- PLS 395 – Internship I (3 cr)
- PLS 396 – Internship II (3 cr)
- PLS 397 – Internship III (3-6 cr)
- PLS 431 – Pennsylvania Local Government (3 cr)

**Political Science Elective (3 cr)**
- PLS _______________________________

**Economics Requirements (6 cr)**
Select one pair:
- ECO 101 – Principles of Macroeconomics (3 cr) ** AND
- ECO 102 – Principles of Microeconomics (3 cr) **
OR
- ECO 113 – Principles of Economics (4 cr) ** AND
- ECO _____________________________(at least 200 level)

**Sociology Requirements (6 cr)**
- SOC 101 – Introduction to Sociology (3 cr) **
Select one:
- SOC 241 – Contemporary Social Problems (3 cr)
- SOC 243 – Minority Groups (3 cr)
- SOC 258 – Women’s Roles and Status (3 cr)
- SOC 346 – City and Community (3 cr)
- SOC 351 – Race Relations (3 cr)
- SOC 354 – Social Movements & Social Change (3 cr)
- SOC 363 – Population Problems (3 cr)
- SOC 365 – Elites in Society (3 cr)
- SOC 425 – Sociology of Law (3 cr)

**Mathematics Requirement (4 cr)**
- MAT 117 – Applied Statistics (3 cr) **

Graduation Requirements: 120 cr
Free Electives: 33 cr
GPA Needed to Declare: 2.0

##B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

**Internship** - The department strongly encourages students to complete an internship. To qualify for an internship, a student must have a 2.0 overall QPA and a 2.3 QPA in the public administration major. Students must have completed the following courses to be eligible for an internship: PLS 100, PLS 201, PLS 231, PLS 271, PLS 300, and PLS 301. A student can count a maximum of six internship credits toward the major.

Public Administration minor available – 18 cr

Disclaimer: Courses may be subject to change.
Sociology Core (21 cr)
SOC 101 – Introduction to Sociology (3 cr) **
SOC 201 – Sociological Practice (3 cr)
SOC 220 – Social Stratification (3 cr)
SOC 380 – Classical Social Theory (3 cr)
SOC 385 – Introduction to Social Research (3 cr)
SOC 386 – Data Collection and Analysis (3 cr)
SOC 415 – Senior Seminar (3 cr)

Sociology Electives (15 cr)
SOC ____________
SOC ____________
SOC ____________
SOC ____________

Allied Fields Requirements (15 cr)
ANT 111 – Cultural Anthropology (3 cr) **
MAT 117 – Applied Statistics (3 cr) **
PLS 100 – U.S. Government & Politics (3 cr) **
PHL 101, 102 or 105 (3 cr) **
Select one:
PSY 101 – General Psychology (3 cr) ** OR
GEO 103 – Geography of the U.S. & Canada (3 cr)

Possible special interest areas:
Cross Cultural Anthropology
ANT 111 – Cultural Anthropology (3 cr) **
ANT 211 – Comparative Cultures (3 cr)
ANT 312 – Comparative Marriage & Family (3 cr)
ANT 351 – Peoples & Cultures of Europe (3 cr)

Archaeology
ANT 150 – Introduction to Archaeology (3 cr)
ANT 330 – Mammoth Hunters & Mound builders (3 cr)
ANT 360 – Aztec & Maya Archaeology (3 cr)

Culture & Social Change
SOC 370 – Sociology of the Arts (3 cr)
SOC 375 – Sociology of Media & Culture (3 cr)
SOC 258 – Women's Roles & Status (3 cr)
SOC 354 – Social Movements & Social Change (3 cr)

Family and Marriage
SOC 363 – Population Problems (3 cr)
SOC 257 – Patterns in Courtship & Marriage (3 cr)
SOC 344 – Sociology of Death (3 cr)
SOC 410 – Family and Society (3 cr)

Social Problems
SOC 244 – Criminology (3 cr)
SOC 245 – Juvenile Delinquency (3 cr)
SOC 363 – Population Problems (3 cr)

Gerontology
SOC 371 – Social Dynamics of Aging (3 cr)
SOC 320 – Sociology of Disability (3 cr)
SOC 344 – Sociology of Death (3 cr)
SOC 369 – Medical Sociology (3 cr)

Graduation Requirements: 120 cr
Free Electives: 39 cr
GPA Needed to Declare: 2.0
Free electives are to be taken in appropriate fields with advisement. They may be utilized to pursue various special interest areas in sociology (see below) or to develop the equivalent of a minor or a second concentration. Language or research tools may be alternative recommendations.

**B.A. students must attain proficiency in a foreign language.

Proficiency may be satisfied by completing a language class at the 103 (intermediate) level or three years of any one foreign language in high school. Students may also meet this requirement through AP testing or CLEP testing.

Internship - Internships in sociology are highly recommended and may be taken for a total of 9 credits of which 6 credits can be applied to the major.

HELPFUL HINTS FOR ADVISING

Year I
SOC 101 – Introduction to Sociology
PLS 100 – U.S. Government & Politics
MAT 117 – Applied Statistics
ANT 111 – Cultural Anthropology

Year II
SOC 220 – Social Stratification
SOC 201 – Thinking Sociologically

A sociology minor is available – 18 cr
An anthropology minor is available – 18 cr

Disclaimer: Courses may be subject to change.
SOFTWARE ENGINEERING, B.S.

Requirements for Software Engineering major ≈ 73 cr

General Education requirements not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**Engineering Core (12 cr)**
- ENGR 100 – Engineering Seminar I (1 cr)
- ENGR 120 – Programming for Engineers (3 cr)
- ENGR 200 – Engineering Seminar II (1 cr)
- ENGR 300 – Engineering Seminar III (1 cr)
- ENGR 310 – Statistical Process Control (3 cr)

**Software Engineering (20 cr)**
- SWE 100 – Intro to Software Engineering (3 cr)
- SWE 200 – Design Patterns (4 cr)
- SWE 300 – Crafting Quality Code (4 cr)
- SWE 400 – Large Scale Architecture (4 cr)
- SWE 415 – Interdisciplinary Development (4 cr)

**Computer Science (12 cr)**
- CSC 110 – Computer Science I (4 cr)
- CSC 310 – Design & Analysis of Algorithms (4 cr)
- CSC 371 – Database Management Systems (4 cr)

**Computer Engineering (8 cr)**
- CMPE 220 – Computer Organization (4 cr)
- CMPE 320 – Operating Systems (4 cr)

**Mathematics Requirements (9 cr)**
- MAT 211 – Calculus I (4 cr) **
- MAT 225 – Discrete Mathematics (4 cr) **
- MAT 375 – Probability and Stats for Engineers (4 cr)

**Natural Science (8 cr)**
Select two:
- BIO 161 – Prin. of Bio: Cell Str. and Funct. (4 cr) **
  OR
- CHM 121 – Chemical Bonding (3 cr) **
  CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)
  OR
- PHY 205 – Intermediate Physics I (3 cr)
  PHY 123 – Physics I Lab (1 cr) **

**Allied Courses (12 cr)**
Select 3-4 courses. At least 10 credits must be taken beyond the Natural Science requirements:
- BIO 161 – Prin. of Bio: Cell Str. and Funct. (4 cr) **
- BIO 162 – Prin. of Bio: Organismal Diversity (4 cr) **
- CHM 121 – Chemical Bonding (3 cr) ** AND
- CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)
  CHM 122 – Chemical Dynamics (3 cr) ** AND
  CHM 126 – Lab IIB-Equilibrium & Instrumentation (1 cr)
- PHY 205 – Intermediate Physics I (3 cr) **
- PHY 123 – Physics I Lab (1 cr) **
- PHY 206 – Intermediate Physics II (3 cr) **
  PHY 125 – Physics II Lab (1 cr) **
- MAT 219 – Data Science I (3 cr)
- MAT 317 – Statistics I (4 cr)
- MAT 318 – Elementary Linear Algebra (4 cr)
- MAT 319 – Data Science II (3 cr)
- MAT 320 – Intro to Abstract Algebra (3 cr)
- MAT 326 – Mathematical Modeling (3 cr)
- MAT 410 – Numerical Analysis (3 cr)
- MAT 421 – Number Theory and Cryptography (3 cr)
- MAT 450 – Combinatorics (3 cr)

**Elective (4 cr)**
- CSC, CMPE, or SWE _________________(300+ level)
- CSC, CMPE, or SWE _________________(300+ level)

Graduation Requirements: 120 cr
Free Electives: 2 cr
GPA Needed to Declare:  2.0

To declare or retain this major, a student must earn a ‘C’ or better in CSC 110 Computer Science I and be at a minimum math placement level of 4.

HELPFUL HINTS FOR ADVISING:

Semester I
- ENGR 100 – Engineering Seminar I (1 cr)
- MAT 211 – Calculus I (4 cr)

Semester II
- ENGR 120 – Programming (4 cr)
- MAT 225 – Discrete Math (4 cr)

Disclaimer: Courses may be subject to change.
SPANISH & SPANISH SECONDARY EDUCATION CERTIFICATION, B.A.##

Requirements for Spanish major ≈ 36 cr
Requirements for Spanish major with Secondary Cert ≈ 66 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Spanish Core Requirements (30 cr)
- SPN 202 – Intermediate Conversation (3 cr)
- SPN 204 – Ideas and Cultures from Spanish (3 cr)
- SPN 211 – Intermediate Contextualized Grammar (3 cr)
- SPN 302 – Advanced Spanish Conversation (3 cr)
- SPN 309 – Spanish Phonetics (3 cr)
- SPN 312 – Advanced Contextualized Grammar (3 cr)
- SPN 313 – Advanced Composition and Stylistics (3 cr)
- SPN 343 – Introduction to Literary Studies (3 cr)
- SPN 360 – Masterpieces of Spanish Literature (3 cr)
- SPN 361 – Masterpieces of Spanish-American Lit. (3 cr)

Spanish Electives (6 cr)
- SPN _______________________________(300 + level)
- SPN _______________________________(400 level)

Secondary Education Certification (33 cr)
- TCH 207 – Organizational & Psych Foundations (3 cr)
- TCH 251 – Elements of Middle Level Instruction (3 cr)
- EEC 273 – Introduction to Exceptionalities (3 cr)
- EEC 423 – Effective Instructional Strategies (3 cr)
- EEC 483 – Assessing Children with Exceptionalities (3 cr)
- EDU 426 – Methods of Teaching Foreign Languages (3 cr)
- EDU 495 – Student Teaching & Practicum (12 cr)

Math requirement:
- MAT __________________________ (except MAT 185) **
- MAT __________________________ (except MAT 185) **

Literature requirement:
- ENG 243, ENG 248, OR ENG 250 (3 cr) **

Environmental requirement:

Optional Translation Specialization
- SPN 330 – Spanish for the Professions (3 cr)
- SPN 385 – Aspects of Hispanic Civilization (3 cr)
- SPN 420 – Theory and Practice of Translation (3 cr)
- SPN 400 – Special topics or Internship (3 cr)

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300.

Dual Certification: Students planning to teach Spanish will find it to their advantage to work for dual certification in two modern languages: a modern language and English, or a modern language and another field. To achieve dual certification, a student must have the approval of both departments involved, follow an approved course of studies in the specialty areas, take the appropriate methods course, and complete student teaching in both fields. See the Modern Languages Department for details.

ACTFL Oral Proficiency: All Spanish Secondary Education Certification student must pass the ACTFL Oral Proficiency Interview prior to graduation and reach an advanced low level minimum.

Graduation Requirements: 120 cr
Free Electives with Education Cert: 9 cr
Free Electives without Education Cert: 39 cr
GPA Needed to Declare: 3.0

Free Electives: The advisor will suggest courses from other programs that pertain to the history and culture of Spanish speaking countries. Or student may choose a second Major or other minors. Free Electives are courses not previously taken.

HELPFUL HINTS FOR ADVISING

Year I Any introductory language courses necessary.

Spanish Minor available – 18 cr

Disclaimer: Courses may be subject to change.
**SUSTAINABILITY—ENVIRONMENTAL CONSERVATION CONCENTRATION, B.S.**

Requirements for Sustainability major with Environmental Conservation Concentration ≈ 60 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

### Sustainability Core (6 cr)
- GEO 427 – Sustainability (3 cr)

Select one:
- ESS 108 – Conservation of Natural Resources (3 cr) ** OR
- BIO 145 – Environmental Bio (3 cr) **

### Environmental Conservation Core (12 cr)
- GEO 202 – GIS I: Intro to Geographic Info Systems (3 cr)
- GEO 230 – Economic Geography (3 cr)
- GEO 360 – Internship in Geography I (3 cr)
- GEO 391 – Geography Seminar (3 cr)

### Sustainable Systems Requirements (9 cr)
Select three:
- ESS 214 – Geology of National Parks (3 cr)
- ESS 404 – Applied Meteorology and Climatology (3 cr)
- ESS 413 – Mineral and Rock Resources (3 cr)
- ESS 442 – Environmental Geology (3 cr)
- ESS 451 – Coastal Environmental Oceanography (3 cr)
- GEO 405 – Environ. Conservation & Mgmt in PA (3 cr)
- GEO 444 – Environmental Land-Use Planning (3 cr)
- GEO 446 – Water Resources Management (3 cr)
- GEO 450 – Field Studies (1-3 cr) [recommended]

### Human Sustainability Requirements (6 cr)
Select two:
- GEO 140 – Cultural Geography (3 cr) **
- GEO 244 – Land Use (3 cr)
- GEO 310 – Transportation Geography (3 cr)
- GEO 322 – Urban Geography (3 cr)

### Technique Course Requirements (6 cr)
Select two:
- GEO 339 – Remote Sensing (3 cr)
- GEO 352 – Cartography (3 cr)
- GEO 363 – GIS II: Intermediate Geographic Info Syst (3 cr)
- GEO 420 – GIS III: Advanced Geographic Info Syst (3 cr)
- GEO 425 – Image Processing (3 cr)
- GEO 440 – Field Techniques (3 cr)
- GEO 441 – Quantitative Methods (3 cr) [recommended]
- GEO 450 – Field Studies (1-3 cr) [recommended]
- GEO 463 – Applied Geophysical Imaging (3 cr)

### Biology Requirements (6 cr)
- BIO 162 – Principles of Bio: Organismal Diversity (4 cr) **

Select one:
- BIO 205 – Marine Biology (3 cr)
- BIO 208 – Field Biology (3 cr)
- BIO 210 – Field Zoology (3 cr)
- BIO 230 – Botany (3 cr)
- BIO 242 – Ecology (3 cr) [recommended]

### Economics and Business Requirements (6 cr)
- ECO 102 – Principles of Microeconomics (3 cr)

Select one:
- ECO 345 – The Economics of Growth & Development (3 cr)
- ECO 355 – Environmental Economics (3 cr) [recommended]
- MGT 447 – Business and Society (3 cr)
- MIS 142 – Business Computer Systems (3 cr)
- MIS 242 – Design & Development of User Info Syst. (3 cr)
- SCM 3xx – Sustainable Operations Management (3 cr)
- SCM 420 – Global Logistics Systems (3 cr)

### English, History, and Communication Requirements (6 cr)
Select two:
- ENG 238 – Technical/Professional Writing I (3 cr)
- ENG 359 – Native American Literature (3 cr)
- HCS 345 – Environmental Comm. (3 cr) [recommended]
- HIS 358 – American Enviro. History (3 cr) [recommended]

Graduation Requirements: 120 cr
Free Electives: 15 cr
GPA Needed to Declare: 2.0

Disclaimer: Courses may be subject to change.
EARTH AND SPACE SCIENCE, B.S.ED.

Requirements for Earth and Space Science major ≈ 84 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Earth and Space Science Core (12 cr)
- ESS 210 – Physical Geology (3 cr)
- ESS 212 – Historical Geology (3 cr)
- ESS 220 – Oceanography (3 cr)
- ESS 355 – Meteorology (3 cr)

Earth Science Elective (12 cr)
Choose 4:
- ESS 108 – Conservation of Natural Resources (3 cr) **
- ESS 214 – Geology of National Parks (3 cr)
- ESS 404 – Applied Meteorology and Climatology (3 cr)
- ESS 442 – Environmental Geology (3 cr)
- GEO 202 – GIS I: Intro to GIS (3 cr)
- GEO 203 – Climatology (3 cr)
- GEO 224 – Soils (3 cr)
- GEO 226 – Hydrology (3 cr)
- GEO 339 – Remote Sensing (3 cr)
- GEO 352 – Cartography (3 cr)
- GEO 363 – GIS II: Intermediate GIS (3 cr)
- GEO 397 – Introduction to Research (1-3 cr)
- GEO 420 – GIS III: Advanced GIS (3 cr)
- GEO 440 – Field Techniques (3 cr)
- GEO 444 – Environmental Land-Use Planning (3 cr)

Biology Requirement (10-11 cr)
Select 3:
- BIO 161 – Principles of Biology: Cell Str and Funct (4 cr) **
- BIO 162 – Prin. of Biology: Organismal Diversity (4 cr) **
- BIO 145 – Environmental Biology (3 cr) **
- BIO 208 – Field Biology (3 cr) [prereq: BIO 162]

Chemistry Requirement (8 cr)
- CHM 121 – Chemical Bonding (3 cr) **
  CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)
  CHM 122 – Chemical Dynamics (3 cr)
  CHM 126 – Lab IIB-Equilibrium & Instrumentation (1 cr)

Physics Requirement (11 cr)
- PHY 108 – Astronomy (3 cr) **
- PHY 121 – Introductory Physics I-Lecture (3 cr)
  PHY 123 – Physics I Lab (1 cr)
- PHY 122 – Introductory Physics II-Lecture (3 cr)
  PHY 125 – Physics II Lab (1 cr)

Math Requirement (7 cr)
- MAT 117 – Applied Statistics (3 cr) **
- MAT 211 – Calculus I (4 cr) **

College of Education and Human Services (33 cr)
- EEC 273 – Introduction to Exceptionalities (3 cr)
- EEC 423 – Effective Instructional Strategies (3 cr)
- RDG 413 – Teaching Reading to ELL (3 cr)
- TCH 207 – Org. & Psych. Foundations (3 cr)
- EEC 483 – Assessing Children with Exceptionalities (3 cr)
- EDU 440 – Teaching Sci in Secondary Schools (3 cr)
- EDU 441 – Curriculum & Evaluation in Secondary Sci (3 cr)
- EDU 495 – Student Teaching & Practicum (12 cr)

Recommended: General Science Certification (3 cr)
In order to complete a General Science Certification, student must take one of the following in addition to their Earth-Space program:
- CSC 103 – Overview to Computer Science (3 cr) ** OR
- CSC 180 – Microcomputer Basics (3 cr) ** OR
- EDU 420 – Microcomputers in the Classroom (3 cr)

Graduation Requirements: 120+ cr
Free Electives: 0
GPA Needed to Declare: 3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

Disclaimer: Courses may be subject to change.
GEOGRAPHY, B.S.ED.

Requirements for Geography Education Major ≈ 70 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Geography Core (12 cr)
__GEO 101 – World Geography (3 cr) **
__GEO 103 – Geography of U.S. and Canada (3 cr)
__GEO 140 – Cultural Geography (3 cr) **
__GEO 230 – Economic Geography (3 cr)

Select one:
__ESS 110 – Intro to Geology (3 cr) ** OR
__ESS 111 – Intro to Atmosphere (3 cr) **

Geography Electives (9 cr)
__GEO ____________________
__GEO ____________________
__GEO ____________________

Economics Requirements (6 cr)
__ECO 101 – Principles of Macroeconomics (3 cr) **
__ECO 102 – Principles of Microeconomics (3 cr) **

History Requirements (9 cr)
__HIS 105 – Historical Foundations (3 cr) **
__HIS 106 – Thinking Historically in a Global Age (3 cr) **
__HIS 202 – Recent History in the U.S. (3 cr) **

Political Science Requirements (9 cr)
__PLS 100 – U.S. Government & Politics (3 cr) **
__PLS 141 – World Politics (3 cr) **
__PLS ___________________________ (3 cr)

Psychology Requirements (3 cr)
__PSY 101 – General Psychology (3 cr) **

Cognate Elective (3 cr)
__HIS, PLS, ECO___________________(200+ level)

College of Education and Human Services (24-30 cr)
__TCH 207 – Org. & Psych. Foundations (3 cr)
__EEC 273 – Introduction to Exceptionalities (3 cr)
__EEC 423 – Effective Instructional Strategies (3cr)
__RDG 413 – Teaching Reading to ELL (3 cr)
__EEC 483 – Assessing Children with Exceptionalities (3 cr)
__EDU 412 – Teaching Social Studies I (3 cr)
__EDU 413 – Teaching Social Studies II (3 cr)
__EDU 495 – Student Teaching & Practicum (12-15 cr)

Math Requirement (6+ cr)
__MAT 117 – Applied Statistics (3 cr) **
__MAT ________________________ (3 cr) **

Graduation Requirements: 120 cr
Free Electives: 5 cr
GPA Needed to Declare: 3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300

HELPFUL HINTS FOR ADVISING:

Year 1 GEO 101 – World Geography
ESS 111 – Intro to Geology OR
ESS 110 – Intro to Atmosphere
SOC 101 – Intro to Sociology
PLS 100 – US Government and Politics
PSY 101 – General Psychology

Disclaimer: Courses may be subject to change.
Requirements for History, Comprehensive Social Studies major ≈ 69 cr

General Education requirements not listed here. Courses marked with the double asterisk ** may count as general education requirements.

History Core (12 cr)
- HIS 105 – Historical Foundation of Global Cultures (3 cr) **
- HIS 106 – Thinking Historically in a Global Age (3 cr) **
- HIS 201 – Early History of the United States (3 cr) **
- HIS 202 – Recent History of the United States (3 cr)

Restricted History Electives (12 cr)
- HIS ______________(American History 300+ level)
- HIS ______________(European History 300+ level)
- HIS ______________(Africa/Asia/Latin Am/Mid East 300+)
- HIS ______________(Africa/Asia/Latin Am/Mid East 300+)

History Electives (6 cr)
- HIS ______________(300+ level)
- HIS ______________(300+ level)

Social Science Requirements (27 cr)
- ECO 101 – Principles of Macroeconomics (3 cr) **
- ECO 102 – Principles of Microeconomics (3 cr)
- GEO 101 – World Geography (3 cr) **
- GEO 103 – Geography of the U.S. and Canada (3 cr) **
- PLS 100 – U.S. Government and Politics (3 cr) **
- PLS ______________[recommended 231, 251, or 300]
- PSY 101 – General Psychology (3 cr) **
- SOC 101 – Introduction to Sociology (3 cr) **

Select one:
- ANT 111 – Cultural Anthropology (3 cr) OR
- INT 200 – Intro to International Studies (3 cr) OR
- GEO ______________(200 or 300 level) OR
- PLS ______________(200 or 300 level) OR
- PHL ________

Math Requirement (6-8 cr)
- MAT ______________(except MAT 185) **
- MAT ______________(except MAT 185) **

Recommended:
- MAT 117: Applied Statistics (3 cr) **

Literature Requirement (3 cr)
- ENG 248 OR ENG 250 (3 cr) **

Professional Education Requirements (33 cr)
- TCH 207 – Org. & Psych. Foundations (3 cr)
- EEC 273 – Introduction to Exceptionalities (3 cr)
- EEC 423 – Effective Instructional Strategies (3 cr)
- RDG 413 – Teaching Reading to ELL (3 cr)
- EEC 483 – Assessing Children with Exceptionalities (3 cr)
- EDU 412 – Teaching of Social Studies I (3 cr)
- EDU 413 – Teaching of Social Studies II (3 cr)
- EDU 495 – Student Teaching & Practicum (12 cr)

Note: TCH 207 must be completed before EDU 412 and EDU 413. EDU 412 and EDU 413 must be taken simultaneously. A cumulative GPA of 3.0 is required to enroll in EDU 412 and EDU 413. EEC 483 must be taken with EDU 495.

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level classes.

Required: 50 Level I Field Experience hours and Portfolio due between 75 and 90 credits. See B.S. Ed. Advisor for details.

Graduation Requirements: 120+ cr
Free Electives: 6 cr
GPA Needed to Declare: 3.0

HELPFUL HINTS FOR ADVISING:

Year 1

HIS 105 – Historical Foundations of Global Cultures
HIS 106 – Thinking Historically in a Global Age
GEO 103 – Geography of U.S. and Canada

All ANT, ECO, GEO, INT, PLS, PHL courses must be passed with a grade of C or above.

Disclaimer: Courses may be subject to change.
PHYSICS, B.S.ED.

Requirements for Physics Education major ≈ 82 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Physics Core (32 cr)
- PHY 107 – Seminar for Physics Majors (2 cr)
- PHY 221 – Fundamentals of Physics I (5 cr) **
- PHY 222 – Fundamentals of Physics II (5 cr)
- PHY 301 – Mathematical & Numerical Techniques (4 cr)
- PHY 311 – Quantum I (4 cr)
- PHY 321 – Electricity and Magnetism I (4 cr)
- PHY 331 – Mechanics I (4 cr)
- PHY 341 – Classical and Statistical Thermodynamics (4 cr)

Physics Elective (3 cr)
- PHY ______________________(400 level)

Math Requirement (15 cr)
- MAT 211 – Calculus I (4 cr) **
- MAT 212 – Calculus II (4 cr) **
- MAT 213 – Calculus III (4 cr)
- MAT 322 – Differential Equations (3 cr)

Chemistry Requirement (4 cr)
- CHM 121 – Chemical Bonding (3 cr) **
- CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)

Biology Requirement (4 cr)
- BIO 162 – Prin. of Bio: Organismal Diversity (4 cr) **

Earth-Space Sciences (3 cr)
Select one:
- ESS 110 – Introduction to Geology
- ESS 210 – Physical Geology (3 cr)

Computer Science/Engineering Requirement (3-4 cr)
Select one:
- CSC 110 – Computer Science I (4 cr) **
- ENGR 120 – Programming for Engineers (3 cr)

Professional Education Requirements (33 cr)
- TCH 207 – Organizational & Psych Foundations (3 cr)
- EDU 440 – Teaching of Science in Secondary Schools (3 cr)
- EDU 441 – Curriculum and Evaluation (3 cr)
- EEC 273 – Introduction to Exceptionalities (3 cr)
- EEC 423 – Effective Instructional Strategies (3 cr)
- EEC 483 – Assessing Children with Exceptionalities (3 cr)
- RDG 413 – Teaching Reading to ELL (3 cr)
- EDU 495 – Student Teaching & Practicum (9-15 cr)

Literature Requirement (3 cr)
- ENG 243, ENG 248, OR ENG 250 (3 cr) **

Graduation Requirements: 120+ cr
Free Electives: 0 cr
GPA Needed to Declare: 3.0

HELPFUL HINTS FOR ADVISING

Semester I
- MAT 211 – Calculus I
- PHY 107 – Seminar for Physics Majors

Semester II
- MAT 212 – Calculus II
- PHY 221 – Fundamentals of Physics I

Students are recommended to complete 1 semester of Calculus before starting the intermediate physics sequence.

Chemistry should be taken in the junior year. Exceptional students may take it earlier.

Disclaimer: Courses may be subject to change.
B.S.B.A.
Accounting
Entrepreneurship
Finance
  Personal Financial Planning Management
Management
  Human Resource Management
  International Management
Management Information Systems
Marketing
Supply Chain Operations & Management
  Logistics Management
SUGGESTED PROGRAM FOR B.S.B.A. STUDENTS

FRESHMAN YEAR

Fall Semester
UNIV 101 First Year Experience
Academic Writing*
College Algebra (A/B)
General Education Elective
Business Computer Systems*
Foundations of Business Administration (2cr.)*

Spring Semester
UNIV 101 First Year Experience
Human Comm Studies*
Historical Foundation of Global Cultures*
Applied Calculus I
General Education Elective*
Principles of Economics (4 crs.)*
or a General Education Elective

SOPHOMORE YEAR

Fall Semester
Fund. of Financial Accounting
Principles of Economics (4 crs.)
or a General Education Elective
American Legal Environment*
General Education Elective
General Education Elective

Spring Semester
Managerial Accounting
Managerial Economics
Statistical Applications in Business*
General Education Elective
General Education Elective

JUNIOR YEAR

Fall Semester
Financial Management*
Organizational Behavior*
Principles of Marketing*
Supply Chain Operations Mgt*
or Gen. Ed. Elec.
Major Course
or Gen. Ed. Elec.

Spring Semester
Major Course*
Major Course*
General Education Elective*
Free Elective*
Free Elective*

SENIOR YEAR

Fall Semester
Business and Society*
Major Course
Major Course
General Education Elective
Free Elective (Major course for ACC, MIS & PFP Majors)

Spring Semester
Strategic Management*
Major Course
Major Course
Free Elective
Free Elective

*These courses can be interchanged between semesters within the specified year.

Courses in bold are part of the business core curriculum as shown in a prerequisite flow chart on the back of this sheet.

Please note that sequencing of courses may vary depending upon the specific requirements within a particular major. For example, Accounting, Management Information Systems, Management, Human Resource Management, International Management, and Entrepreneurship, majors should begin their major coursework during the first semester of their junior year.

Check with your advisor or departmental office for further information.
**Requirements for Business Students:**

Complete ENG114 Academic Writing or equivalent with a "C" grade or better; maintain a 2.0 cumulative average in the business core, the major, and a 2.0 cumulative average overall.

* Accounting majors should take ACC 200 in their first semester and ACC 201 in the second semester of their sophomore year and earn at least a "C" grade or higher in both courses.
* Personal Financial Planning majors must earn a "C" grade or higher in ACC 200 and ACC 201.
* ECO 101 & ECO 102 must be completed to replace ECO 113.
* MAT 117 (if taken at Shippensburg University as a non-declared Business student) will replace SCM 200.
* Directed Gen Ed courses **DO NOT** double count between Business Core/Gen Ed requirements.
ACCOUNTING, B.S.B.A.

Requirements for Accounting major = 62 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**B.S.B.A. Core (48 cr)**
- MAT 140A or MAT 140B – College Algebra (3-4 cr) **
- MAT 181 – Applied Calculus (3 cr) **
- ACC 200 – Fundamentals of Financial Accounting (3 cr)
- ACC 201 – Managerial Accounting (3 cr)
- BSL 261 – American Legal Environment (3 cr)
- BSN 101 – Foundations of Business Administration (2 cr)
- ECO 113 – Principles of Economics (4 cr) **
- ECO 280 – Managerial Economics (3 cr)
- FIN 311 – Financial Management (3 cr)
- MGT 305 – Organizational Behavior (3 cr)
- MGT 447 – Business and Society (3 cr)
- MGT 497 – Strategic Management (3 cr)
- MIS 142 – Business Computer Systems (3 cr)
- MKT 305 – Principles of Marketing (3 cr)
- SCM 200 – Statistical Applications in Business (3 cr)
- SCM 330 – Supply Chain & Operations Management (3 cr)

Mathematical Competency: Students who place at the advanced level in the mathematics placement/competency test are not required to take MAT 140A/B.

Substitutions: Completion of ECO 101 & ECO 102 will satisfy the requirement for ECO 113, and completion of MAT 117 taken at Shippensburg University will satisfy the requirement for SCM 200.

**Accounting Core (18 cr)**
- ACC 306 – Tax Accounting (3 cr) S
- ACC 310 – Intermediate Accounting I (3 cr)
- ACC 311 – Intermediate Accounting II (3 cr) S
- ACC 312 – Cost Determination and Analysis (3 cr)
- ACC 404 – Auditing (3 cr) F
- MIS 300 – Info Technology & Business Operations (3 cr) [Students who double major in ACC and MIS take MIS 355 instead of MIS 300]

**Accounting Electives (3 cr)**
Choose one:
- ACC 401 – Advanced Accounting (3 cr) OR
- ACC 406 – Advanced Tax Accounting (3 cr) OR
- ACC 412 – Advanced Cost Analysis and Control (3 cr) OR
- ACC 490 – Selected Topics in Accounting (3 cr)

Graduation Requirements: 120 cr
- Free Electives: 13 cr
- GPA Needed to Declare: 2.0

Declare Accounting: A grade of “C” or better in College Algebra and/or Applied Calculus and ENG 114 Writing Intensive First-Year Seminar is required. In addition, students must have a 2.0 cumulative grade point average in all of the 100/200 level business core courses they have completed. Freshmen must wait until the second semester to declare a Business major. EXCEPTION: Those students with MSAT of 605+ or those testing at the advanced level in mathematics on the placement test.

F=Fall only
S=Spring only

HELPFUL HINTS FOR ADVISING:

**Semester I**
- BSN 101 – Foundations of Business
- MAT 140 – College Algebra
- MIS 142 – Business Computer Systems

**Semester II**
- MAT 181 – Applied Calculus I
- ECO 113 – Principles of Economics

**Semester III**
- ACC 200 – Fundamentals of Accounting
- BSL 261 – American Legal Environment

**Semester IV**
- ACC 201 – Managerial Accounting
- ECO 280 – Managerial Economics
- SCM 300 – Statistical Applications

Notes: MAT 140 is recommended before taking ECO 113.

MIS 142 Business Computer Systems is a prerequisite for SCM 200.

All B.S.B.A. majors in the John L. Grove College of Business should satisfactorily complete the 100-/200-level business core courses during their freshman and sophomore years and the 300-400-level business core courses during their junior and senior years, as listed below.

Disclaimer: Courses may be subject to change.
Requirements for Entrepreneurship major = 59 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

B.S.B.A. Core (48-49 cr)
- MAT 140A or MAT 140B – College Algebra (3-4 cr)
- MAT 181 – Applied Calculus (3 cr) **
- ACC 200 – Fundamentals of Financial Accounting (3 cr)
- ACC 201 – Managerial Accounting (3 cr)
- BSL 261 – American Legal Environment (3 cr)
- BSN 101 – Foundations of Business Administration (2 cr)
- ECO 113 – Principles of Economics (4 cr) **
- ECO 280 – Managerial Economics (3 cr)
- FIN 311 – Financial Management (3 cr)
- MGT 305 – Organizational Behavior (3 cr)
- MGT 447 – Business and Society (3 cr)
- MGT 497 – Strategic Management (3 cr)
- MIS 142 – Business Computer Systems (3 cr)
- MKT 305 – Principles of Marketing (3 cr)
- SCM 200 – Statistical Applications in Business (3 cr)
- SCM 330 – Supply Chain & Operations Management (3 cr)

Mathematical Competency: Students who place at the advanced level in the mathematics placement/competency test are not required to take MAT 140A/B.

Substitutions: Completion of ECO 101 & ECO 102 will satisfy the requirement for ECO 113. Completion of MAT 117 taken at Shippensburg University will satisfy the requirement for SCM 200.

Entrepreneurship Requirements (15 cr)
- ENT 336 – Product Design & Development (3 cr) F
- ENT 337 – Issues in Entrepreneurship (3 cr) S
- ENT 431 – Corporate Entrepreneurship (3 cr)
- ENT 432 – Entrepreneurship (3 cr) S
- ENT 433 – Small Business Management (3 cr) F

Marketing and Management elective (3 cr)
Select one:
- MGT 340 – Human Resource Management
- MGT 342 – Labor Relations & Collective Bargaining (3 cr)
- MGT 370 – International Business (3 cr)
- MGT 450 – Negotiation (3 cr)
- MGT 470 – International Management (3 cr)
- MGT 490 – Selected Topics in Management (3 cr)
- MGT 498 – Strategy Implementation (3 cr)
- MKT 370 – Services Marketing (3 cr)
- MKT 430 – Marketing Research (3 cr)

Graduation Requirements: 120 cr
Free Electives: 16 cr
GPA Needed to Declare: 2.0

Declare Entrepreneurship: A grade of “C” or better in College Algebra and/or Applied Calculus and ENG 114 Writing Intensive First-Year Seminar is required. In addition, students must have a 2.0 cumulative grade point average in all of the 100/200 level business core courses they have completed. Freshmen must wait until the second semester to declare a Business major.

EXCEPTION: Those students with MSAT of 605+ or those testing at the advanced level in mathematics on the placement test.

F=Fall only
S=Spring only

HELPFUL HINTS FOR ADVISING:

Semester I  
BSN 101 – Foundations of Business  
MAT 140 – College Algebra  
MIS 142 – Business Computer Systems

Semester II  
MAT 181 – Applied Calculus I  
ECO 113 – Principles of Economics

Semester III  
ACC 200 – Fundamentals of Accounting  
BSL 261 – American Legal Environment

Semester IV  
ACC 201 – Managerial Accounting  
ECO 280 – Managerial Economics  
SCM 200 – Statistical Applications

Notes: MAT 140 is recommended before taking ECO 113.

MIS 142 – Business Computer Systems is a prerequisite for SCM 200.

All B.S.B.A. majors in the John L. Grove College of Business should satisfactorily complete the 100-/200-level business core courses during their freshman and sophomore years and the 300-/400-level business core courses during their junior and senior years, as listed below.

Disclaimer: Courses may be subject to change.
FINANCE, B.S.B.A.

Requirements for Finance major = 63 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

B.S.B.A. Core (48-49 cr)
- MAT 140A or MAT 140B – College Algebra (3-4 cr)
- MAT 181 – Applied Calculus (3 cr) **
- ACC 200 – Fundamentals of Financial Accounting (3 cr)
- ACC 201 – Managerial Accounting (3 cr)
- BSL 261 – American Legal Environment (3 cr)
- BSN 101 – Foundations of Business Administration (2 cr)
- ECO 113 – Principles of Economics (4 cr) **
- ECO 280 – Managerial Economics (3 cr)
- FIN 311 – Financial Management (3 cr)
- MGT 305 – Organizational Behavior (3 cr)
- MGT 447 – Business and Society (3 cr)
- MGT 497 – Strategic Management (3 cr)
- MIS 142 – Business Computer Systems (3 cr)
- MKT 305 – Principles of Marketing (3 cr)
- SCM 200 – Statistical Applications in Business (3 cr)
- SCM 330 – Supply Chain & Operations Management (3 cr)

Mathematical Competency: Students who place at the advanced level in the mathematics placement/competency test are not required to take MAT 140A/B.

Substitutions: Completion of ECO 101 & ECO 102 will satisfy the requirement for ECO 113, and completion of MAT 117 taken at Shippensburg University will satisfy the requirement for SCM 200.

Finance Concentration (18 cr)
- FIN 312 – Investments (3 cr) F
- FIN 313 – Advanced Financial Management (3 cr) S
- FIN 314 – Financial Institutions (3 cr) F
- FIN 333 – Applied Company & Security Analysis (3 cr) S

Select two of the following:
- FIN 320 – Risk Management and Insurance (3 cr)
- FIN 322 – Estate Planning (3 cr)
- FIN 324 – Retirement Planning and Employee Benefits (3 cr)
- FIN 340 – Principles of Real Estate (3 cr)
- FIN 393 – Selected Topics in Finance (1-3 cr)
- FIN 405 – Real Estate Appraisal & Investment Analysis (3 cr)
- FIN 414 – Bank Management (3 cr)
- FIN 421 – Personal Financial Planning (3 cr)
- FIN 425 – Global Financial Management (3 cr)
- FIN 434 – Investment Management Program (1-3 cr)
- FIN 435 – Investment Management Program (1-3 cr)
- FIN 442 – Derivatives Markets (3 cr)
- FIN 490 – Selected Topics in Finance (1-3 cr)

Personal Financial Planning Concentration (21 cr)
- FIN 312 – Investments (3 cr) F
- FIN 320 – Risk Management & Insurance (3 cr) S
- FIN 322 – Estate Planning (3 cr) F
- FIN 324 – Retirement Planning & Employee Benefits (3 cr) S
- FIN 333 – Applied Company & Security Analysis (3 cr) S
- FIN 421 – Personal Financial Planning (3 cr) S
- ACC 306 – Tax Accounting (3 cr) S

Graduation Requirements: 120 cr
Free Electives: 12 cr
GPA Needed to Declare: 2.0

Declare Finance: A grade of “C” or better in College Algebra and/or Applied Calculus and ENG 114 Writing Intensive First-Year Seminar is required. In addition, students must have a 2.0 cumulative grade point average in all of the 100/200 level business core courses they have completed. Freshmen must wait until the second semester to declare a Business major. EXCEPTION: Those students with MSAT of 605+ or those testing at the advanced level in mathematics on the placement test.

F=Fall only
S=Spring only

HELPFUL HINTS FOR ADVISING:

Semester I
- BSN 101 – Foundations of Business
- MAT 140 – College Algebra
- MIS 142 – Business Computer Systems

Semester II
- MAT 181 – Applied Calculus I
- ECO 113 – Principles of Economics

Semester III
- ACC 200 – Fundamentals of Accounting
- BSL 261 – American Legal Environment

Semester IV
- ACC 201 – Managerial Accounting
- ECO 280 – Managerial Economics
- SCM 200 – Statistical Applications

Notes: MAT 140 is recommended before taking ECO 113.

MIS 142 – Business Computer Systems is a prerequisite for SCM 200.

All B.S.B.A. majors in the John L. Grove College of Business should satisfactorily complete the 100-/200-level business core courses during their freshman and sophomore years and the 300-400-level business core courses during their junior and senior years, as listed below.

Disclaimer: Courses may be subject to change.
MANAGEMENT, B.S.B.A.

Requirements for Management major ≈ 59 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

B.S.B.A. Core (48-49 cr)

- MAT 140A or MAT 140B – College Algebra (3-4 cr) **
- MAT 181 – Applied Calculus (3 cr) **
- ACC 200 – Fundamentals of Financial Accounting (3 cr)
- ACC 201 – Managerial Accounting (3 cr)
- BSL 261 – American Legal Environment (3 cr)
- BSN 101 – Foundations of Business Administration (2 cr)
- ECO 113 – Principles of Economics (4 cr) **
- ECO 280 – Managerial Economics (3 cr)
- FIN 311 – Financial Management (3 cr)
- MGT 305 – Organizational Behavior (3 cr) **
- MGT 447 – Business and Society (3 cr)
- MGT 497 – Strategic Management (3 cr)
- MIS 142 – Business Computer Systems (3 cr)
- MKT 305 – Principles of Marketing (3 cr)
- SCM 200 – Statistical Applications in Business (3 cr)
- SCM 330 – Supply Chain & Operations Management (3 cr)

Mathematical Competency: Students who place at the advanced level in the mathematics placement/competency test are not required to take MAT 140A/B.

Substitutions: Completion of ECO 101 & ECO 102 will satisfy the requirement for ECO 113, and completion of MAT 117 taken at Shippensburg University will satisfy the requirement for SCM 200.

Management Concentration (18 cr)

- ENT 431 – Corporate Entrepreneurship (3 cr)
- MGT 340 – Human Resources Management (3 cr)
- MGT 370 – International Business (3 cr)
- MGT 394 – Leadership & Decision-Making (3 cr)
- MGT 498 – Strategy Implementation (3 cr)
Select one:

- ENT 337 – Issues in Entrepreneurship (3 cr)
- ENT 431 – Corporate Entrepreneurship (3 cr)
- ENT 433 – Small Business Management (3 cr)
- FIN 324 – Retirement Planning & Employee Benefits (3 cr)
- MGT 349 – International Human Resource Mgmt (3 cr)
- MGT 370 – International Business (3 cr)
- MGT 394 – Leadership & Decision-Making (3 cr)
- MGT 450 – Negotiation (3 cr)
- MIS 300 – Information Tech & Business Operations (3 cr)

International Management Concentration (30 cr)

- MGT 340 – Human Resource Management (3 cr)
- MGT 370 – International Business (3 cr)
- MGT 470 – International Management (3 cr)
- MGT 490 – Selected Topics in Management (3 cr)
Select two:

- ANT 220 – Anthropology for International Studies (3 cr)
- ECO 321 – International Economics (3 cr)
- FIN 425 – Global Financial Management (3 cr)
- GEO 101 – World Geography (3 cr) **
- MGT 349 – International Human Resource Mgmt (3 cr)
- MGT 380 or 381 – Global Bus Exploration I or II (3 cr)
- MGT 491 – Selected Topics in Mgt (3 cr)
- PLS 141 – World Politics (3 cr) **

Modern Language Requirements (12 cr)

- FRN, SPN, GER ____________________ (103+ level)
- FRN, SPN, GER ____________________ (103+ level)
- FRN, SPN, GER ____________________ (103+ level)
Select one:

- FRN 320 – French for the Professions (3 cr)
- SPN 330 – Spanish for the Professions (3 cr)
- GER 215 – German for the Professions (3 cr)

*Students must also pass ACTFL Oral Proficiency Interview at the intermediate level by mid-senior year. Language requirement does not include FRN 101, FRN 102, SPN 101, SPN 102, GER 101, GER 102, FRN 330, FRN 331, SPN 360, or SPN 361.

Human Resources Management Concentration (18 cr)

- MGT 340 – Human Resources Management (3 cr)
- MGT 342 – Labor Relations & Collective Bargaining (3 cr) F
- MGT 346 – Human Resources Management Law (3 cr) S
- MGT 348 – Compensation Administration (3 cr) S
Select two:

- ENT 337 – Issues in Entrepreneurship (3 cr)
- ENT 431 – Corporate Entrepreneurship (3 cr)
- ENT 433 – Small Business Management (3 cr)
- FIN 324 – Retirement Planning & Employee Benefits (3 cr)
- MGT 349 – International Human Resource Mgmt (3 cr)
- MGT 370 – International Business (3 cr)
- MGT 394 – Leadership & Decision-Making (3 cr)
- MGT 450 – Negotiation (3 cr)
- MIS 300 – Information Tech & Business Operations (3 cr)

Graduation Requirements: 120 cr
Free ELECTIVES: 16 cr
GPA Needed to Declare: 2.0

Declare Management: A grade of “C” or better in College Algebra and/or Applied Calculus and ENG 114 Writing Intensive First-Year Seminar is required. In addition, students must have a 2.0 cumulative grade point average in all of the 100/200 level business core courses they have completed. Freshmen must wait until the second semester to declare a Business major. EXCEPTION: Those students with MSAT of 605+ or those testing at the advanced level in mathematics on the placement test.

HELPFUL HINTS FOR ADVISING:

F=Fall only
S=Spring only

Semester I  
BSN 101 – Foundations of Business  
MAT 140 – College Algebra  
MIS 142 – Business Computer Systems

Semester II  
MAT 181 – Applied Calculus I  
ECO 113 – Principles of Economics

Semester III  
ACC 200 – Fundamentals of Accounting  
BSL 261 – American Legal Environment
Semester IV      ACC 201 – Managerial Accounting
                 ECO 280 – Managerial Economics
                 SCM 200 – Statistical Applications

Notes: MAT 140 is recommended before taking ECO 113. MIS 142 Business Computer Systems is a prerequisite for SCM 200.

All B.S.B.A. majors in the John L. Grove College of Business should satisfactorily complete the 100-/200-level business core courses during their freshman and sophomore years and the 300-400-level business core courses during their junior and senior years, as listed below.

Disclaimer: Courses may be subject to change.
Requirements for MIS major ≈ 59 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

B.S.B.A. Core (48-49 cr)

- MAT 140A or MAT 140B – College Algebra (3-4 cr) **
- MAT 181 – Applied Calculus (3 cr) **
- ACC 200 – Fundamentals of Financial Accounting (3 cr)
- ACC 201 – Managerial Accounting (3 cr)
- BSL 261 – American Legal Environment (3 cr)
- BSN 101 – Foundations of Business Administration (2 cr)
- ECO 113 – Principles of Economics (4 cr) **
- ECO 280 – Managerial Economics (3 cr)
- FIN 311 – Financial Management (3 cr)
- MGT 305 – Organizational Behavior (3 cr) **
- MGT 447 – Business and Society (3 cr)
- MGT 497 – Strategic Management (3 cr)
- MIS 142 – Business Computer Systems (3 cr)
- MKT 305 – Principles of Marketing (3 cr)
- SCM 200 – Statistical Applications in Business (3 cr)
- SCM 330 – Supply Chain & Operations Management (3 cr)

Mathematical Competency: Students who place at the advanced level in the mathematics placement/competency test are not required to take MAT 140A/B.

Substitutions: Completion of ECO 101 & ECO 102 will satisfy the requirement for ECO 113, and completion of MAT 117 taken at Shippensburg University will satisfy the requirement for SCM 200.

Management Information Systems Requirements (21 cr)

- MIS 240 – Introduction to Programming Concepts (3 cr) F
- MIS 344 – Business Systems Analysis and Design (3 cr) F
- MIS 355 – Database Applications (3 cr) F
- MIS 420 – Telecomm & Distributed Processing (3 cr) S
- MIS 446 – Applied Project Management (3 cr) S

Select one:
- MIS 242 – Design & Development of User Info Syst. (3 cr)
- MIS 399 – Introduction to Corporate Cybersecurity (3 cr)
- MIS 442 – Electronic Commerce & Tech Integration (3 cr)
- CSC 110 – Computer Science I – Lecture ** (3 cr)
- CSC 106 – Computer Science I - Lab (1 cr)

Graduation Requirements: 120 cr
Free Electives: 16 cr
GPA Needed to Declare: 2.0

Declare MIS: A grade of “C” or better in College Algebra and/or Applied Calculus and ENG 114 Writing Intensive First-Year Seminar is required. In addition, students must have a 2.0 cumulative grade point average in all of the 100/200 level business core courses they have completed. Freshmen must wait until the second semester to declare a Business major. EXCEPTION: Those students with MSAT of 605+ or those testing at the advanced level in mathematics on the placement test.

F=Fall only
S=Spring only

HELPFUL HINTS FOR ADVISING:

Semester I
- BSN 101 – Foundations of Business
- MAT 140 – College Algebra
- MIS 142 – Business Computer Systems

Semester II
- MAT 181 – Applied Calculus I
- ECO 113 – Principles of Economics

Semester III
- ACC 200 – Fundamentals of Accounting
- BSL 261 – American Legal Environment

Semester IV
- ACC 201 – Managerial Accounting
- ECO 280 – Managerial Economics
- SCM 200 – Statistical Applications

Notes: MAT 140 is recommended before taking ECO 113.

MIS 142 Business Computer Systems is a prerequisite for SCM 200.

All B.S.B.A. majors in the John L. Grove College of Business should satisfactorily complete the 100-/200-level business core courses during their freshman and sophomore years and the 300-400-level business core courses during their junior and senior years, as listed below.

Disclaimer: Courses may be subject to change.
MARKETING, B.S.B.A.

Requirements for Marketing major \( \approx 59 \) cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**B.S.B.A. Core (48-49 cr)**

- MAT 140A or MAT 140B – College Algebra (3-4 cr) **
- MAT 181 – Applied Calculus (3 cr) **
- ACC 200 – Fundamentals of Financial Accounting (3 cr)
- ACC 201 – Managerial Accounting (3 cr)
- BSL 261 – American Legal Environment (3 cr)
- BSN 101 – Foundations of Business Administration (2 cr)
- ECO 113 – Principles of Economics (4 cr) **
- ECO 280 – Managerial Economics (3 cr)
- FIN 311 – Financial Management (3 cr)
- MGT 305 – Organizational Behavior (3 cr) **
- MGT 447 – Business and Society (3 cr)
- MGT 497 – Strategic Management (3 cr)
- MIS 142 – Business Computer Systems (3 cr)
- MKT 305 – Principles of Marketing (3 cr)
- SCM 200 – Statistical Applications in Business (3 cr)
- SCM 330 – Supply Chain & Operations Management (3 cr)

Mathematical Competency: Students who place at the advanced level in the mathematics placement/competency test are not required to take MAT 140A/B.

Substitutions: Completion of ECO 101 & ECO 102 will satisfy the requirement for ECO 113, and completion of MAT 117 taken at Shippensburg University will satisfy the requirement for SCM 200.

**Marketing Requirements (18 cr)**

- MKT 306 – Buyer Behavior (3 cr) S
- MKT 430 – Marketing Research (3 cr) F
- MKT 495 – Marketing Analysis & Strategy Develop. (3 cr) S

Select three:

- ENT 337 – Issues in Entrepreneurship (3 cr)
- ENT 433 – Small Business Management (3 cr)
- MKT 310 – Personal Selling (3 cr)
- MKT 315 – Sales Management (3 cr)
- MKT 325 – Advertising and Promotional Strategy (3 cr)
- MKT 335 – E-Marketing (3 cr)
- MKT 340 – Tourism and Events Planning (3 cr)
- MKT 342 – B2B Marketing &Analysis (3 cr)
- MKT 352 – Principles of Retailing (3 cr)
- MKT 360 – International Marketing (3 cr)
- MKT 365 – Relationship Marketing (3 cr)
- MKT 370 – Services Marketing (3 cr)
- MKT 380 – Sports Marketing (3 cr)
- MKT 390 – Selected Topics in Marketing Credits: (3 cr)
- MKT 490 – Selected Topics in Marketing Credits: (3 cr)

Graduation Requirements: 120 cr
Free Electives: 16 cr
GPA Needed to Declare: 2.0

Declare Marketing: A grade of “C” or better in College Algebra and/or Applied Calculus and ENG 114 Writing Intensive First-Year Seminar is required. In addition, students must have a 2.0 cumulative grade point average in all of the 100/200 level business core courses they have completed. Freshmen must wait until the second semester to declare a Business major. EXCEPTION: Those students with MSAT of 605+ or those testing at the advanced level in mathematics on the placement test.

F=Fall only
S=Spring only

HELPFUL HINTS FOR ADVISING:

**Semester I**

BSN 101 – Foundations of Business
MAT 140 – College Algebra
MIS 142 – Business Computer Systems

**Semester II**

MAT 140A or MAT 140B – College Algebra (3-4 cr) **
MAT 181 – Applied Calculus (3 cr) **
ACC 200 – Fundamentals of Financial Accounting (3 cr)
ACC 201 – Managerial Accounting (3 cr)
BSL 261 – American Legal Environment (3 cr)
BSN 101 – Foundations of Business Administration (2 cr)
ECO 113 – Principles of Economics (4 cr) **
ECO 280 – Managerial Economics (3 cr)
FIN 311 – Financial Management (3 cr)
MGT 305 – Organizational Behavior (3 cr) **
MGT 447 – Business and Society (3 cr)
MGT 497 – Strategic Management (3 cr)
MIS 142 – Business Computer Systems (3 cr)
MKT 305 – Principles of Marketing (3 cr)
SCM 200 – Statistical Applications in Business (3 cr)
SCM 330 – Supply Chain & Operations Management (3 cr)

Notes: MAT 140 is recommended before taking ECO 113.

MIS 142 Business Computer Systems is a prerequisite for SCM 200.

All B.S.B.A. majors in the John L. Grove College of Business should satisfactorily complete the 100-/200-level business core courses during their freshman and sophomore years and the 300-400-level business core courses during their junior and senior years, as listed below.

Disclaimer: Courses may be subject to change.
SUPPLY CHAIN MANAGEMENT, B.S.B.A.

Requirements for major in Supply Chain Management ≈ 59 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

B.S.B.A. Core (48-49 cr)
__MAT 140A or MAT 140B – College Algebra (3-4 cr) **
__MAT 181 – Applied Calculus (3 cr) **
__ACC 200 – Fundamentals of Financial Accounting (3 cr)
__ACC 201 – Managerial Accounting (3 cr)
__BSL 261 – American Legal Environment (3 cr)
__BSN 101 – Foundations of Business Administration (2 cr)
__ECO 113 – Principles of Economics (4 cr) **
__ECO 280 – Managerial Economics (3 cr)
__FIN 311 – Financial Management (3 cr)
__MGT 305 – Organizational Behavior (3 cr) **
__MGT 447 – Business and Society (3 cr)
__MGT 497 – Strategic Management (3 cr)
__MIS 142 – Business Computer Systems (3 cr)
__MKT 305 – Principles of Marketing (3 cr)
__SCM 200 – Statistical Applications in Business (3 cr)
__SCM 330 – Supply Chain & Operations Management (3 cr)

Mathematical Competency: Students who place at the advanced level in the mathematics placement/competency test are not required to take MAT 140A/B.

Substitutions: Completion of ECO 101 & ECO 102 will satisfy the requirement for ECO 113, and completion of MAT 117 taken at Shippensburg University will satisfy the requirement for SCM 200.

Supply Chain Management Concentration (18 cr)
__SCM 315 – Strategic Procurement (3 cr)
__SCM 355 – Managing Quality & Improvement (3 cr)
__SCM 370 – Integrated Supply Chain Systems (3 cr)
__SCM 380 – Data Mining for Supply Chain Mgmt (3 cr)
__SCM 420 – Global Logistics Systems (3 cr)

Select one:
__ACC 312 – Cost Determination and Analysis (3 cr)
__ECO 355 – Environmental Economics (3 cr)
__FIN 320 – Risk Management and Insurance (3 cr)
__FIN 340 – Principles of Real Estate (3 cr)
__FIN 405 – Real Estate Appraisal & Investment (3 cr)
__GEO 202 – GIS I: Intro to Geographic Info Systems (3 cr)
__MGT 340 – Human Resource Management (3 cr)
__MGT 342 – Labor Relations & Collective Bargaining (3 cr)
__MGT 370 – International Business (3 cr)
__MGT 394 – Leadership & Decision-Making (3 cr)
__MGT 450 – Negotiation (3 cr)
__MIS 240 – Introduction to Programming Concepts (3 cr)
__MIS 242 – Design & Development User Info Systems (3 cr)
__MIS 300 – Info Technology & Business Operations (3 cr)
__MIS 446 – Applied Project Management (3 cr)
__MKT 310 – Personal Selling (3 cr)
__MKT 342 – B2B Marketing & Analysis (3 cr)
__MKT 365 – Relationship Marketing (3 cr)
__MKT 370 – Services Marketing (3 cr)
__SCM 315 – Strategic Procurement (3 cr)
__SCM 355 – Managing Quality & Improvement (3 cr)
__SCM 380 – Data Mining for Supply Chain Management (3 cr)

Logistics Management Concentration (18 cr)
__SCM 370 – Integrated Supply Chain Systems (3 cr)
__SCM 390 – Strategic Warehouse Management (3 cr) S
__SCM 410 – Distribution Systems in Supply Chains (3 cr) S
__SCM 420 – Global Logistics Systems (3 cr)

Select two:
__ACC 312 – Cost Determination and Analysis (3 cr)
__ECO 355 – Environmental Economics (3 cr)
__FIN 320 – Risk Management and Insurance (3 cr)
__FIN 340 – Principles of Real Estate (3 cr)
__FIN 405 – Real Estate Appraisal & Investment (3 cr)
__GEO 202 – GIS I: Intro to Geographic Info Systems (3 cr)
__MGT 340 – Human Resource Management (3 cr)
__MGT 342 – Labor Relations & Collective Bargaining (3 cr)
__MGT 370 – International Business (3 cr)
__MGT 394 – Leadership & Decision-Making (3 cr)
__MGT 450 – Negotiation (3 cr)
__MIS 240 – Introduction to Programming Concepts (3 cr)
__MIS 242 – Design & Development User Info Systems (3 cr)
__MIS 300 – Info Technology & Business Operations (3 cr)
__MIS 446 – Applied Project Management (3 cr)
__MKT 310 – Personal Selling (3 cr)
__MKT 342 – B2B Marketing & Analysis (3 cr)
__MKT 365 – Relationship Marketing (3 cr)
__MKT 370 – Services Marketing (3 cr)
__SCM 315 – Strategic Procurement (3 cr)
__SCM 355 – Managing Quality & Improvement (3 cr)
__SCM 380 – Data Mining for Supply Chain Mgmt (3 cr)

Graduation Requirements: 120 cr
Free Electives: 16 cr
GPA Needed to Declare: 2.0

Declare Supply Chain Management: A grade of “C” or better in College Algebra and/or Applied Calculus and ENG 114 Writing Intensive First-Year Seminar is required. In addition, students must have a 2.0 cumulative grade point average in all of the 100/200 level business core courses they have completed. Freshmen must wait until the second semester to declare a Business major. EXCEPTION: Those students with MSAT of 605+ or those testing at the advanced level in mathematics on the placement test.

F=Fall only
S=Spring only

HELPFUL HINTS FOR ADVISING:

<table>
<thead>
<tr>
<th>Semester I</th>
<th>Semester II</th>
<th>Semester III</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSN 101 – Foundations of Business</td>
<td>MAT 181 – Applied Calculus I</td>
<td>ACC 200 – Fundamentals of Accounting</td>
</tr>
<tr>
<td>MAT 140 – College Algebra</td>
<td>ECO 113 – Principles of Economics</td>
<td>MIS 142 – Business Computer Systems</td>
</tr>
<tr>
<td>MIS 142 – Business Computer Systems</td>
<td>BSL 261 – American Legal Environment</td>
<td>BSN 101 – Foundations of Business Administration</td>
</tr>
</tbody>
</table>
Notes: MAT 140 is recommended before taking ECO 113.

MIS 142 Business Computer Systems is a prerequisite for SCM 200.

All B.S.B.A. majors in the John L. Grove College of Business should satisfactorily complete the 100-/200-level business core courses during their freshman and sophomore years and the 300-400-level business core courses during their junior and senior years, as listed below.

Disclaimer: Courses may be subject to change.
COLLEGE OF EDUCATION & HUMAN SERVICES

B.S.
Criminal Justice
Exercise Science

B.S.W.
Social Work

B.S.Ed.
Teacher Education
  Early Childhood/Elementary Education PK-4
  Elementary/Middle School Education 4-8
  Elementary/Middle School Education 4-8/Special Education Dual Certification
FOR STUDENTS INTERESTED IN TEACHING PK-4 OR 4-8

Many individuals have found that they enjoy working with children or young adults through babysitting, summer camps, athletics, etc. and then decide that they would like to teach these age groups. This enjoyment and appreciation of youth is a basic necessity for a teacher but as one educator said, “You can't teach what you don't know.” Therefore, the teacher education program for either early childhood/elementary education (Grades PK-4, Special Education PK-4 Dual Education Majors) or elementary/middle level education (Grades 4-8) majors is a blend of practical experiences with children grounded in a solid academic background in the general education program and in the major.

If you, as an exploratory student, are considering one of these majors, it must be a sound decision based on the understanding that you will be teaching children and young adults to take their places in society in the 21st century. You will need to: be a literate individual, knowledgeable in the math, sciences, social sciences and humanities; hone/sharpen critical and creative thinking skills, problem solving skills; have an appreciation of multicultural and international perspectives; and have an understanding of special needs children in inclusive classrooms in order to fulfill your responsibility to the children you teach.

All three programs at Shippensburg consist of a four-year program leading to the degree of Bachelor of Science in Education. Successful completion of this program of study qualifies the graduate for a variety of professional employment possibilities. The PK-4 Early Childhood/Elementary program leads to a PK-4 teaching certificate, thus qualifying the graduate for employment in any level pre-kindergarten through fourth grade. The dual Special Education/ PK-4 program leads to both PK-4 and special education certification. Those students choosing the Elementary/Middle Level program will select either one or two subjects in which they will be certified for the fourth through eighth grade level. The subject areas are: Social Studies, Language Arts, Math or Science. If a student selects the option to be certified in two subjects, one of the subjects must be math or science.

The curriculum for the programs can be divided into two parts: first, the university’s General Education requirements; and secondly, the education certification course requirement which focus on the particular grade band that a student will be certified to teach. Students must successfully complete the PAPA by a designated point before being permitted to continue, and complete required coursework with grades of “C” or higher. They must also have a 3.0 grade point average before gaining entry into either program.

Students need to demonstrate initiative, patience, and empathy for children as they learn to plan and guide the child’s program and to observe the child’s application of skills and knowledge. Their program emphasizes knowing how and when to help the child learn using a reflective model of teaching. Through study, direct observation, and participation, students grow in understanding various methods of teaching and become skillful in the use of curriculum materials and specialized equipment. They critically examine various courses of study and the newer techniques of measuring and assessing children’s social and academic growth.


Hockersmith, P.E., School of Education and Human Services, June 2005.

Updated: Royce, C., Teacher Education, Shippensburg University, July, 2009.

Entry Requirements

For admission into one of the program areas in the Department of Teacher Education, complete and submit the application on the next page. Data used in the selection process include: your completed application form which includes a Statement of Commitment, high school and college GPA. If you are selected, you will be notified prior to scheduling so that you can select appropriate courses.

Required: a minimum 3.0 GPA from Shippensburg prior to completing the application.

Suggestions: Have an academic advisor read the Statement of Commitment prior to submitting the application.
INTRA-CAMPUS TRANSFER

The screening procedures for students currently enrolled in programs at Shippensburg University who seek admission to programs within the Teacher Education Department.

1. Opportunity for transfer is provided throughout the fall and spring semesters. Applications will only be considered after a GPA of at least 15 credits is established. A completed hard-copy application must be delivered to the Teacher Education office.

2. Data used in the decision process are:
   a. Completed application form (submitted on time)
   b. University GPA – 3.0 required
   c. Statement of Professional Commitment (Please respond to the following prompts)
      i. Why have you chosen this career?
      ii. What abilities or qualities do you have to offer this profession?
      iii. Why do you want to work with children?
   d. Communication Skills
      i. Basic Oral Communication
      ii. College Writing

3. Print a copy of your transcript and attach to this application.

4. Additional requirements for applicants with 60 credits or enrolling in junior level classes:
   a. Passing scores on Basic Skills Test.

5. Before student teaching all D and F grades must be repeated in a face-to-face regular semester or summer class at Shippensburg University.

Applicants will be ranked and offered admission as space becomes available.

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>SU#</th>
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Local Address

<table>
<thead>
<tr>
<th>SU GPA</th>
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Local Address (City, State, Zip)

<table>
<thead>
<tr>
<th>Current Major</th>
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Local Phone Number

<table>
<thead>
<tr>
<th>Proposed Major</th>
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If Mid-Level, proposed Concentration

<table>
<thead>
<tr>
<th>Credits (as of date submitted)</th>
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<tbody>
<tr>
<td></td>
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Email Address

<table>
<thead>
<tr>
<th>Current Advisor</th>
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</table>
FOR STUDENTS INTERESTED IN TEACHING SECONDARY EDUCATION

Shippensburg University has no Secondary Education Department. All students interested in teaching in a specific discipline must apply directly to the department as the degree will be a degree in the subject area with certification added.

Most secondary programs can be completed in 4 years. In situations where a student wants to complete requirements for more than one certification area, an additional semester may be needed. Field work beginning in the first education course (American School) and additional department requirements must be completed. All secondary majors must achieve a B average by graduation in order to be certified in the state of Pennsylvania.

Entry Requirements for all education majors:
1. A minimum 3.0 Grade Point Average.
2. Declare at the beginning of each semester.
3. Discuss the major with education professors who teach the secondary methods courses.

Suggestions: Contact the College of Education and Human Services at 477-1487 if you have questions regarding secondary education programs.
## CRIMINAL JUSTICE, B.S.

Requirements for Criminal Justice major ≈ 60 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

### Social & Behavioral Science Requirements (9 cr)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLS 100</td>
<td>U.S. Government &amp; Politics</td>
<td>3 cr</td>
</tr>
<tr>
<td>PSY 101</td>
<td>General Psychology</td>
<td>3 cr</td>
</tr>
<tr>
<td>SOC 101</td>
<td>Introduction to Sociology</td>
<td>3 cr</td>
</tr>
</tbody>
</table>

### Required Core (21 cr)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 100</td>
<td>Intro to Criminal Justice</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 261</td>
<td>Criminal Law &amp; Procedures</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 221</td>
<td>Policing a Democracy</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 241</td>
<td>Survey of Corrections</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 309</td>
<td>Theories of Crime &amp; Crime Control</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 310</td>
<td>Research Methods</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 452</td>
<td>Race, Ethnicity &amp; Crime</td>
<td>3 cr</td>
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</tbody>
</table>

### Capstone Course (3 cr)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 454</td>
<td>Policy, Professionalism, and Ethics</td>
<td>3 cr</td>
</tr>
</tbody>
</table>

### Criminal Justice Electives (21 cr)

Select 7 of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 321</td>
<td>Criminal Investigation</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 326</td>
<td>Victimology: The Victim and the Law</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 336</td>
<td>Introduction to Forensic Science</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 342</td>
<td>Crime Prevention</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 345</td>
<td>Organization &amp; Mgmt of CRJ Agencies</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 351</td>
<td>Juvenile Justice</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 356</td>
<td>Organized Crime</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 363</td>
<td>Intimate Partner Violence</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 365</td>
<td>White Collar Crime</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 370</td>
<td>Mock Trial</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 390</td>
<td>Selected Topics in Criminal Justice</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 393</td>
<td>Selected Topics in Criminal Justice</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 396</td>
<td>Selected Topics in Criminal Justice</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 397</td>
<td>Selected Topics in Criminal Justice</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 411</td>
<td>Terrorism</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 433</td>
<td>Evidence Law</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 440</td>
<td>Community Corrections</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 456</td>
<td>Forensic Science: Evidence Analysis</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 461</td>
<td>Social Construction of Homicide</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 463</td>
<td>Comparative Criminal Justice</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 464</td>
<td>Popular Culture, Crime and Justice</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 466</td>
<td>Women and Criminal Justice</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 471</td>
<td>Internship in Criminal Justice I</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 472</td>
<td>Internship in Criminal Justice II</td>
<td>3 cr</td>
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<tr>
<td>CRJ 473</td>
<td>Internship in Criminal Justice III</td>
<td>3 cr</td>
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<tr>
<td>CRJ 474</td>
<td>Internship in Criminal Justice IV</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 490</td>
<td>Selected Topics in Criminal Justice</td>
<td>3 cr</td>
</tr>
<tr>
<td>CRJ 491</td>
<td>Selected Topics in Criminal Justice</td>
<td>3 cr</td>
</tr>
</tbody>
</table>

Each section of Internship is 3 crs & requires 120 hrs of agency work. Therefore, 3 credits = 120 hrs of work, 6 credits = 240 hrs and so on. **Departmental approval is required.**

### Interdisciplinary Courses (15 cr)

Criminal Justice and Military Science courses will not fulfill this requirement.

- ______________ (at least 200 level)
- ______________ (at least 200 level)
- ______________ (at least 200 level)
- ______________ (at least 200 level)
- ______________ (at least 200 level)

### Graduation Requirements: 120 cr

Free Electives: 15 cr

GPA Needed to Declare: 2.6

Criminal Justice majors are limited to 45 credits of CRJ courses. CRJ courses cannot be used for Free Electives or for Interdisciplinary Courses.

A Criminal Justice minor is available – 18 cr

**Disclaimer:** Courses may be subject to change.
EXERCISE SCIENCE, B.S.

Requirements for Exercise Science major ≈ 54 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements.

Exercise Science Core (25 cr)
- ESC 150 – Introduction to Kinesiology (3 cr)
- ESC 244 – Mechanical Analysis of Sports Skills (3 cr)
- ESC 260 – Principles of Nutrition (3 cr)
- ESC 336 – Motor Behavior (3 cr)
- ESC 340 – Prevention and Care of Athletic Injuries (3 cr)
- ESC 352 – Psychology of Physical Activity (3 cr)
- ESC 375 – Exercise Testing and Prescription (3 cr)
- ESC 453 – Research Design & Statistics (4 cr)

Biology Requirements (8-16 cr)
- BIO 237 – Human Anatomy & Physiology I (4 cr) **
- BIO 238 – Human Anatomy & Physiology II (4 cr) 

Chemistry Requirements (3-4 cr)
Select one:
- CHM 103 – Chemistry: A Cultural Approach (3 cr) **
OR
- CHM 105 – An Observational Approach (3 cr) **
OR
- CHM 121 – Chemical Bonding (3 cr) ** AND
  CHM 125 – Lab IB-Stoichiometry & Reactions (1 cr)

Physics Requirements (3-4 cr)
Select one:
- PHY 110 – Physics for Society (3 cr) **
OR
- PHY 121 – Intro Physics I-Lecture (3 cr) ** AND
  PHY 123 – Physics I-Lab (1 cr) 

Math Requirement (3-4 cr)
Select one:
- MAT 117 – Applied Statistics (3 cr) **
OR
- MAT 217 – Statistics I (4 cr) **

Psychology Requirement (3 cr)
- PSY 101 – General Psychology (3 cr) **

Allied Health Pre-Professional Concentration (25 cr)
- ESC 278 – Medical Terminology (3 cr)
- ESC 321 – Exercise Physiology (4 cr)
- ESC 333 – Biomechanics (4 cr)
- ESC 420 – Clinical Exercise Physiology (4 cr)
- ESC 421 – Exercise Physiology II (4 cr)
- ESC 395 – Internship (3-12 cr)
Select one:
- ESC 207 – Stress Management (3 cr) OR
- ESC 213 – Org & Admin Fit Sport Fac (3 cr) OR
- ESC 325 – Sports Psychology (3 cr) OR
- ESC 333 – Biomechanics (4 cr) OR
- ESC 360 – Sports Medicine (3 cr) OR
- ESC 425 – Ex Met & Wt Contr (3 cr) OR
- ESC 452 – Psych of Injury & Rehab OR
- ESC 495 – Internship (3-12 cr)

Human Performance & Fitness Concentration (25 cr)
- ESC 343 – Foundations of Ex Phys (4 cr)
- ESC 348 – Group Exercise Tech & Lead (3 cr)
- ESC 350 – Nutrition Sport/Fit (3 cr)
- ESC 387 – Theory & Prac Power & Agility Tr (3 cr)
- ESC 475 – Ex Prescription for Special & Athletic Pop (3 cr)
- ESC 495 – Internship (3-12 cr)
Select two:
- ESC 207 – Stress Management (3 cr) OR
- ESC 213 – Org & Admin Fit Sport Fac (3 cr) OR
- ESC 325 – Sports Psychology (3 cr) OR
- ESC 333 – Biomechanics (4 cr) OR
- ESC 360 – Sports Medicine (3 cr) OR
- ESC 425 – Ex Met & Wt Contr (3 cr) OR
- ESC 452 – Psych of Injury & Rehab OR
- ESC 495 – Internship (3-12 cr)

Optional Coaching minor (9 cr)
- ESC 220 – Fundamentals of Coaching (3 cr)
- ESC 325 – Sport Psychology (3 cr)
Select one:
- ESC 213 – Org & Admin Fit Sport Fac (3 cr) OR
- ESC 445 – Coaching Internship (3 cr) OR
- HCS 225 – Communication & Sport (3 cr) OR
- SOC 275 – Sociology of Sport & Leisure (3 cr)

Optional Power, Agility & Group Exercise Certificate (6 cr)
- ESC 348 – Group Exercise Techniques & Leadership (3 cr)
- ESC 387 – Theory & Practice of Power & Agility (3 cr)

Graduation Requirements: 120 cr
Free Electives: 21 cr
GPA Needed to Declare: 2.5

Transfer students, both internal and external, are selected for admission based on the following criteria: Academic proficiency in college or university course work, including a 2.75 QPA, and completion of 15 credits, including a C or better in BIO 161, BIO 162 or BIO 237. Selection is competitive and students will be selected from those who fulfill the above requirements.

Disclaimer: Courses may be subject to change.
SOCIAL WORK, B.S.W.

Requirements for Social Work major ≈ 55 cr

General Education requirements not listed here. Courses marked with the double asterisk ** may count as general education requirements.

**Social Work Core (55 cr)**
- SWK 102 – Social Work in Social Welfare (3 cr)
- SWK 150 – Human Relations Lab (3 cr)
- SWK 250 – Assessing Individuals in Social Enviro. (3 cr)
- SWK 265 – Understanding Diversity for SW Practice (3 cr)
- SWK 270 – Social Work Practice with Individuals (3 cr)
- SWK 375 – Social Work Skills for Working w/ Groups (3 cr)
- SWK 327 – Social Work Practice with Families (3 cr)
- SWK 340 – Assessing Orgs. & Communities in Society (3 cr)
- SWK 360 – Research Techniques for Social Workers (3 cr)
- SWK 370 – SW Practice with Orgs. & Communities (3 cr)
- SWK 420 – Gender Issues for Helping Professionals (3 cr)
- SWK 450 – Social Welfare Policies and Services (3 cr)
- SWK 388 – Preparation for Practicum (1 cr)
- SWK 462 – Seminar in Social Work Methods (3 cr)*
- SWK 460 – Field Work in Social Work I (6 cr)*
- SWK 461 – Field Work in Social Work II (6 cr)*

**Social Work Electives (3 cr)**
Select at least one:
- SWK 262 – Introduction to Child Welfare Practice (3 cr)
- SWK 347 – Behavioral Health (3 cr)
- SWK 348 – Substance Abuse (3 cr)
- SWK 351 – Aging (3 cr)
- SWK 356 – Intellectual & Develop. Disabilities (3 cr)
- SWK 357 – Health Care (3 cr)
- SWK 358 – Schools (3 cr)
- SWK 359 – Violence in Interpersonal Relationships (3 cr)
- SWK 383 – Selected Topics in Social Welfare (1-3 cr)
- SWK 490 – Selected Topics in Social Welfare (1-3 cr)

**Allied Field Requirements (15-16 cr)**
- MAT 117 – Applied Statistics (3 cr)**
- PSY 101 – General Psychology (3 cr)**
- BIO 150 – Human Biology (3 cr)**
- SOC 101 – Introduction to Sociology (3 cr)**
- PLS 100 – U.S. Government and Politics (3 cr)**

Graduation Requirements: 120 cr
Free Electives: 17 cr
GPA Needed to Declare: 2.2 at 30 cr, 2.4 at 31-59 cr, 2.5 at 60+ cr

**Professional Standing** – Professional standing will only be granted after students successfully complete a formal admission process which occurs during the semester they are enrolled in SWK270. A 2.5 GPA is needed for professional standing.

**HELPFUL HINTS FOR ADVISING**

Semester I
- SWK 102 – Social Work in Social Welfare
- BIO 150 – Human Biology
- SOC 101 – Intro. to Soc.
- HIS 105 – Historical Foundations
- ENG 114 – Academic Writing

Semester II
- SWK 150 – Human Relations Lab
- PSY 101 – General Psych.
- HCS 100 – Human Comm.

Semester III
- SWK 250 – Assess. Ind.
- SWK 265 – Understanding Diversity
- PLS 100 – U. S. Government and Politics
- MAT 117 – Applied Statistics

Semester IV
- SWK 270 – SW Practice with Individuals
- SWK 360 – Research Techniques
- SWK 383 – Selected Topics in Social Welfare
- SWK 360 – Research Techniques

Disclaimer: Courses may be subject to change.
EARLY CHILDHOOD/ELEMENTARY EDUCATION, B.S.ED.

Requirements for Early Childhood/Elementary Education major = 75 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements. See Degree Audit or Elem: Early Childhood (PreK-4) Planning Sheet on Department of Teacher Education webpage for General Education requirements.

Mathematics Requirement (6 cr)
__MAT 110 – Fundamentals of Math I (3 cr) **
__MAT 111 – Fundamentals of Math II (3 cr)

Professional Core (60 cr)
__ECH 210 – The Early Childhood Profession (3 cr)
__ECO 220 – Developmental Sci: Physical, Motor, Health (3 cr)
__ECH 260 – Developmental Sci: Cognitive & Language (3 cr)
__ECH 320 – Developmental Sci: Social & Emotional (3 cr)
__ECH 333 – Social Studies Methods for PK-4th Grade (3 cr)
__ECH 343 – Mathematics Methods I for Pre-K & K (3 cr)
__ECH 370 – Assessing Young Children (3 cr)
__ECH 373 – Science and Technology Methods in PK-4 (3 cr)
__ECH 393 – Mathematics Methods II, Grades 2-4 (2 cr)
__ECH 394 – Technology Instruction (1 cr)
__ECH 415 – Professional Practicum in PK-4 (3 cr)
__ECH 440 – Building Family & Community Partner (3 cr)
__ECH 453 – Integrated Curriculum Pre K-4 (3 cr)
__ECH 480 – Early Childhood Professional Seminar (3 cr)
__EEC 273 – Introduction to Exceptionalities (3 cr)
__EEC 423 – Effective Instructional Strategies (3 cr)
__EEC 483 – Assessing Children with Exceptionalities (3 cr)
__RDG 323 – Processes of Word/Text/Comprehension (3 cr)
__RDG 363 – Reading and Writing in PK-4 (3 cr)
__RDG 383 – English Language Learners in PK-4 (2 cr)
__RDG 443 – Reading Measures & Interventions in PK-4 (4 cr)

Student Teaching (12 cr)
__ECH 489 – Early Childhood Student Teaching (12 cr)

Optional Reading Minor (15 cr)
__RDG 334 – Classroom Literacy Assessment (Winter Online)
__RDG 330 – Content Area Reading (Summer Online)
__RDG 345 – Teaching Language Arts (Summer F-to-F)
__RDG 340 – Seminar in Literacy Tutoring (Summer F-to-F)
__RDG 350 – Text Accessibility & Compr (Summer Online)

Graduation Requirements: 120 cr
Free Electives: 0 cr
GPA Needed to Declare: 3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

HELPFUL HINTS FOR ADVISING:

Semesters I & II General Education courses

Disclaimer: Courses may be subject to change.
ELEMENTARY/MIDDLE LEVEL EDUCATION: GRADES 4-8, 
ENGLISH/LANGUAGE ARTS CONCENTRATION, B.S.ED.

Requirements for Elementary/Middle Level Education major with English/Language Arts Concentration ≈ 72 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements. See Degree Audit or Elementary/Middle Level Education Planning Sheet on the Department of Teacher Education webpage for General Education requirements.

Required Psychology Course (3 cr)
__PSY 101 – General Psychology (3 cr) **

Mathematics Requirements (9 cr)
__MAT 205 – Conceptual Mathematics for Middle-Level (3 cr)
__MAT 140 A or B – College Algebra (3 cr) **
Select one:
__MAT 117 – Applied Stats (3 cr) [math placement 2-4] ** OR
__MAT 217 – Statistics I (3 cr) [math placement 5-6] **

Professional Core (36 cr)
__TCH 206 – Social Foundations of Middle Level Ed (3 cr)
__TCH 261 – Adolescent Development & Learning (3 cr)
__EEC 483 – Assessing Children with Exceptionalities (3 cr)
__EEC 273 – Intro to Exceptionalities (3 cr)
__EEC 423 – Effective Instructional Strategies (3 cr)
__RDG 232 – Reading in the Elementary School (3 cr)
__RDG 329 – Reading in the Content Area (3 cr)
__RDG 405 – Writing in Elementary Classrooms (3 cr)
__TCH 251 – Elements of Middle Level Instruction (3 cr)
__TCH 322 – Teaching Middle Level Language Arts (3 cr)
__TCH 345 – Assessment & Evaluation (3 cr)
__RDG 413 – Teaching Reading to ELL (3 cr)

Concentration Area (15 cr)
__TCH 303 – Books and Materials (3 cr)
__ENG 224 – Intro to Creative Writing (3 cr)
__ENG 366 – History and Str of English Language (3 cr)
__ENG 426 – Adolescent Literature (3 cr)
Select one:
__ENG 234 – American Literature II (3 cr) OR
__ENG 236 – British Literature I (3 cr) OR
__ENG 237 – British Literature II (3 cr) OR
__ENG 239 – Postcolonial Literature (3 cr) OR
__ENG 240 – Global Literature (3 cr) OR
__ENG 342 – Mythology (3 cr) OR
__ENG 345 – Women’s Literature (3 cr) OR
__ENG 349 – Victorian Literature (3 cr) OR
__ENG 358 – Ethnic Literature (3 cr) OR
__ENG 359 – Native American Literature (3 cr) OR
__ENG 362 – Disability in Literature (3 cr) OR
__ENG 375 – African-American Literature (3 cr) OR
__ENG 385 – Studies in Postcolonial Literature (3 cr)

Student Teaching Requirement (15 cr)
__EDU 409 – Seminar Middle Lvl Student Teaching (3 cr)
__EDU 495 – Student Teaching & Practicum (12 cr)

Optional Special Education Concentration (18 cr)
__EEC 280 – Best Practices in Collaboration (3 cr)
__EEC 320 – Interventions (3 cr)
__EEC 325 – Interventions (3 cr)
__EEC 330 – Teaching Students with Exceptionalities (3 cr)
__EEC 335 – Interventions (3 cr)
__EEC 447 – Special Education Processes (3 cr)

Graduation Requirements: 120 cr
Free Electives: 3 cr
GPA Needed to Declare:  3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

HELPFUL HINTS FOR ADVISING

Semesters I & II General Education

Disclaimer: Courses may be subject to change.
ELEMENTARY/MIDDLE LEVEL EDUCATION: GRADES 4-8, MATH & LANGUAGE ARTS CONCENTRATION, B.S.ED.

Requirements for Elementary/Middle Level Education with Math and Language Arts Concentration ≈ 76-79 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements. See Degree Audit or Elementary/Middle Level Education Planning Sheet on the Department of Teacher Education webpage for General Education requirements.

Required Psychology Course (3 cr)
   __PSY 101 – General Psychology (3 cr) **

Mathematics Concentration (19-20 cr)
   __MAT 105 – Mathematics for Liberal Studies (3 cr)
   __MAT 205 – Conceptual Mathematics for Middle-Level (3 cr)
   __MAT 225 – Discrete Mathematics (4 cr) **

Select one:
   __MAT 181 – Applied Calculus (3 cr) ** OR
   __MAT 175 – Pre-Calculus (3 cr) ** OR
   __MAT 211 – Calculus I (4 cr) **

Select one:
   __MAT 333 – Geometry (3 cr) OR
   __MAT 400 – History of Math (3 cr) OR
   __MAT 317 – Statistics II (3 cr)

Select one:
   __MAT 117 – Applied Statistics (3 cr) ** OR
   __MAT 217 – Statistics I (3 cr) **

Language Arts Concentration (12 cr)
   __ENG 250 – Introduction to Literature (3 cr) **
   __TCH 303 – Books and Materials (3 cr)
   __ENG 366 – History & Str. of English Language (3 cr)
   __ENG 426 – Adolescent Literature (3 cr)

Professional Core (39 cr)
   __TCH 206 – Social Foundations of Middle Level Ed (3 cr)
   __TCH 261 – Adolescent Development & Learning (3 cr)
   __EEC 483 – Assessing Children with Exceptionalities (3 cr)
   __EEC 273 – Intro to Exceptionalities (3 cr)
   __EEC 423 – Effective Instructional Strategies (3 cr)
   __RDG 232 – Reading in the Elementary School (3 cr)
   __RDG 329 – Reading in the Content Area (3 cr)
   __RDG 405 – Writing in Elementary Classrooms (3 cr)
   __TCH 251 – Elements of Middle Level Instruction (3 cr)
   __TCH 322 – Teaching Middle Level Language Arts (3 cr)
   __TCH 342 – Teaching Middle Level Math (3 cr)
   __TCH 345 – Assessment & Evaluation (3 cr)
   __RDG 413 – Teaching Reading to ELL (3 cr)

Student Teaching Requirement (15 cr)
   __EDU 409 – Seminar Middle Level Student Teaching (3 cr)
   __EDU 495 – Student Teaching & Practicum (12 cr)

Graduation Requirements: 120 cr
Free Electives: 0 cr
GPA Needed to Declare: 3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

HELPFUL HINTS FOR ADVISING

Semesters I & II General Education & Concentration

Disclaimer: Courses may be subject to change.
ELEMENTARY/MIDDLE LEVEL EDUCATION: GRADES 4-8, MATH & SCIENCE CONCENTRATION, B.S.ED.

Requirements for Elementary/Middle Level Education with Math and Science Concentration = 78-80 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements. See Degree Audit or Elementary/Middle Level Education Planning Sheet on the Department of Teacher Education webpage for General Education requirements.

Required Psychology Course (3 cr)
  _PSY 101 – General Psychology (3 cr)**

Mathematics Concentration (19-20 cr)
  _MAT 105 – Mathematics for Liberal Studies (3 cr)
  _MAT 205 – Conceptual Mathematics for Middle-Level (3 cr)
  _MAT 225 – Discrete Math (4 cr)**

Select one:
  _MAT 181 – Applied Calculus (3 cr)** OR
  _MAT 175 – Pre-Calculus (3 cr)** OR
  _MAT 211 – Calculus I (4 cr)**

Select one:
  _MAT 333 – Geometry (3 cr) OR
  _MAT 400 – History of Math (3 cr) OR
  _MAT 317 – Statistics II (3 cr)

Select one:
  _MAT 117 – Applied Statistics (3 cr)** OR
  _MAT 217 – Statistics I (3 cr)**

Science Concentration (20 cr)
  _CHM 105 – An Observational Approach (3 cr)
  _ESS 110 – Intro to Geology (3 cr)
  _PHY 121 – Physics I Lecture (3 cr)**
  _PHY 123 – Physics I Lab (1 cr)
  _ESS 111 – Intro to Atmosphere (3 cr)**
  _BIO 162 – Prin. of Bio: Organismal Diversity (4 cr)**

Select one:
  _BIO 100 – Basic Biology (3 cr) OR
  _BIO 142 – Intro to Ecology (3 cr) OR
  _BIO 145 – Environmental Biology (3 cr) OR
  _ESS 210 – Physical Geology (3 cr)

Professional Core (27 cr)
  _TCH 206 – Social Foundations of Middle Level Ed (3 cr)
  _TCH 261 – Adolescent Development & Learning (3 cr)
  _EEC 483 – Assessing Children with Exceptionalities (3 cr)
  _EEC 273 – Introduction to Exceptionalities (3 cr)
  _EEC 423 – Effective Instructional Strategies (3 cr)
  _RDG 232 – Reading in the Elementary School (3 cr)
  _RDG 329 – Reading in the Content Area (3 cr)
  _RDG 405 – Teaching Writing in 4-8 Classrooms (3 cr)
  _TCH 345 – Assessment & Evaluation Strategies (3 cr)
  _TCH 342 – Teaching Middle Level Math (3 cr)
  _TCH 366 – Teaching Science at the Middle Level (3 cr)
  _RDG 413 – Teaching Reading to ELL (3 cr)

Student Teaching (15 cr)
  _EDU 409 – Seminar Middle Level Student Teaching (3 cr)
  _EDU 495 – Student Teaching & Practicum (12 cr)

Graduation Requirements: 120 cr
Free Electives: 0 cr
GPA Needed to Declare: 3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

HELPFUL HINTS FOR ADVISING

Semesters I & II General Education
Disclaimer: Courses may be subject to change.
Requirements for Elementary/Middle Level Education major with Math and Social Studies Concentration ≈ 76-78 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements. See Degree Audit or Elementary/Middle Level Education Planning Sheet on the Department of Teacher Education webpage for General Education requirements.

Psychology Requirement (3 cr)
__PSY 101 – General Psychology (3 cr) **

Mathematics Concentration (19-20 cr)
__MAT 105 – Mathematics for Liberal Studies (3 cr)
__MAT 205 – Conceptual Mathematics for Middle-Level (3 cr)
__MAT 225 – Discrete Mathematics (4 cr) **
Select one:
__MAT 181 – Applied Calculus (3 cr) ** OR
__MAT 175 – Pre-Calculus (3 cr) ** OR
__MAT 211 – Calculus I (4 cr) **
Select one:
__MAT 333 – Geometry (3 cr) OR
__MAT 400 – History of Math (3 cr) OR
__MAT 317 – Statistics II (3 cr)
Select one:
__MAT 117 – Applied Statistics (3 cr) ** OR
__MAT 217 – Statistics I (3 cr) **

Social Studies Concentration (18 cr)
__GEO 101 – World Geography (3 cr) **
__ECO 101 – Principles of Macroeconomics (3 cr) **
__PLS 100 – U.S. Government and Politics (3 cr) **
__GEO 140 – Cultural Geography (3 cr) **
__HIS 106 – Thinking Historically in a Global Age (3 cr) **
Select one:
__ECO 345 – Economics of Growth & Development (3 cr)
__PLS 311 – Legislative Process (3 cr)
__PLS 312 The American Presidency (3 cr)
__PLS 313 – The Judicial Process (3 cr)
__PLS 342 – American Foreign Policy (3 cr)
__PLS 356 – Politics of Developing Regions (3 cr)
__HIS 201 – Early History of the US (3 cr)
__HIS 202 – Recent History of the US (3 cr)
__HIS 301 – The West in American History (3 cr)
__HIS 302 – American Economic History (3 cr)
__HIS 304 – American Diplomatic History (3 cr)
__HIS 305 – The Civil War (3 cr)
__HIS 306 – History of the South (3 cr)
__HIS 309 – History of the American Worker (3 cr)
__HIS 314 – Jacksonian America (3 cr)
__HIS 318 – History of US Women (3 cr)
__HIS 338 – Colonial America (3 cr)
__HIS 341 – African American History (3 cr)
__HIS 342 – US Immigration & Ethnicity (3 cr)
__HIS 345 – Military History of the US (3 cr)
__HIS 402 – Revolutionary America (3 cr)
__HIS 413 – Pennsylvania History (3 cr)

Professional Core (39 cr)
__TCH 206 – Social Foundations of Middle Level Ed (3 cr)
__TCH 261 – Adolescent Development & Learning (3 cr)
__EEC 483 – Assessing Children with Exceptionalities (3 cr)
__EEC 273 – Intro to Exceptionalities (3 cr)
__EEC 423 – Effective Instructional Strategies (3 cr)
__RDG 232 – Reading in the Elementary School (3 cr)
__RDG 329 – Reading in the Content Area (3 cr)
__RDG 405 – Writing in Elementary Classrooms (3 cr)
__TCH 251 – Elements of Middle Level Instruction (3 cr)
__TCH 342 – Teaching Middle Level Math (3 cr)
__TCH 345 – Assessment Evaluation (3 cr)
__TCH 348 – Teaching Middle Level Social Studies (3 cr)
__RDG 413 – Teaching Reading to ELL (3 cr)

Student Teaching (15 cr)
__EDU 409 – Seminar Middle Level Student Teaching (3 cr)
__EDU 495 – Student Teaching and Practicum (12 cr)

Graduation Requirements: 120 cr
Free Electives: 0 cr
GPA Needed to Declare: 3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

HELPFUL HINTS FOR ADVISING

Semesters I & II General Education & Concentration

Disclaimer: Courses may be subject to change.
Requirements for Elementary/Middle Level Education major with Mathematics Concentration ≈ 67 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements. See Degree Audit or Elementary/Middle Level Education Planning Sheet on the Department of Teacher Education webpage for General Education requirements.

Required Psychology Course (3 cr)
__PSY 101 – General Psychology (3 cr)**

Mathematics Concentration (22-24 cr)
__MAT 105 – Mathematics for Liberal Studies (3 cr)**
__MAT 205 – Conceptual Mathematics for Middle-Level (3 cr)
__MAT 225 – Discrete Mathematics (4 cr)**
__MAT _______________ (200+ level)
Select one:
__MAT 181 – Applied Calculus (3 cr)
OR
__MAT 175 – Pre-Calculus (3 cr)
OR
__MAT 211 – Calculus I (4 cr)
Select one:
__MAT 333 – Geometry (3 cr)
OR
__MAT 400 – History of Math (3 cr)
OR
__MAT 317 – Statistics II (3 cr)
Select one:
__MAT 117 – Applied Statistics (3 cr)**
OR
__MAT 217 – Statistics I (3 cr)**

Professional Core (36 cr)
__TCH 206 – Social Foundations of Middle Level Ed (3 cr)
__TCH 261 – Adolescent Development & Learning (3 cr)
__EEC 483 – Assessing Children with Exceptionalities (3 cr)
__EEC 273 – Intro to Exceptionalities (3 cr)
__EEC 423 – Effective Instructional Strategies (3 cr)
__RDG 232 – Reading in the Elementary School (3 cr)
__RDG 329 – Reading in the Content Area (3 cr)
__RDG 405 – Writing in Elementary Classrooms (3 cr)
__TCH 251 – Elements of Middle Level Instruction (3 cr)
__TCH 342 – Teaching Middle Level Math (3 cr)
__TCH 345 – Assessment & Evaluation (3 cr)
__RDG 413 – Teaching Reading to ELL (3 cr)

Student Teaching Requirement (15 cr)
__EDU 409 – Seminar Middle Level Student Teaching (3 cr)
__EDU 495 – Student Teaching & Practicum (12 cr)

Optional Special Education Concentration (18 cr)
__EEC 280 – Best Practices in Collaboration (3 cr)
__EEC 320 – Interventions (3 cr)
__EEC 325 – Interventions (3 cr)
__EEC 330 – Teaching Students with Exceptionalities (3 cr)
__EEC 335 – Interventions (3 cr)
__EEC 447 – Special Education Processes (3 cr)

Graduation Requirements: 120 cr
Free Electives: 8 cr
GPA Needed to Declare: 3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

HELPFUL HINTS FOR ADVISING

Semesters I & II General Education & Concentration

Disclaimer: Courses may be subject to change.
ELEMENTARY/MIDDLE LEVEL EDUCATION: GRADES 4-8, SCIENCE & LANGUAGE ARTS CONCENTRATION, B.S.ED.

Requirements for Elementary/Middle Level Education major with Science & Language Arts Concentration ≈ 77-78 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements. See Degree Audit or Elementary/Middle Level Education Planning Sheet on the Department of Teacher Education webpage for General Education requirements.

Required Psychology Course (3 cr)
__PSY 101 – General Psychology (3 cr)**

Mathematics Requirements (10-11 cr)
__MAT 205 – Concepts of Middle Level Math (3 cr)
__MAT 225 – Discrete Mathematics (4 cr) **
Select one:
__MAT 117 – Applied Statistics (3 cr) **
OR
__MAT 217 – Statistics I (4 cr) **

Science Concentration (20 cr)
__CHM 105 – An Observational Approach (3 cr)
__ESS 110 – Intro to Geology (3 cr)
__PHY 121 – Physics I Lecture (3 cr) **
__PHY 123 – Physics I Lab (1 cr)
__ESS 111 – Intro to Atmosphere (3 cr) **
__BIO 162 – Prin. of Bio: Organismal Diversity (4 cr) **
Select one:
__ESS 210 – Physical Geography (3 cr) OR
__ESS 220 – Oceanography (3 cr) OR
__ESS 355 – Meteorology (3 cr) OR
__ESS 404 – Applied Meteorology & Climatology (3 cr)

Language Arts Concentration (12 cr)
__ENG 250 – Intro to Literature (3 cr) **
__TCH 303 – Books and Materials (3 cr)
__ENG 366 – History & Str. of English Language (3 cr)
__ENG 426 – Adolescent Literature (3 cr)

Professional Core (27 cr)
__TCH 206 – Social Foundations of Middle Level Ed (3 cr)
__TCH 261 – Adolescent Development & Learning (3 cr)
__EEC 483 – Assessing Children with Exceptionalities (3 cr)
__EEC 273 – Introduction to Exceptionalities (3 cr)
__EEC 423 – Effective Instructional Strategies (3 cr)
__RDG 232 – Reading in the Elementary School (3 cr)
__RDG 329 – Reading in the Content Area (3 cr)
__RDG 405 – Teaching Writing in 4-8 Classrooms (3 cr)
__TCH 322 – Teaching Middle Level Language Arts (3 cr)
__TCH 351 – Elements of Middle Level Instruction (3 cr)
__TCH 345 – Assessment & Evaluation (3 cr)
__TCH 366 – Teaching Science at the Middle Level (3 cr)
__RDG 413 – Teaching Reading to ELL (3 cr)

Student Teaching (15 cr)
__EDU 409 – Seminar Middle Level Student Teaching (3 cr)
__EDU 495 – Student Teaching & Practicum (12 cr)

Graduation Requirements: 120 cr
Free Electives: 0 cr
GPA Needed to Declare: 3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

HELPFUL HINTS FOR ADVISING

Semesters I & II General Education & Concentration

Disclaimer: Courses may be subject to change.
ELEMENTARY/MIDDLE LEVEL EDUCATION: GRADES 4-8, SCIENCE & SOCIAL STUDIES CONCENTRATION, B.S.ED.

Requirements for Elementary/Middle Level Education major with Science and Social Studies Concentration ≈ 77-78 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements. See Degree Audit or Elementary/Middle Level Education Planning Sheet on the Department of Teacher Education webpage for General Education requirements.

Required Psychology Course (3 cr)
__PSY 101 – General Psychology (3 cr)**

Mathematics Requirements (10 cr)
__MAT 205 – Conceptual Math for Middle-Level (3 cr)
__MAT 140A or B – College Algebra (3-4 cr)
Select one:
__MAT 117 – Applied Statistics (3 cr) **
OR
__MAT 217 – Statistics I (3 cr) **

Science Concentration (31 cr)
__ESS 110 – Intro to Geology (3 cr) **
__ESS 111 – Intro to Atmosphere (3 cr) **
__BIO 162 – Prin. of Biology: Cell Str. & Funct. (4 cr)
__CHM 105 – An Observational Approach (3 cr)
__PHY 121 – Physics I lecture (3 cr) **
__PHY 123 – Physics I Lab (3 cr)
Select one:
__BIO 100 – Basic Biology (3 cr)
OR
__BIO 142 – Intro to Ecology (3 cr)
OR
__BIO 145 – Environmental Biology (3 cr)
OR
__ESS 210 – Physical Geography (3 cr)

Social Studies Requirements (33 cr)
__HIS 105 – Foundations of Global Cultures (3 cr) **
__HIS 106 – Thinking Historically in a Global Age (3 cr) **
__ECO 101 – Principles of Macroeconomics (3 cr) **
__PLS 100 – US Government & Politics (3 cr) **
__GEO 140 – Human Geography (3 cr) **
__GEO 101 – World Geography (3 cr) **
__ECO 345 – Economics of Growth and Develop (3 cr)

Professional Core (36 cr)
__TCH 206 – Social Foundations of Middle Level Ed (3 cr)
__TCH 261 – Adolescent Development & Learning (3 cr)
__EEC 483 – Assessing Children with Exceptionalities (3 cr)
__EEC 273 – Introduction to Exceptionalities (3 cr)
__EEC 423 – Effective Instructional Strategies (3 cr)
__RDG 232 – Reading in the Elementary School (3 cr)
__RDG 329 – Reading in the Content Area (3 cr)
__RDG 405 – Teaching Writing in 4-8 Classrooms (3 cr)
__TCH 345 – Assessment & Evaluation Strategies (3 cr)
__TCH 348 – Teaching Middle Level Social Studies (3 cr)
__TCH 366 – Teaching Science at the Middle Level (3 cr)
__RDG 413 – Teaching Reading to ELL (3 cr)

Student Teaching Requirements (15 cr)
__EDU 409 – Seminar Middle Level Student Teaching (3 cr)
__EDU 495 – Student Teaching & Practicum (12 cr)

Graduation Requirements: 120 cr
Free Electives: 0 cr
GPA Needed to Declare: 3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

HELPFUL HINTS FOR ADVISING

Semesters I & II General Education & Concentration

Disclaimer: Courses may be subject to change.
Requirements for Elementary/Middle Level Education major with Science concentration ≈ 77-78 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements. See Degree Audit or Elementary/Middle Level Education Planning Sheet on the Department of Teacher Education webpage for General Education requirements.

Required Psychology Course (3 cr)
   __PSY 101 – General Psychology (3 cr)**

Mathematics Requirements (10 cr)
   __MAT 205 – Conceptual Mathematics for Middle-Level (3 cr)
   __MAT 225 – Discrete Mathematics (4 cr)**
Select one:
   __MAT 117 – Applied Statistics (3 cr)**
   OR
   __MAT 217 – Statistics I (3 cr)**

Science Concentration (31 cr)
   __ESS 110 – Intro to Geology (3 cr)**
   __ESS 111 – Intro to Atmosphere (3 cr)**
   __BIO 208 – Field Biology (3 cr)**
   __BIO 161 – Prin. of Biology: Organismal Diversity (4 cr)
   __BIO 162 – Prin. of Biology: Cell Str. & Funtct. (4 cr)
   __CHM 105 – An Observational Approach (3 cr)
   __PHY 121 – Physics I lecture (3 cr)
   __PHY 123 – Physics I Lab (3 cr)
Select one:
   __CHM 121 – Chemical Bonding (3 cr) AND
   __CHM 125 – Chemical Bonding Lab (1 cr)
   OR
   __PHY 122 – Physics II Lecture (3 cr) AND
   __PHY 125 – Physics II Lab (1 cr)
Select one:
   __ESS 210 – Physical Geography (3 cr)
   OR
   __ESS 220 – Oceanography (3 cr)
   OR
   __ESS 355 – Meteorology (3 cr)
   OR
   __ESS 404 – Applied Meteorology & Climatology (3 cr)

Professional Core (36 cr)
   __TCH 206 – Social Foundations of Middle Level Ed (3 cr)
   __TCH 261 – Adolescent Development & Learning (3 cr)
   __EEC 483 – Assessing Children with Exceptionalities (3 cr)
   __EEC 273 – Introduction to Exceptionalities (3 cr)
   __EEC 423 – Effective Instructional Strategies (3 cr)
   __RDG 232 – Reading in the Elementary School (3 cr)
   __RDG 329 – Reading in the Content Area (3 cr)
   __RDG 405 – Teaching Writing in 4-8 Classrooms (3 cr)
   __TCH 345 – Assessment & Evaluation Strategies (3 cr)
   __TCH 251 – Elements of Middle Level Instruction (3 cr)
   __TCH 366 – Teaching Science at the Middle Level (3 cr)
   __RDG 413 – Teaching Reading to ELL (3 cr)

Student Teaching Requirements (15 cr)
   __EDU 409 – Seminar Middle Level Student Teaching (3 cr)
   __EDU 495 – Student Teaching & Practicum (12 cr)

Optional Special Education Concentration (18 cr)
   __EEC 280 – Best Practices in Collaboration (3 cr)
   __EEC 320 – Interventions (3 cr)
   __EEC 325 – Interventions (3 cr)
   __EEC 330 – Teaching Students with Exceptionalities (3 cr)
   __EEC 335 – Interventions (3 cr)
   __EEC 447 – Special Education Processes (3 cr)

Graduation Requirements: 120 cr
Free Electives: 0 cr
GPA Needed to Declare: 3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing before 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

HELPFUL HINTS FOR ADVISING

Semesters I & II   General Education & Concentration

Disclaimer: Courses may be subject to change.
Elementary/Middle Level Education: Grades 4-8, Social Studies Concentration, B.S.Ed.

Requirements for Elementary/Middle Level Education major with Social Studies concentration ≈ 77-78 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements. See Degree Audit or Elementary/Middle Level Education Planning Sheet on the Department of Teacher Education webpage for General Education requirements.

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Math Requirements (9-10 cr)

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<td>MAT 205</td>
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<td>MAT 140 A/B</td>
<td>College Algebra (3-4 cr)</td>
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Social Studies Requirements (33 cr)

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<td>Foundations of Global Cultures (3 cr)**</td>
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<td>Thinking Historically in a Global Age (3 cr)**</td>
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<td>ECO 101</td>
<td>Principles of Macroeconomics (3 cr)**</td>
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<td>PLS 100</td>
<td>US Government &amp; Politics (3 cr)**</td>
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<td>GEO 140</td>
<td>Human Geography (3 cr)**</td>
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<td>GEO 101</td>
<td>World Geography (3 cr)</td>
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<td>Economics of Growth and Develop (3 cr)</td>
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<td>Geography of South &amp; Southeast Asia (3 cr) OR</td>
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Professional Core 36 cr

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<td>TCH 206</td>
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<td>EEC 483</td>
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<td>EEC 273</td>
<td>Intro to Exceptionalities (3 cr)</td>
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<td>EEC 423</td>
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<td>RDG 232</td>
<td>Reading in the Elementary School (3 cr)</td>
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<td>Elements of Middle Level Instruction (3 cr)</td>
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<td>Assessment &amp; Evaluation (3 cr)</td>
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<td>Teaching Middle Level Social Studies (3 cr)</td>
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<td>RDG 413</td>
<td>Teaching Reading to ELL (3 cr)</td>
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Student Teaching Requirement (15 cr)

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<td>EDU 409</td>
<td>Seminar Middle Lvl Student Teaching (3 cr)</td>
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<td>EDU 495</td>
<td>Student Teaching &amp; Practicum (12 cr)</td>
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Optional Special Education Concentration (18 cr)

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<td>EEC 280</td>
<td>Best Practices in Collaboration (3 cr)</td>
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<td>EEC 447</td>
<td>Special Education Processes (3 cr)</td>
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Graduation Requirements: 120 cr

Free Electives: 0 cr

GPA Needed to Declare: 3.0

PAPA examinations: All education majors must pass the first level of the PAPA assessments in reading, math, and writing between 48 and 60 credits of coursework. These basic skills tests must be passed before students are permitted to take any 300 level or above education course.

HELPFUL HINTS FOR ADVISING

Semesters I & II General Education & Concentration

Disclaimer: Courses may be subject to change.
SPECIAL EDUCATION & EARLY CHILDHOOD EDUCATION, B.S.ED.

Requirements for Special Education & Early Childhood Education major ≈ 90 cr

General Education program not listed here. Courses marked with the double asterisk ** may count as general education requirements. See Degree Audit or Early Childhood & Special Education Planning Sheet on the Department of Teacher Education webpage for General Education requirements.

Mathematics Requirement (6 cr)
- MAT 110 – Fundamentals of Math I (3 cr) **
- MAT 111 – Fundamentals of Math II (3 cr) **

Professional Core (75 cr)
- ECH 210 – The Early Childhood Profession (3 cr)
- ECH 280 – Physical, Language & Cognitive Develop. (3 cr)
- ECH 320 – Social & Emotional Basis (3 cr)
- ECH 333 – Social Studies Methods for PK-4th Grade (3 cr)
- ECH 370 – Assessing Young Children (3 cr)
- ECH 373 – Science and Technology Methods in PK-4 (3 cr)
- ECH 393 – Mathematics Methods II, Grades 2-4 (2 cr)
- ECH 394 – Technology Instruction (1 cr)
- ECH 415 – Professional Practicum in PK-4 (3 cr)
- ECH 440 – Building Family & Community Partner (3 cr)
- ECH 453 – Integrated Curriculum Pre K-4 (3 cr)
- ECH 480 – Early Childhood Professional Seminar (3 cr)
- EEC 273 – Introduction to Exceptionalities (3 cr)
- EEC 280 – Best Practices in Collaboration (3 cr)
- EEC 320 – Interventions for Comm. Impairments (3 cr)
- EEC 325 – Interventions for Social/Emotional (3 cr)
- EEC 330 – Teaching Students with Exceptionalities (3 cr)
- EEC 335 – Interventions for Cognitive and/or Physical (3 cr)
- EEC 423 – Effective Instructional Strategies (3 cr)
- EEC 447 – Special Education Processes (3 cr)
- EEC 483 – Assessing Children with Exceptionalities (3 cr)
- RDG 323 – Processes of Word/Text/Comprehension (3 cr)
- RDG 363 – Reading and Writing in PK-4 (3 cr)
- RDG 383 – English Language Learners in PK-4 (2 cr)
- RDG 443 – Reading Measures & Interventions in PK-4 (4 cr)

Student Teaching (12 cr)
- ESC 489 – Student Teaching & Practicum (12 cr)

Graduation Requirements: 135 cr
Free Electives: 0 cr
GPA Needed to Declare: 3.0

Disclaimer: Courses may be subject to change.
APPENDIX
REFERENCES


____ Students are. ACT National Center for the Advancement of Educational Practices.


Workshop conducted by Gurney Williams, national consultant, New York: NY. March 20, 1997.
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<th>Secretary</th>
<th>Director MBA Program</th>
<th>Director MBA Recruitment, Business Internships &amp; Entrepreneurial Outreach</th>
<th>Director, Charles H. Diller Jr. Center for Entrepreneurial Leadership &amp; Innovation</th>
<th>Accounting &amp; Management Information Systems</th>
<th>Finance &amp; Supply Chain Management</th>
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**COLLEGE OF EDUCATION AND HUMAN SERVICES**

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**OTHER DEPARTMENTS**

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<th>Associate Vice President &amp; Dean, Student Success</th>
<th>Academic Engagement and Exploratory Programs</th>
<th>Interim Director, Gateway Programs</th>
<th>Director of the Learning Center</th>
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