### Geoenvironmental (21 Credits, 7 classes)

**Physical Components: Air (select 1)**
- ESS 111 Introduction to Atmosphere
- GEO 203 Climatology
- ESS 207 Atmospheric Studies
- ESS 355 Meteorology
- ESS 404 Applied Meteorology

**Physical Components: Water**
- ESS 220 Oceanography
- GEO 226 Hydrology

**Physical Components: Land**
- ESS 110 Introduction to Geology
- GEO 210 Physical Geology

**Human Applications**
- ESS 108 Conservation of Natural Resources
- GEO 224 Soils
- GEO 306 Geomorphology
- GEO 309 Mineral and Rock Resources
- GEO 442 Environmental Geology
- GEO 444 Environmental Land Use Planning

**Technique Preparation**
- GEO 202 GIS I: Introduction to GIS
- GEO 339 Remote Sensing
- GEO 363 GIS II: Intermediate GIS
- GEO 420 GIS III: Advanced GIS
- GEO 440 Field Techniques

### Geoscience (21 Credits, 7 classes)

**Physical Components: Air**
- ESS 111 Introduction to Atmosphere
- GEO 203 Climatology
- ESS 207 Atmospheric Studies
- ESS 355 Meteorology

**Physical Components: Water**
- ESS 220 Oceanography
- GEO 226 Hydrology

**Physical Components: Land**
- ESS 110 Introduction to Geology
- GEO 210 Physical Geology

**Human Applications**
- GEO 224 Soils
- GEO 306 Geomorphology
- GEO 363 GIS II: Intermediate GIS
- GEO 420 GIS III: Advanced GIS
- GEO 425 Image Processing
- GEO 440 Field Techniques

**Technique Preparation**
- GEO 202 GIS I: Introduction to GIS
- GEO 222 Map and Air Photo Analysis
- GEO 339 Remote Sensing
- GEO 425 Image Processing
- GEO 440 Field Techniques

### Urban & Rural Planning (21 Credits, 7 classes)

**Related Courses**
- GEO 101 World Geography
- GEO 103 Geography of U.S. and Canada
- ESS 108 Conservation of Natural Resources
- GEO 230 Economic Geography
- GEO 310 Transportation Geography
- GEO 314 Industrial Geography
- GEO 322 Urban Geography

**Technique Preparation**
- GEO 202 GIS I: Introduction to GIS
- GEO 222 Map and Air Photo Analysis
- GEO 339 Remote Sensing
- GEO 363 GIS II: Intermediate GIS
- GEO 420 GIS III: Advanced GIS
- GEO 425 Image Processing
- GEO 440 Field Techniques

### GIS (Geo. Info. Systems; 18 credits, 6 classes)

**Required Core Courses**
- GEO 202 GIS I: Introduction to GIS
- GEO 339 Remote Sensing
- GEO 425 Image Processing
- GEO 440 Field Techniques
- GEO 441 Quantitative Methods in Geography

**Technique Preparation**
- GEO 251 Cartography
- GEO 339 Remote Sensing
- GEO 425 Image Processing
- GEO 440 Field Techniques
- GEO 441 Quantitative Methods in Geography

**Content Electives**
- ESS 210 Physical Geol., ESS 220 Oceanography,
- GEO 226 Hydrology, GEO 230 Economic Geo., GEO 244 Land
- GEO 301 Intro. to Biogeography, GEO 310 Trans. Geog,
- GEO 322 Urban Geog., GEO 444 Environmental Land Use Planning

Notes: Students declaring a major within the Geography-Earth Science Program may not complete a minor from the same program. Students may choose one of five minors: GIS, World Regional Systems, Geoenvironmental Studies, Urban-Rural Planning, or Geoscience. All students must declare a minor by obtaining the official forms from the Dean of Arts and Sciences office in Dauphin Humanities Center Room 225. At least 2 of the courses for the minor must be from the upper Division (300 or 400 level). An (*) indicates course has a prerequisite.
## General Education

### Required Skills and Competencies

<table>
<thead>
<tr>
<th>Category A — Logic and Numbers for Rational Thinking</th>
<th>Category B — Linguistic, Literary, Artistic, and Cultural Traditions</th>
<th>Category C — Biological &amp; Physical Sciences</th>
<th>Category D — Political, Economic, and Geographic Sciences</th>
<th>Category E — Social and Behavioral Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>(One course - 3 credit hours)</td>
<td>(3 courses - 9 credit hours)</td>
<td>(2 courses - 6 credit hours)</td>
<td>(2 courses - 6 credit hours)</td>
<td>(1 course, 3 credit hours)</td>
</tr>
</tbody>
</table>

**At Shippensburg, the study and investigation begins with the completion of courses, usually taken during a student's first or second year, in four required basic skills. These skills are fluency in writing, fluency in speaking, competency in math, and cultural awareness through historical perspective.**

To achieve these basic skills, undergraduates are required to take five courses for a total of 15 credit hours:

- **Fluency in Writing:** Students must take one of the following for 3 credit hours: ENG101 College Writing, or ENG110 Advanced Placement Writing.

- **Fluency in Speaking:** Students must take SPE100 Basic Oral Communication for 3 credit hours.

### Mathematical Competency

Students must take one mathematics course listed in Category A, Logic and Numbers for Rational Thinking, for 3 credit hours, or must place in the Advanced College Level through the university Mathematics Examination.

### Historical Perspectives

Students must take the following two courses for a total of 6 credit hours:

- HIS105 World History I
- HIS106 World History II

### Library/Information Skills

An integral aspect of the gen edu program is the development of library and information skills. This requirement is fulfilled through the completion of a self-paced, on-line tutorial which provides hands-on experience in finding information. All students enrolled in ENG101 (College Writing) or ENG110 Advanced Writing must complete this tutorial.

### Required Tutorial

The courses in this category emphasize the use of symbols as a means of expressing complex thoughts and information lucidly and accurately.

**One course must be taken from any of the following, with the exception the mathematics course selected under Basic Skills and Competencies may not be used for this requirement.**

- CP1001 Overview Computer Science
- CP1101 Microcomputer Basic
- MAT106 Math for Liberal Studies
- MAT108 Finite Math
- MAT110 Fundamentals of Math I
- MAT117 Applied Statistics
- MAT120 Basic Math Models
- MAT124 Pre-calculus
- MAT185 Prob w/Stats Reaoning
- MAT180 Applied Calculus I
- MAT121 Calculus I
- PHL101 Intro to Philosophy
- PHL102 Critical Thinking
- PHL105 Intro. to Phil. of Mind
- PHL105 Introduction to Ethical Theories and Problems

The courses are designed to acquaint the student with the richness and diversity of aspects of culture, especially in literary and artistic excellence.

**One course must be taken from the following two courses**

- Literature
- History

**Literature (one course)**

- EN243 The Art of the Film
- EN249 Intro to Culturally Diverse Literature of the U.S.
- EN250 Introduction to Literature

**Humanities (2 courses, diff. discs.)**

- ART101 Art Appreciation
- ART251 Art History I
- ART252 Art History II
- ART274 Intro. to Cultural Studies
- ART359 History of American Art
- ART451 Beginning French I
- ART452 Beginning French II
- ART453 Intermediate French
- ART455 French Civilization
- ART4520 Introduction to Reading
- ART4520 Inter. French Conver.
- ART4520 Commercial French I
- ART4521 Beginning German I
- ART4522 Beginning German II
- ART4525 Intermediate German
- ART4550 German Civ & Culture
- ART4520 Introduction to Reading
- ART4550, Inter. German Conver.
- ART4515 Commercial German
- MUS121 Introduction to Music
- MUS226 Opera & Music Theatre
- MUS241 World Music

**Course in this category have two comprehensive objectives: (1)**

- to make clear what kinds of problems in the physical world are susceptible to scientific investigation and what kinds of solutions such investigation can produce and (2) to provide an appreciation of the practice of scientific research and methodology, with its interaction of experiment and hypothesis.

**One course must be taken from those listed in the following disciplines:**

- ANT121 Physical Anthropology
- BION100 Basic Biology
- BION105 Biological Sciences: A Laboratory Approach
- BION105 Principles of Biology I
- BION141 Problems of the Environment
- BION105 Human Biology
- BION208 Field Biology
- BION248 Field Natural History
- CHEM03 Chemistry: A Cultural Approach
- CHEM105 Chemistry: An Observational Approach
- CHEM121 Chemical Bonding
- ESG105 Conservation of Natural Resources
- ESG105 Introduction to Geology
- ESG110 Introduction to the Atmosphere
- ESG1102 Physical Geology

**Physics Courses**

- PHYS08 Astronomy
- PHYS100 Physics for Society
- PHYS105 Physical Science: A Laboratory Approach
- PHYS121 Introduction to Physics I
- PHYS205 Intermediate Physics I

**Note:** Students majoring in the biological or physical sciences are permitted to count one course from their major department toward satisfying this requirement. Natural science courses which carry one of the above courses as a prerequisite and required science courses for elementary education majors may also be counted toward this requirement.

To complete the University diversity requirement, undergraduates are required to take one approved diversity course for a total of 3 credit hours. The following courses are the currently approved diversity courses:

- ART101 Art Appreciation
- CRJ251 Race, Ethnicity, & Crime
- ECH460 Family, School, & Comm. Partnership in Early Childhood Education
- ENG249 Intro to Exceptionality
- ENG240 Intro to Multicultural Lit.
- ENG240 Intro to Culturally Diverse Lit. of the U.S.
- ETH105 Intro. to Culturally Diverse Lit.
- GEO105 Cultural Geography
- GEO105 Geog U.S. & Canada
- WST100 Intro to Women's Sts.