Department of Geography & Earth Science Minors

Name: Address: Phone:

All courses are three credits unless noted in parentheses

Geoenvironmental (21 Credits, 7 classes)

Physical Components: Air (select 1) — When? Grade

- ESS 111 Introduction to Atmosphere
- GEO 203 Climatology
- ESS 207 Atmospheric Studies
- ESS 355 Meteorology
- ESS 404 Applied Meteorology*

Physical Components: Water (select 1)

- ESS 220 Oceanography *
- GEO 226 Hydrology

Physical Components: Land : (Select 1)

- ESS 110 Introduction to Geology
- ESS 210 Physical Geology

Human Applications: (Select 1)

- ESS 108 Conservation of Natural Resources
- GEO 224 Soils*
- GEO 306 Geomorphology

(Select 1)

- GEO 402 Medical Geography
- ESS 442 Environmental Geology*
- GEO 444 Environmental Land Use Planning

(Select 1)

- GEO 301 Introduction to Biogeography
- ESS 413 Mineral and Rock Resources*
- GEO 446 Water Resource Management

Technique Preparation: (Select 1)

- 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
- GEO 441 Quantitative Methods in Geography

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.

Geoscience (21 Credits, 7 classes)

Earth Materials & Processes (select 2) — When? Grade

- ESS 110 Introduction to Geology
- ESS 210 Physical Geology
- ESS 212 Historical Geology* REQUIRED

Physical Components: Air (select 1)

- ESS 111 Introduction to Atmosphere
- GEO 203 Climatology
- ESS 207 Atmospheric Studies
- ESS 355 Meteorology

Physical Components: Water (select 1)

- ESS 220 Oceanography*
- GEO 226 Hydrology

Human Applications: (select 1)

- GEO 224 Soils*
- GEO 306 Geomorphology*

Advanced Earth Materials & Processes (select 1)

- ESS 340 Marine Geology or any MSC course
- ESS 413 Mineral and Rock Resources*
- ESS 442 Environmental Geology*

Technique Preparation: (Select 1)

- 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 440 Field Techniques

(at least 2 courses from 300 to 400 level)

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

Required Core Courses: (All three required)

- GEO 202 GIS I: Introduction to GIS
- GEO 363 GIS II: Intermediate GIS*
- GEO 420 GIS III: Advanced GIS*

Technique Preparation: (select 2)

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

Content Electives: (select 1)

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

Urban & Rural Planning (21 Credits, 7 classes)

When? Grade

(select 1)

- GEO 101 World Geography
- GEO 103 Geography of U.S. and Canada
- ESS 108 Conservation of Natural Resources

(select 1)

- GEO 230 Economic Geography
- GEO 310 Transportation Geography
- GEO 314 Industrial Geography
- GEO 322 Urban Geography

(both required)

- GEO 244 Land Use
- GEO 444 Environmental Land Use Planning

Technique Preparation: (select 3)

- 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
- GEO 441 Quantitative Methods in Geography

(at least 2 courses from 300 to 400 level)

World Regional Systems (21 credits, 7 classes)

When? Grade

(required)

- GEO 101 World Geography
- GEO 103 Geography of U.S. and Canada

(select 2)

- GEO 230 Economic Geography
- GEO 310 Transportation Geography
- GEO 314 Industrial Geography
- GEO 320 Historical Geography
- GEO 322 Urban Geography
- GEO 326 Political Geography*

(select 3)

- GEO 201 Geography of Latin America
- GEO 213 Geography of South-South East Asia
- GEO 214 Geography of East Asia
- GEO 217 Geography of Australia and Oceania
- GEO 305 Geography of Europe*
- GEO 440 Field Techniques

(at least 2 courses from 300 to 400 level)

Last updated: 1/1/2010

General Education

Required Skills and Competencies	*Category A—Logic and Numbers for Rational Thinking (One course - 3 credit hours)*	*Category B—Linguistic, Literary, Artistic, and Cultural Traditions (3 courses - 9 credit hours)*	*Category C—Biological & Physical Sciences (3 courses - 9 credit hours)*	*Category D—Political, Economic, and Geographic Sciences (2 Courses - 6 Credit Hours)*	*Category E—Social and Behavioral Sciences (2 Courses - 6 Credit Hours)*	*University Diversity Requirement*
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 SPE 100 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 six 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.	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. CPS103 Overview Computer Science CPS180 Microcomputer Basic MAT105 Math for Liberal Studies MAT108 Finite Math MAT110 Fundamentals of Math I MAT 117 Applied Statistics MAT120 Basic Math Models MAT124 Precalculus MAT 165 Prob w/Stats Reasoning MAT181 Applied Calculus I MAT211 Calculus I PHL101 Intro to Philosophy PHL102 Critical Thinking PHL103 Intro. to Phil. of Mind PHL104 Intro. to Religious Stud. PHL105 Introduction to Ethical Theories and Problems	The courses are designed to acquaint the student with the richness & diversity of aspects of culture, especially in literary and artistic excellence. **One Course**--*Literature* **Two Courses** --*Humanities.* ***Literature* (one course)** ENG243 The Art of the Film ENG248 Intro to Culturally Diverse Literature of the U.S. ENG250 Intro to Literature FRN330 M. of French Lit. FRN331 M. of Francophone Lit. GER151 German Cinema GER321 Berlin GER322 Readings in 19th 20th Century German Literature SPN260 Intro to Lit. Studies SPN360 M. of Spanish Lit. SPN361 M. of Spanish-Amer Lit ***Humanities* (2 courses-diff. disc.)** ART101 Art Appreciation ART231 Art History I ART232 Art History II ART274 Intro. to Cultural Studio ART339 History of American Art FRN101 Beginning French I FRN102 Beginning French II FRN103 Intermediate French FRN150 French Civilization FRN200 Introduction to Reading FRN202 Inter. French Conver. FRN320 Commercial French I GER101 Beginning German I GER102 Beginning German II GER103 Intermediate German GER150 German Civ and Culture GER200 Introduction to Reading GER203 Inter. German Conver. GER215 Commercial German MUS121 Introduction to Music MUS228 Opera & Music Theatre MUS261 World Music SOC370 Sociology of the Arts SPE121 Introduction to Theater SPE240 Dramatic Narrative Film SPN101 Beginning Spanish I SPN102 Beginning Spanish II SPN103 Intermediate Spanish SPN150 Spanish Civ and Culture SPN200 Introduction to Reading SPN202 Inter Spanish Conver. SPN330 Commercial Spanish SPN385 Asp. de la Civiliz. Hisp. *Other language courses as offered may be taken in this category.	The courses 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 ***three*** of the following disciplines.* ANT121 Physical Anthropology BIO100 Basic Biology BIO105 Biological Sciences: A Laboratory Approach BIO115 Principles of Biology I BIO145 Problems of the Environment BIO150 Human Biology BIO208 Field Biology BIO248 Field Natural History CHM103 Chemistry: A Cultural Approach CHM105 Chemistry: An Observational Approach CHM121 Chemical Bonding ESS108 Conservation of Natural Resources ESS110 Introduction to Geology ESS111 Intro to the Atmosphere ESS210 Physical Geology PHY108 Astronomy PHY110 Physics for Society PHY115 Physical Science: A Laboratory Approach PHY121 Introduction to Physics I PHY205 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.*	Institutions are formal ways which societies and cultures create over time to pursue activities important to them. Two of the most basic institutions in any large, collective society are its governmental structure and its economic system—that is, the ways which a society has chosen to regulate the interaction between individuals and groups and the ways which it has chosen to satisfy and organize its material needs. **One** course must be taken from those listed in ***two*** of the following disciplines. ECN101 Prin. of Macroeconomics ECN102 Prin. of Microeconomics ECN113 Principles of Economics GEO101 World Geography GEO103 Geog U.S. and Canada PLS100 U.S. Govt & Politics PLS141 Intro to Intl. Relations	An awareness and recognition of the disciplines which examine and analyze group and individual behavior is of increasing importance for all who seek to understand and to predict the patterns and processes of human activity. These disciplines examine the causes of human action and the diversity of its organization and structure. **One** course must be taken from those listed in ***two*** of the following disciplines. ANT111 Cultural Anthropology GEO140 Cultural Geography PSY101 General Psychology SOC101 Introduction to Sociology: Society and Diversity WST100 Intro to Women's St.	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 CRJ361 Race, Ethnicity, & Crime ECH460 Family, School, & Comm. Partnerships in Early Childhood Education EEC411 Intro to Exceptionality ENG242 Intro to Multicul. Lit. ENG248 Intro to Culturally Diverse Lit of the U.S. ETH103 Intro. to Culturally Diverse Lit. GEO103 Cultural Geography GEO140 Geog of U.S. & Canada MGT447 Business and Society SOC101 Intro to Sociology: Society and Diversity SWK265 Underst. Human Diver. for Social Work Practice WST100 Intro to Women's Studies