

Minor in Geography [# 374 - Major Required] (21 hours)

GEOG 100 Physical Geography	3 hours
GEOG 110 World Regional Geography	3 hours
GEOG 330 Foundations of Cultural Geography	3 hours

One techniques courses selected from	(3-4 hours):
GEOG 300 Research Methods	3 hours
GEOG 316 Fundamentals of GIS	4 hours
GEOG 317 GIS	4 hours
GEOG 391 Data Analysis	3 hours
GEOG 417 GIS Analysis	3 hours
GEOG 419 GIS Programming	3 hours
GEOG 452 Field Methods	3 hours

Electives courses (9 hours)
Select appropriate geography courses in consultation with your geography advisor

Minor in Geology [# 377 - Major Required] (21 hours)

GEOL 111 The Earth	3 hours
GEOL 113 The Earth Laboratory	1 hour
GEOL 112 Earth History	3 hours
GEOL 114 Earth History Laboratory	1 hour

Two courses selected from	(6-8 hours):
GEOL 308 Structural Geology	4 hours
GEOL 330 Mineralogy	4 hours
GEOL 350 Petrology	4 hours
GEOL 380 Field Techniques	3 hours
GEOL 405 Paleontology	4 hours
GEOL 460 Sedimentology and Strat	3 hours

Elective courses 5-7 hours
Select appropriate geology courses in consultation with your geology program advisor.

Minor in Earth Science [# 353 – Science Major Required] (21 hours)

GEOL 111 The Earth	3 hours
GEOL 113 The Earth Laboratory	1 hour
GEOL 112 Earth History	3 hours

GEOL 114 Earth History Laboratory	1 hour
GEOG 121 Intro to Meteorology	3 hours
ASTR 214 General Astronomy	3 hours

Elective courses	(7 hours):
GEOL 308 Structural Geology	4 hours
GEOL 330 Mineralogy	4 hours
GEOL 405 Paleontology	4 hours
GEOL or GEOG 420 Geomorphology	4 hours
GEOL 460 Sedimentology and Strat	3 hours
GEOG 328 Biogeography	3 hours

Minor in Environmental Studies [# 363 – Major Required] (25 hours)

Requirements: The environmental studies minor requires 25 semester hours, including a 13-hour core and 12 hours of electives. Students must have at least 12 hours of coursework from outside their major program. A minimum of 13 hours must be upper division courses.

Core Courses (13 hours):

A. Introduction to Environmental Science 3 hours
 ENV 280, PH 280, CHEM 280, or GEOG 280

These courses present basic environmental concepts and their applications but with different emphases, allowing a student to select that which most closely parallels his/her individual interests.

B. Biological Concepts: Evolution, Diversity, Ecology 4 hours
 BIOL 122/123 (with lab)

The selected courses above should be taken during the sophomore year and no later than the fall semester of the third year.

C. Earth Science course 3 hours
 GEOG 100 or GEOG 121 or GEOL 102 or GEOL 111

These courses present a common body of basic earth science but with different emphases.

D. Practicum Experience 3 hours
 BIOL 369 or 389 (3)
 Cooperative Education in Biology
 OR GEOG 495 (3)
 Supervised Practicum
 OR CHEM 489 (3)
 Cooperative Education in Chemistry
 OR ENV 475 or 491 (3)

Special topics/Practicum

An approved capstone project, supervised practicum, or cooperative education experience in the senior year.

Elective Courses

(12 hours):

The remaining 12 hours of the minor are to be selected from the list of courses identified from the offerings of several departments. The specific courses to be taken will be determined after consultation with one of the environmental studies minor advisors. A sufficient number of offerings has been identified to allow the selection of a sequence that corresponds closely to the students interests. At least two departments must be represented in the 12 hours of elective coursework.

Department of Agriculture:

AGRO 350/351 Soils and Soils Lab 4 hours
AGRO 454 Soil Management 3 hours

Department of Architectural and Manufacturing Sciences:

AMS 470 Land Development 3 hours

Department of Biology:

BIOL 207/208 Microbiology and Lab 4 hours
BIOL 315 Ecology 4.5 hours
BIOL 420 Toxicology 3 hours
BIOL 446 Biochemistry and Lab 5 hours

Department of Chemistry:

CHEM 314 Intro Organic Chemistry 5 hours
CHEM 446 Biochemistry and Lab 5 hours

Department of Engineering:

CE 351 Environmental Engineering 3 hours

Minor in GIS [# 366 - Major Required] (23 hours)

GEOG 100 or GEOL 102 or GEOL 111 Earth Science 3 hours
GEOG 110 World Regional Geography 3 hours
GEOG 316 Fundamentals of GIS 4 hours
GEOG 317 GIS 4 hours
GEOG 417 GIS Analysis 3 hours
GEOG 419 GIS Programming 3 hours
GEOG 477 Special Topics in GIS 3 hours
or GEOG 414 Remote Sensing Fundamentals 4 hours

**Minor in City and Regional Planning [# 339 - Major Required]
GIS Concentration (22 hours)**

GEOG 240 Introduction to Planning	3 hours
GEOG 484 Advanced Planning	3 hours
GEOG 317 GIS	4 hours

Choose six hours of thematic courses from:

GEOG 417 GIS Analysis	3 hours
GEOG 474 Environmental Planning	3 hours
GEOG 488 Rural Planning	3 hours
GEOG 495 Planning Practicum	3 hours

Choose six hours of elective courses from:

GEOG 316 Fundamentals of GIS	4 hours
GEOG 419 GIS Programming	3 hours
GEOG 423 Transportation Planning	3 hours
GEOG 480 Urban Geography	3 hours

**Minor in City and Regional Planning [# 339 - Major Required]
Planning Concentration (21 hours)**

GEOG 240 Introduction to Planning	3 hours
GEOG 484 Advanced Planning	3 hours

One techniques courses selected from (3-4 hours):

GEOG 300 Research Methods	3 hours
GEOG 316 Fundamentals of GIS	4 hours
GEOG 317 GIS	4 hours
GEOG 391 Data Analysis	3 hours
GEOG 414 Remote Sensing Fundamentals	4 hours
GEOG 417 GIS Analysis	3 hours
GEOG 419 GIS Programming	3 hours
GEOG 452 Field Methods	3 hours

Choose six hours of thematic courses from (6 hours):

GEOG 423 Transportation Planning	3 hours
GEOG 434 Historic Preservation	3 hours
GEOG 474 Environmental Planning	3 hours
GEOG 480 Urban Geography	3 hours
GEOG 488 Rural Planning	3 hours
GEOG 495 Planning Practicum	3 hours

Choose six hours of elective courses (6 hours):

Select appropriate courses in consultation with your geography advisor

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AGRO 454 Soil Management & Conservation	3 hours
AMS 470 Land Development	3 hours
CE 351 Environmental Engineering	3 hours
GEOG 474 Environmental Planning	3 hours
ENV 460 Environmental Management	3 hours

**Minor in Water Resources [# 491 – Major Required]
(22 hours)**

Required Courses	(16 hours):
GEOL 111 The Earth	3 hours
GEOL 113 The Earth Laboratory	1 hour
GEOG 121 Intro to Meteorology	3 hours
GEOL or GEOG 310 Global Hydrology	3 hours
GEOG 427 Water Resources	3 hours
GEOG 474 Environmental Planning	3 hours

Elective courses	(6 hours):
GEOL 415 Environment Geology	3 hours
GEOL 440 Hydrogeology	3 hours
GEOL 445 Aqueous Geochemistry	3 hours
GEOG 422 Climatology	4 hours
GEOG 426 Applied Meteorology	3 hours
GEOG 428 Applied Groundwater	3 hours
GEOG 487 Environmental Law	3 hours

Effective for students beginning the minor program in Fall 2012.

Last updated: May 8, 2012