

## *Environmental Geology Major*

[www.geology.pitt.edu/uprogs.html](http://www.geology.pitt.edu/uprogs.html)

Revised: 04/2004

Environmental geology is a scientific discipline that aims to understand every aspect of modern and ancient Earth. A degree in environmental geology provides the diverse skills required to work in many different employment settings. For example, the acquired scientific and mapping skills are great for jobs in parks and forestry management, museum work, science education, urban and suburban planning, and jobs that involve natural resource issues. Within the field of geology, environmental and geotechnical jobs exist for people with BS degrees. A master's degree provides better job opportunities in those fields, as well as in oil and gas exploration, which can be enormously rewarding both intellectually and financially. A PhD provides additional employment options, especially in universities and government labs. Internships enable students to meet potential employers, learn about real world opportunities, and sample different types of work.

Geology deploys an interdisciplinary mix of physics, chemistry, biology, math, and natural science to understand the mysteries of nature. It focuses on the solid Earth (rocks, minerals, mountain belts, volcanoes, earthquakes, sedimentary basins, oil and gas deposits, etc.) as well as the history of life (paleontology) and its impact on the Earth. In recent decades, geologists have become increasingly concerned with the history of the Earth's climate, how the physical and chemical behavior of the oceans has changed over time, and how drifting continents and evolving life have interacted to control the composition of the atmosphere and oceans and hence to control global climate. Geologists also examine how human activities affect our environment, including the quality of air, water, and soil.

Geology majors have hiked the Appalachian Trail, gone backpack camping with at-risk youth in the Utah deserts, bicycled across North America, plumbed the depths of unexplored caves, and traveled to Mongolia in pursuit of summer research. Geology majors take a six week summer field camp that features extensive hiking in the western U.S., Italy, New Zealand, or other places around the world. To see whether environmental geology is a good major for you, try a geology class (GEOL 0040, 0800, or 0860) and the Physical Geology Lab (GEOL 0055). Make sure you are comfortable with the required biology, chemistry, math, and physics courses.

### **Required courses for the Environmental Geology major**

The environmental geology major requires the completion of 69 credits distributed as follows.

#### **Geology core requirements**

##### **One of the following**

GEOL 0040 Physical Geology  
GEOL 0800 Geology  
GEOL 0860 Environmental Geology

##### **All of the following**

GEOL 0055 Physical Geology Lab  
GEOL 1001 Mineralogy  
GEOL 1003 Igneous and Metamorphic Petrology  
GEOL 1020 Sedimentology and Stratigraphy  
GEOL 1051 Groundwater Geology  
GEOL 1100 Structural Geology  
GEOL 1960 Field Camp  
GEOL 3900 Topics in Geology: Colloquium

#### **Geology elective requirement**

Students must complete nine credits of GEOL at the 1000 level or above.

#### **Biological Science requirement**

BIOSC 0150 Foundations of Biology 1

#### **Chemistry requirements**

CHEM 0110 General Chemistry 1  
CHEM 0120 General Chemistry 2

#### **Mathematics requirements**

MATH 0220 Analytic Geometry and Calculus 1  
MATH 0230 Analytic Geometry and Calculus 2

#### **Physics requirements**

PHYS 0174 Basic Physics for Science and Engineering 1  
PHYS 0175 Basic Physics for Science and Engineering 2

#### **Science elective requirement**

Students must complete three credits of a non-introductory course in one of these disciplines: BIOSC, CEE, CHEM, CS, MATH.

**Grade requirements:** A minimum GPA of 2.0 in departmental courses is required for graduation.

**Satisfactory/No Credit option:** No GEOL course that counts toward the major can be taken on an S/NC basis. No more than two of the non-geological science courses that count toward the major may be taken on an S/NC basis.

**Writing (W) requirement:** Students must complete at least one W-course in the major.

**Related area:** A minimum of 12 credits is required in any one Arts and Sciences department chosen in consultation with the major advisor. The completion of an official Arts and Sciences minor or an Arts and Sciences or UCIS certificate also satisfies this requirement.

**GIS certificate:** The Geographic Information Systems certificate is a great opportunity to earn electives while acquiring a range of software and image analysis skills (aerial photos, maps, and satellite images) that are highly sought after by both public and private employers. Refer to the [Geology Web site](#) for classes and more information.

**Advising:** Charles E. Jones  
SRCC 503  
412-624-6347  
[cejones@pitt.edu](mailto:cejones@pitt.edu)

## **Checklist for the Environmental Geology major**

### **Geology core requirements**

#### **One of the following**

\_\_\_\_\_ GEOL 0040  
\_\_\_\_\_ GEOL 0800  
\_\_\_\_\_ GEOL 0860

#### **All of the following**

\_\_\_\_\_ GEOL 0055  
\_\_\_\_\_ GEOL 1001  
\_\_\_\_\_ GEOL 1003  
\_\_\_\_\_ GEOL 1020  
\_\_\_\_\_ GEOL 1051  
\_\_\_\_\_ GEOL 1100  
\_\_\_\_\_ GEOL 1960  
\_\_\_\_\_ GEOL 3900

#### **Geology elective requirement**

\_\_\_\_\_ GEOL \_\_\_\_\_ (1000 level or above)  
\_\_\_\_\_ GEOL \_\_\_\_\_ (1000 level or above)  
\_\_\_\_\_ GEOL \_\_\_\_\_ (1000 level or above)

#### **Biological Science requirement**

\_\_\_\_\_ BIOSC 0150

#### **Chemistry requirements**

\_\_\_\_\_ CHEM 0110 **or** CHEM 0170  
\_\_\_\_\_ CHEM 0120 **or** CHEM 0720

#### **Mathematics requirements**

\_\_\_\_\_ MATH 0220  
\_\_\_\_\_ MATH 0230 **or** MATH 0235

#### **Physics requirements**

\_\_\_\_\_ PHYS 0174 **or** PHYS 0475  
\_\_\_\_\_ PHYS 0175 **or** PHYS 0476

#### **Science elective requirement**

**One non-introductory course from one of the following disciplines**

\_\_\_\_\_ BIOSC \_\_\_\_\_  
\_\_\_\_\_ CEE \_\_\_\_\_  
\_\_\_\_\_ CHEM \_\_\_\_\_  
\_\_\_\_\_ CS \_\_\_\_\_  
\_\_\_\_\_ MATH \_\_\_\_\_