

# C-ID Descriptor

## Environmental Geology with Lab

### Descriptor Details

- **Descriptor Title:** Environmental Geology with Lab
- **C-ID Number:** 131
- **Units:** 4.0
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### General Description

An introduction to the fundamentals of Environmental Geology with laboratory Topics include the interactions between and impacts of humans with the environment in a geologic context. Course emphasizes the Earth system and connections between the geosphere, biosphere, atmosphere, and hydrosphere.

### Prerequisites

No information provided

### Corequisites

No information provided

### Advisories

No information provided

### Content

#### Environmental Geology C-ID Geology 130

The Environmental Geology course must address all of the major categories listed below and at least 75% of the subtopics.

## Formation of the Earth and Plate Tectonics

- Geologic Time and Earth History
- Plate Tectonics
- Geologic Structures

## Earth Resources

- Rocks and Minerals
- Soils
- Water
- Energy
- Human Impacts
  - Exploitation and Use
  - Population
  - Waste

## Earth Systems

- Rock Cycle
- Carbon Cycle
- Nitrogen Cycle
- Water Cycle
- Weather and Climate

## Geologic Hazards

- Mass Wasting
- Flooding and Drought
- Earthquakes
- Tsunamis
- Volcanoes
- Pollution
- Groundwater Quality and Subsidence
- Extreme Weather
- Climate Change
- Sea Level Change

## Lab Activities

### Laboratory Activities:

#### Environmental Geology Laboratory C-ID Geology 130L

1. Earth Materials
  - Minerals
  - Rocks
  - Soils
2. Plate Tectonics and Geologic Structures
3. Geologic Hazards (must include at least 5 of):
  - Earthquakes
  - Volcanoes
  - Tsunamis
  - Floods and Droughts
  - Mass Wasting
  - Sea Level Change
  - Pollution
  - Groundwater Quality and Subsidence
  - Extreme Weather
4. Waste Disposal and Storage
5. Energy Sources
6. Resource Exploitation
7. Bio-Geo-Chemical Cycles
8. Climate Change
9. Field Trips (optional)

## Objectives

*At the conclusion of this course, the student should be able to:*

- 1) Explain and practically apply the principles of the scientific method
- 2) Demonstrate a fundamental understanding of concepts, principles and interactions of Earth's systems including:

- Hydrologic Cycle
- Rock Cycle
- Plate Tectonics
- Geologic Hazards
- Impacts of Energy and Resource Usage
- Climate, Climate Change and the Greenhouse Effect
- Connectivity between geosphere, atmosphere, hydrosphere and biosphere

3) Articulate how human activities impact the environment

4) Recognize and understand how to mitigate geologic hazards

5) Demonstrate an ability to communicate complex course concepts effectively in writing and diagrams

6) Demonstrate the ability to read and interpret topographic and geologic maps and answer questions pertaining to geologic processes

### **Evaluation Methods**

Shall include multiple measures of performance that may include, but are not limited to:

- Quizzes
- Exams
- Written Assignments
- Research Assignments
- Lab reports and activities
- Field trip reports

### **Textbooks**

Environmental Geology (McGraw-Hill - Montgomery)

Geology and the Environment (Brooks Cole – Pipkin, Trent, Hazlett and Bierman)

Introduction to Environmental Geology (Pearson – Keller)

Lab Manuals:

Investigations in Environmental Geology (Pearson – Foley, McKenzie and Utgard)

Hazard City: Assignments in Applied Geology (Pearson – King, Carpenter and Wilson)