

# ENVIRONMENTAL SCIENCE

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## Biology—258 Science Building

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## Chemistry/Biochemistry—226 Science Building

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## Geology—130 Science Building

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## Undergraduate Degrees

### Bachelor of Science (BS)

- Environmental Science - Environmental Biology Option (<http://catalog.ewu.edu/archives/2016-2017/science-technology-engineering-mathematics/environmental-science/environmental-science-biology-option-bs>)
- Environmental Science - Environmental Chemistry Option (<http://catalog.ewu.edu/archives/2016-2017/science-technology-engineering-mathematics/environmental-science/environmental-science-chemistry-option-bs>)
- Environmental Science - Environmental Geology Option (<http://catalog.ewu.edu/archives/2016-2017/science-technology-engineering-mathematics/environmental-science/environmental-science-geology-option-bs>)

### Undergraduate Minors

- Environmental Science (<http://catalog.ewu.edu/archives/2016-2017/science-technology-engineering-mathematics/environmental-science/environmental-science-minor>)

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Required courses in the following program of study may have prerequisites. Reference the course description section for clarification.

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## Environmental Science Courses

### ENVS 100. INTRODUCTION TO ENVIRONMENTAL SCIENCE. 5 Credits.

**Pre-requisites:** CPLA, ENGL and MATH clearance.

**Satisfies:** GECR for natural sciences, environmental science.

This course is an introductory exploration of environmental science that emphasizes a scientific approach toward understanding contemporary human interaction with the natural environment. The structure, function and interrelationships of terrestrial, aquatic and atmospheric systems are treated through the application of biological, chemical and geological principles. This course includes a weekly laboratory that uses basic quantitative techniques for collecting and analyzing data from environmental systems.

### ENVS 300. ENVIRONMENTAL SCIENCE JUNIOR SEMINAR. 1 Credit.

**Pre-requisites:** ENVS 100 and admission to the Environmental Science program.

The purpose of this seminar course is to expose students to a variety of potential careers in the environmental sciences.

### ENVS 323. GIS FOR ENVIRONMENTAL SCIENCES. 3 Credits.

**Cross listed:** GEOG 323.

**Pre-requisites:** CPLA 101 or CPLA 120.

Introduction to Geographic Information Systems (GIS) with an emphasis on its applications in the environmental sciences. Course includes hands-on GIS work in the lab. This course satisfies an option for the Certificate in GIS.

### ENVS 399. DIRECTED STUDY. 1-5 Credits.

### ENVS 400. ENVIRONMENTAL SCIENCE SENIOR SEMINAR. 1 Credit.

**Pre-requisites:** ENVS 300 and junior or senior standing.

Through reading current literature, discussion and writing, students integrate knowledge of chemistry, biology and geology with current environmental issues.

### ENVS 449. GIS SPATIAL ANALYSIS FOR THE ENVIRONMENTAL SCIENCES. 5 Credits.

**Cross listed:** GEOL 449, GEOG 449.

**Pre-requisites:** GEOG 328, GEOG 323 or ENVS 323.

This is an advanced course where students learn to build Geographic Information System (GIS) models for environmental applications. In the course students design, collect and process data, and build several spatial models of increasing complexity and learn more advanced techniques in GIS including raster processing, analysis methods, and layout design. Students document their projects in a report form and create production quality maps. This course stresses independent project design and the development of problem-solving skills.

### ENVS 490. CAPSTONE: ENVIRONMENTAL GEOCHEMISTRY. 5 Credits.

**Cross listed:** GEOL 490B.

**Pre-requisites:** CHEM 152 or permission of instructor.

**Satisfies:** senior capstone university graduation requirement.

Application of principles of geochemistry to environmental problems, including air and water pollution, water-rock interactions, weathering and soil formation. Origin, distribution and transport of inorganic contaminants in air, water, soils, sediments and plants. The behavior of trace elements in near surface environments.

### ENVS 496. EXPERIMENTAL COURSE. 1-15 Credits.