# Program Overview: Bachelor of Science, Environmental Science

## About This Major . . .

Our students study the science, protection, and restoration of our natural resources—air, water, land, and ecosystems. We strike a balance between theory and practical, hands-on applications with the goal of creating graduates who will contribute to the solution of today's challenging environmental problems.

Most of our graduates go on to positions in the environmental profession, working for consulting firms, environmental services firms, industry, and government agencies such as the Colorado Division of Reclamation, Mining, and Safety, the US Bureau of Land Management, US Geological Survey, and US Army Corps of Engineers. Many of our students pursue further study in graduate programs at the Colorado School of Mines, Colorado State University, University of Denver, and other graduate schools.

Your education in environmental science will culminate with our Capstone course. Students work in small groups on real-life projects for an off-campus client. Each group plans and implements a project and presents the final results to its client. In addition to providing students with a chance to showcase the knowledge and abilities they have acquired through their studies, students learn how to deal with the challenges of real-life project work.

For more information on what you can do with this major, go to http://whatcanidowiththismajor.com/major/environmental-studies-science/

**All CMU baccalaureate graduates are expected to demonstrate proficiency in critical thinking, communication fluency, quantitative fluency, and specialized knowledge/applied learning.**

Students graduating with this degree will be able to:

1. show an understanding of terminology, concepts, theories, and practices in environmental science.
2. design an environmental study.
3. select and use the tools, technology, and methods appropriate for collecting data on a variety of environmental problems.
4. analyze quantitative data collected through studies of environmental problems using mathematics and statistics, translate the data into graphs or tables, and interpret the results.
5. identify and evaluate assumptions, hypotheses, and alternative views on environmental problems, then articulate implications and form conclusions.
6. use current research on a technical issue in environmental science as a basis for developing and expressing an argument or conclusion, both orally and in writing.
7. complete a field-based project that evaluates and proposes a solution for a local environmental problem.

## Program Highlights:

**A Hands-On Science**
Lab courses are a big part of our program. We teach you how to use the field study techniques and equipment that are used by working environmental professionals.

**A Field-Oriented Science**
We use our spectacular local environment to good advantage. A variety of different natural systems and public land are within a short drive from campus and we use a variety of sites for teaching and research.

**A Science with a Future**
The US Bureau of Labor projects that environmental science positions will increase by 13% between 2012 and 2022, with 39,000 job openings during that period.

**Local Chapter of Sigma Gamma Epilson**
Qualified students can join the local chapter of Sigma Gamma Epsilon, the earth science honor society.

## Program Requirements

A student must follow CMU graduation requirements by completing 120 semester credit hours, including 40 credits of coursework at the 300+ level. See the "Undergraduate Graduation Requirements" in the catalog for additional graduation information. Students should work closely with a faculty advisor when selecting and scheduling courses prior to registration. In general, CMU's programs of study are based on two curriculum groups:

### 1. Essential Learning

CMU's Essential Learning program provides the foundation of skills and information that cuts across all fields of study and the support for advanced concepts that students will later encounter in their majors. Before moving into work at the 300+ level, students complete the Maverick Milestone and its co-requirement, Essential Speech. This pair of courses is a capstone experience where students integrate what they have learned from their foundation courses by making connections among diverse areas of knowledge. The capstone is also an opportunity for students to work with disparate ideas, a critical skill expected of all CMU graduates that will aid them in solving the complex and unscripted problems they will encounter in their personal, professional, and civic lives.

### 2. What You Will Study in This Major. . .

**Foundation Courses**

Here you develop knowledge and skills that you will apply to environmental problems in your environmental science coursework.

- Principles of Chemistry and Lab
- Introduction to Environmental Chemistry
- Probability and Statistics
- Calculus

**Core Courses**

These courses provide you with fundamental knowledge and skills in the science, protection, and restoration of ecosystems, air, and water.

- Environmental Science: Global Sustainability
- Introduction to Ecosystem Management and Lab
- Science and Technology of Pollution Control and Lab
- Water Quality and Lab
- Applied Atmospheric Science

**Pollution Monitoring and Control Option**

- Environmental Health and Safety
- Environmental Regulatory Compliance
- Pollution Monitoring and Investigation and Lab
- Physical Geology

**Ecosystem Restoration Option**

- Soil Science and Sustainability
- Restoration Ecology and Lab
- Plant Biology and Lab
- Environmental Politics

**Environmental Science Electives**

You can expand your environmental science experience with courses that you find especially interesting from these options.

- Mined Land Rehabilitation
- Stream Biomonitoring
- Restoration of Aquatic Systems
- Ecology and Management of Shrublands and Grasslands and Lab
- Forest Ecology and Management
- Fire Ecology and Lab
- Fire Management and Lab
- Introduction to Geographic Information Systems

**Electives**

Electives allow you to supplement and complement your core courses with additional work in environmental science and related fields, or explore any other discipline that may interest you. A strategic selection of electives can help you "cross-pollinate" your understanding of environmental science with concepts from other fields. The following courses are popular electives among our majors.

- Hydrology
- River Dynamics
- Ground Water
- Aquatic Biology
- Environmental History
- Advanced Geographic Information Systems
- Geospatial Data Base and Design
- Global Positioning Systems for GIS

For more information about this major, go to http://www.coloradomesa.edu/envsci/index.html or contact the Department of Physical and Environmental Sciences, 232 Wubben Hall, 970.248.1993.