

# Earth and Environmental Sciences



## Earth and Environmental Sciences

The Department of Earth and Environmental Sciences at California State University, Fresno offers courses leading to the Bachelor of Science and Master of Science in Geology — as well as the Bachelor of Arts in Natural Sciences and the Minor in Geology—which are especially well-suited for primary and secondary teachers.

Collaborating with the Department of Environmental Sciences at the University of California, Riverside, the department also offers a special program leading to the Bachelor of Science in Environmental Sciences. The degree is jointly conferred by California State University, Fresno and the University of California, Riverside.

Coursework and research emphasize field and laboratory investigations of geologic and environmental problems. Our field orientation takes advantage of the university's proximity to the Sierra Nevadas, the California Coast Ranges, coastal California, and the desert provinces. This unique location gives faculty and students access to an unparalleled outdoor laboratory, all within short trips from the university.

The department's close relationship with state agencies and the private sector enables many students to pursue internships or part-time employment in geologic and environmental work while they complete their degrees.

The Bachelor of Science in Geology prepares students for employment in petroleum geology, mineral exploration, land-use planning, environmental assessment, hydrology, and engineering geology, or for teaching earth science or physical science at the secondary level. The Master of Science program provides a graduate degree for students who

want to work in industry or government on the professional level, for students who want to teach earth science in junior college, or for students who wish to pursue further graduate study.

Our applied geology option specializes in engineering geology, hydrogeology, or exploration geology fields, which have the strongest employment potential.

The bachelor's degree in environmental sciences offers an interdisciplinary approach to the natural sciences with an emphasis on biology, chemistry, and geology. This degree is designed for students interested in areas such as pollution abatement, water resources, ecosystem protection, restoration, or management.

Students may also participate in coursework and research in marine geology and oceanography offered through Moss Landing Marine Laboratories in Monterey Bay. Consult the chairs of the Earth and Environmental Sciences, and Biology departments. See *Moss Landing Marine Laboratories, Biology Department*.

## Facilities and Support

Department equipment includes the following:

- X-ray diffraction
- X-ray fluorescence laboratory
- Microscope equipment for petrography study
- Rock preparation laboratory for preparing thin and polished sections
- Remote Sensing/Geo Information Systems (GIS)
- SUN engineering workstations for modeling and seismic data processing
- Electronic mapping lab
- Fully equipped distance learning instructional lab

College of Science and Mathematics

## Department of Earth and Environmental Sciences

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## B.S. in Environmental Sciences

## B.S. in Environmental Sciences

*(Jointly offered with the University of California, Riverside)*

## B.S. in Geology

## B.A. in Natural Sciences

## Teaching Credential

Option: Earth Science

## M.S. in Geology

## Minor in Geology

- Water research analytical laboratory including mass spectrometer for isotope analysis
- Sediment transport experimental facility
- Field geophysical instruments
- Microfossil processing equipment
- Field vehicles

## Career Opportunities

Career pathways in earth and environmental sciences can lead to the following occupations:

- Professional geologist
- Earth science educator
- Environmental scientist/ecologist
- Environmental manager/planner
- Hydrogeologist/hydrologist
- Public administrator

## Undergraduate Program

**Geology Major.** The bachelor's degree with a major in geology consists of 120 units, including 49 units of geology. For general degree requirements see *Degree Requirements*. Students planning graduate study are advised to meet the foreign language requirements of the institutions they plan to attend.