

# GEOLOGY (GEOL)

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## GEOL 1 Physical Geology

**4 Units** (Degree Applicable, CSU, UC)

Lecture: 54 Lab: 54

**Advisory:** MATH 50

Minerals, rocks, earthquakes, volcanoes, and landscapes are presented within a framework of plate tectonics operating in concert with atmospheric and oceanic processes. A required course for students entering geoscience majors. May be taken by non-majors as a transferable physical science plus lab. Required field trips may involve overnight camping.

## GEOL 2 Historical Geology

**4 Units** (Degree Applicable, CSU, UC, C-ID #: GEOL 111)

Lecture: 54 Lab: 54

**Prerequisite:** GEOL 1 or GEOL 8L

An Earth systems approach applied to tracing the tectonic, biologic, and climatic development of Earth, with focus on North America, through geologic time. Study of Earth history using geologic maps, cross-sections, minerals, rocks, and fossils and integrating basic geological field methods. Required field trips may involve overnight camping.

## GEOL 7 Geology of California

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

Natural provinces of California, namely their mineral, rock, and petroleum resources, volcanoes and earthquakes, landscapes, and geologic history as influenced by plate tectonic and surface processes. Field trips are required and may involve overnight camping.

## GEOL 8 Earth Science

**3 Units** (Degree Applicable, CSU, UC)

UC Credit Limitation

Lecture: 54

Fundamentals of geology, oceanography, meteorology, and astronomy. A field trip is required. Take with GEOL 8L for lecture/lab credit.

## GEOL 8H Earth Science - Honors

**3 Units** (Degree Applicable, CSU, UC)

UC Credit Limitation

Lecture: 54

**Prerequisite:** Acceptance into the Honors Program

An honors course designed to provide an enriched experience. Fundamentals of geology, oceanography, meteorology, and astronomy. A field trip is required. Students may not receive credit for both GEOL 8 and GEOL 8H.

## GEOL 8L Earth Science Laboratory

**1 Unit** (Degree Applicable, CSU, UC)

UC Credit Limitation

Lab: 54

**Corequisite:** GEOL 8 or GEOL 8H (May have been taken previously)

Laboratory applications and problem-solving in geology, oceanography, meteorology, and astronomy. Recommended for students needing a lab to transfer to a 4-year college or university.

## GEOL 9 Environmental Geology

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

Human interactions with the geological environment. Relevant aspects of the geological environment and the problems currently caused by humans as they use the earth and its resources. Geologic hazards, including earthquakes, volcanoes, landslides, floods, and subsidence. Emphasis on geological viewpoints concerning waste disposal, pollution, geothermal energy, fossil fuels, and mining. Geologic practices related to sound land management, conservation of resources, and protection of the environment. Field trips required.

## GEOL 9L Environmental Geology Laboratory

**1 Unit** (Degree Applicable, CSU, UC)

Lab: 54

**Corequisite:** GEOL 9 (May have been taken previously)

Common laboratory practices and exercises in environmental geology. Laboratory exercises include analyzing topographic and geological maps and aerial and satellite imagery. Also included are identifying common mineral and rock samples, water and soil analysis, and integrating data from lab activities in problem solving exercises. Field trip required.

## GEOL 10 Natural Disasters

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

Surveys the hazards faced by humans from the natural environment. Analyzes a variety of hazards from a geological perspective. Studies the impact humans have on influencing or exacerbating natural disasters. Includes the role of government in responding to natural disasters. Field trips required.

## GEOL 24 Geologic Field Studies: Central California

**4 Units** (Degree Applicable, CSU)

(May be taken for option of letter grade or Pass/No Pass)

Lecture: 54 Lab: 54

Field studies of selected Central California geological provinces and surrounding areas. Overnight field trips with substantial hiking required.

## GEOL 25 Geologic Field Studies: Southern California

**4 Units** (Degree Applicable, CSU)

Lecture: 54 Lab: 54

Field studies of selected Southern California geological provinces and surrounding areas. Overnight field trips required. Trips require significant hiking.

## GEOL 29 Special Topics in Field Geology

**3 Units** (Degree Applicable, CSU)

Lecture: 18 Lab: 108

**Advisory:** GEOL 1 or GEOL 8 or GEOL 24 or GEOL 25

Field studies of designated geologic provinces and regions. Emphasis on rock identification and interpretation of geologic histories of field areas. Extended overnight field trips, camping, and strenuous hiking required.

**GEOL 30 Global Climate Change**

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

History of Earth's changing climate through geologic time and the application of the scientific method to the global climate change debate. Topics include the feedback systems that regulate the climate over long and short-term time scales, the interrelationships among short and long-term carbon cycling, plate tectonics, ocean and atmosphere circulation, the influence and origin of greenhouse gases and the major reservoirs of the exchangeable carbon on Earth. Required field trips may involve overnight camping.

**GEOL 31 Geotechnical Methods for Geotech**

**1 Unit** (Degree Applicable)

Lab: 54

**Prerequisite:** *GEOL 9L*

Introduction to methods and skills utilized by professionals in the geotechnical sector. Emphasis on technical and soft skills required for entry-level positions. For Geotechnician Certificate Program students. Mandatory day and overnight field trips to various field sites may require camping and hiking.

**GEOL 32 Work Experience in Geotechnician/Environmental Technician Skills**

**1-4 Units** (Degree Applicable)

**Prerequisite:** *GEOL 31*

Provides geotechnician program students with actual on-the-job experience in an approved work site that is related to classroom-based learning. A minimum of 75 paid clock hours or 60 non-paid clock hours per semester in the geotechnical, environmental technical, or petroleum technical fields required for each one unit of credit. Students are responsible for securing their own internships and internships must be arranged to begin the first week of class.

**GEOL 33 Geotechnical Methods for Geotech 2**

**1 Unit** (Degree Applicable)

Lab: 54

**Prerequisite:** *GEOL 31*

Introduction to advanced methods and skills utilized by professionals in the geotechnical sector. Emphasis on technical and soft skills required for entry-level positions as soil technicians, environmental techs working with soils and sediments, petroleum techs and other positions focused on non-aqueous settings. For Geotechnician Certificate Program students who have completed Geotechnical Methods I. Mandatory day and overnight field trips to various field sites may require camping and hiking.

**GEOL 99 Special Projects in Geology**

**2 Units** (Degree Applicable, CSU)

(May be taken for option of letter grade or Pass/No Pass)

Lab: 108

In order to offer students recognition for their academic interests and abilities and the opportunity to explore their disciplines in greater depth, the various departments from time to time offer Special Projects courses. The content of each course and the methods of study vary from semester to semester, and depend on the particular project under consideration. Students must have an instructor's authorization before enrolling in this course. Field trips may be required.