Area: Science and Engineering
Dean: Dr. Rina Roy
Assistant Dean: Dr. Derrick Booth
Phone: (916) 484-8107
Counseling: (916) 484-8572

Geology is the study of the origin and evolution of the earth, using the principles of mathematics, chemistry, physics, and biology. Geologists study rocks, minerals, and fossils in an effort to draw conclusions about the Earth's observable surface processes, as well as those processes taking place inside the Earth.

GEOL 300 Physical Geology 3 Units
Advisory: MATH 100 and ENGRD 116, ENGWR 51, or ESLW 310; or placement through the assessment process.
General Education: AA/AS Area IV; CSU Area B1; IGETC Area 5A
Course Transferable to UC/CSU
Hours: 54 hours LEC
This in-depth course provides an understanding of the dynamic nature of the Earth through the study of Earth processes. Topics include global plate tectonics and related processes such as seismic and volcanic activity. It also covers mineral and rock formation, and those processes related to the development of fluvial, glacial, desert, and coastal environments. The occurrence, use, and abuse of renewable and non-renewable resources such as air, ground and surface water, and fossil fuels are also covered. Field trips may be required.

GEOL 301 Physical Geology Laboratory 1 Unit
Corequisite: GEOL 300
General Education: AA/AS Area IV; CSU Area B1; CSU Area B3; IGETC Area 5A
Course Transferable to UC/CSU
Hours: 54 hours LAB
This course encompasses the study and identification of common rocks and minerals, the interpretation and recognition of geologic structures and landforms, interpretation of maps, aerial photographs, remote sensing images, seismic information, analysis of geologic hazards, and field observations of the local geology.

GEOL 305 Earth Science 3 Units
Advisory: MATH 32 and ENGRD 116, ENGWR 51 or ESLW 310; or placement through assessment
General Education: AA/AS Area IV; CSU Area B1; IGETC Area 5A
Course Transferable to UC/CSU
Hours: 54 hours LEC
This is an introductory science course covering major topics in geology, oceanography, meteorology, astronomy, scientific method and philosophy of science. A field trip may be required. This course is not designed for science and/or geology majors. This course may not be taken with GEOL 301 (Physical Geology Laboratory).

GEOL 306 Earth Science Laboratory 1 Unit
Corequisite: GEOL 305
General Education: CSU Area B3; IGETC Area 5A
Course Transferable to UC/CSU
Hours: 54 hours LAB
This course emphasizes scientific methods, critical thinking skills, and systematic Earth science laboratory procedures. Topics include weather analysis, rock and mineral identification, study of geologic concepts by means of topographic and geologic maps, and exercises in astronomy and oceanography. This course is not available for credit to students who have completed GEOL 300 or GEOL 301.

GEOL 310 Historical Geology 3 Units
Advisory: GEOL 300
General Education: AA/AS Area IV; CSU Area B1; IGETC Area 5A
Course Transferable to UC/CSU
Hours: 54 hours LEC
This course covers geologic history of the earth as shown by the changing of land and sea and by the succession of fauna and flora. Stratigraphic and other techniques for interpreting the sequence of past geological events are studied.

GEOL 311 Historical Geology Laboratory 1 Unit
Corequisite: GEOL 310
General Education: CSU Area B3; IGETC Area 5A
Course Transferable to UC/CSU
Hours: 54 hours LAB
This course is a laboratory study in historical geology. Principles of physical geology and paleontology are applied in the reconstruction of the history of the earth. Exercises in stratigraphy, paleontology and interpretation of geologic maps will be utilized.

GEOL 325 Environmental Hazards and Natural Disasters 3 Units
Same As: GEOG 307
General Education: AA/AS Area IV; CSU Area B1; IGETC Area 5A
Course Transferable to UC/CSU
Hours: 54 hours LEC
This course covers the environmental effects and applications of Earth-related processes. It focuses on earthquakes, volcanic eruptions, landslides, and flooding. Topics also include the availability and exploitation of natural resources, waste disposal, and global climate change. Humans as a force in environmental change are emphasized. The course addresses geology, engineering, environmental studies, natural resources, geography, and science education. One field trip is required. Not open to students who have completed GEOG 307.

GEOL 330 Introduction to Oceanography 3 Units
Same As: GEOG 308
Advisory: GEOG 300 or GEOL 300
General Education: AA/AS Area IV; CSU Area B1; IGETC Area 5A
Course Transferable to UC/CSU
Hours: 54 hours LEC
This course is an integrated study of water on earth emphasizing physical oceanography. Topics include ocean and shoreline processes, plate tectonics, sea floor morphology, types and distribution of seafloor sediment, ocean sediment transport, ocean chemistry, ocean currents, marine resources, and environmental concerns. Regional oceanographic features are emphasized and a field trip to gain familiarity with regional physical shoreline features is required. This course is not open to students who have completed GEOG 308.

GEOL 331 Introduction to Oceanography Lab 1 Unit
Same As: GEOG 309
Corequisite: GEOG 308 or GEOL 330; GEOL 330 or GEOG 308
Advisory: GEOG 301 or GEOL 301
General Education: CSU Area B3; IGETC Area 5A
Course Transferable to UC/CSU
Hours: 54 hours LAB
This course is a laboratory investigation of water on Earth, emphasizing the shape of the sea floor, marine navigation, plate tectonics, sea floor materials and their utilization, the spatial distribution of ocean sediment, the physical and chemical nature of sea water, currents, tides, and marine weather. This course is not open to students who have completed GEOG 309.

GEOL 342 Geology of the National Parks 3 Units
Advisory: GEOL 300 and 301
General Education: AA/AS Area IV; CSU Area B1
Course Transferable to CSU
Hours: 54 hours LEC
The course is designed to introduce Earth's geologic story as revealed by the rocks and landscapes in our National Parks. Attention will focus on how natural earth processes have formed our National Parks and National Monuments. Surface shaping processes such as volcanism, plutonism, deformation, sedimentation, glaciation, and fluvial activity will be studies as displayed in our western parks and monuments. One field trip is required.

GEOL 345 Geology of California 3 Units
General Education: AA/AS Area IV; CSU Area B1; IGETC Area 5A
Course Transferable to UC/CSU
Hours: 54 hours LEC
This course provides a survey of the physical and historical aspects of California geology, emphasizing the linkage of geology and people through economic and social impacts. This course is recommended for non-majors and majors in geology and is of particular value to science, engineering, environmental studies, education, and economics majors. One field trip is required.

GEOL 390 Field Studies in Geology .5-4 Units
Same As: GEOG 390
Course Transferable to CSU
Hours: 3-24 hours LEC; 18-144 hours LAB
This course involves field trips to selected locations of geologic interest. Course content varies according to field trip destination but may include topics in physical geology, environmental geology, economic geology, and/or introduction to tools and techniques used for geosciences field research (e.g. map and compass, the Global Positioning System (GPS), Geographic Information Systems (GIS), etc.). Field excursions are required and field trip expense fees may be required. This course may be taken 4 times using different field trip destinations.