

## **GEOL 302 Physical Geology 4 Units**

*Prerequisite:* None

*Advisory:* MATH 100 with a grade of "C" or better and ENGRD 310 and ENGWR 300, or ESLR 340 and ESLW 340, with grades of "C" or better; or equivalent.

*General Education:* AA/AS Area IV; CSU Area B1; CSU Area B3; IGETC Area 5A

*Course Transferable to UC/CSU*

*Hours:* 54 hours LEC; 54 hours LAB

This in-depth course provides an understanding of the dynamic nature of Earth through the study of earth processes including plate tectonics, the major rock types and the minerals that comprise them, volcanoes, earthquakes and Earth's interior, crustal deformation and mountain building, fossils and deep time, energy and mineral resources, surface water and groundwater, oceans and coasts, glaciers, deserts, and global change. The course uses real-world examples of the scientific method as a foundation for understanding the geological sciences, and focuses on the relevance of geology to our everyday lives. At least one field trip or an appropriate alternative activity will be required as an introduction to geological environments and field methods in geology.

## **GEOL 305 Earth Science 3 Units**

*Prerequisite:* None

*Corequisite:* GEOL 306

*Advisory:* MATH 100 with a grade of "C" or better and ENGRD 310 and ENGWR 300, or ESLW 340 and ESLR 340, with grades of "C" or better; or equivalent.

*General Education:* AA/AS Area IV; CSU Area B1; IGETC Area 5A

*Course Transferable to UC/CSU*

*Hours:* 54 hours LEC

Earth science is an introductory science course that covers a broad range of topics including geology, oceanography, meteorology, and astronomy. Sub-topics are introduced and placed into a framework using the scientific method. Using recent, historical, and prehistorical earth science events as examples, the course emphasizes the interrelatedness of the various disciplines and focuses on Earth as a dynamic, synthetic, and continually evolving - yet stable - planet.

## **GEOL 306 Earth Science Laboratory 1 Unit**

*Prerequisite:* None

*Corequisite:* GEOL 305

*Advisory:* MATH 100 with a grade of "C" or better and ENGRD 310 and ENGWR 300, or ESLW 340 and ESLR 340, with grades of "C" or better; or equivalent.

*General Education:* AA/AS Area IV; CSU Area B3; IGETC Area 5A

*Course Transferable to UC/CSU*

*Hours:* 54 hours LAB

This course emphasizes scientific methods and systematic laboratory procedures the earth sciences. It includes practical and written experience in rock and mineral identification, plate tectonics and earthquakes, river and glacial topography, geologic and topographic maps, oceanography and meteorology exercises, and concepts in astronomy. At least one field trip or an appropriate alternative activity will be required as an introduction to geological environments and field methods in geology. Not available for credit to students who have completed GEOL 302.

## **GEOL 308 Introduction to Geology 3 Units**

*Prerequisite:* None

*Advisory:* MATH 34 with a grade of C or better and ENGRD 110 and ENGWR 100, or ESLR 320 and ESLW 320, with grades of "C" or better; or equivalent.

*General Education:* AA/AS Area IV; CSU Area B1; IGETC Area 5A

*Course Transferable to UC/CSU*

*Hours:* 54 hours LEC

This course provides an introduction to geological processes and the dynamic nature of Earth as a system. It includes discussion of fundamental geological concepts such as plate tectonics, the major rock types and the minerals that comprise them, volcanoes, earthquakes and Earth's interior, crustal deformation and mountain building, deep time, fossils and evolution, and the history of Earth. A focus on the relevance of geology to our everyday lives makes this course ideal for introductory-level and non-science majors and those students desiring a stronger background in the basic sciences.

**GEOL 310 Historical Geology 3 Units**

*Prerequisite:* None

*Advisory:* ENGRD 310 and ENGWR 300, or ESLR 340 and ESLW 340, and MATH 100, with grades of "C" or better; 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 course covers the origin and geologic history of the Earth and the evolution of its living organisms. Plate tectonic theory is used to explain changes in composition and structure of rocks of the Earth's crust from the formation of the Earth to the present. Emphasis is placed on the formation of sedimentary rocks and the fossils contained within them for the purpose of understanding how they record changes in Earth's environmental processes and ecosystems. Evolution and extinction are studied to understand how they reflect environmental changes in the Earth's ocean, atmosphere, and surface.

**GEOL 311 Historical Geology Laboratory 1 Unit**

*Prerequisite:* None

*Corequisite:* GEOL 310

*Advisory:* ENGRD 310 and ENGWR 300, or ESLR 340 and ESLW 340, and MATH 100, with grades of "C" or better; or placement through the assessment process.

*General Education:* AA/AS Area IV; CSU Area B3; IGETC Area 5A  
*Course Transferable to UC/CSU*

*Hours:* 54 hours LAB

Laboratory studies will accompany and complement GEOL 310, Historical Geology. Use of sedimentary rocks, fossils, geologic maps, and cross sections will aid in interpreting ancient environments, tectonic settings, and geologic history. Other concepts addressed include age relations and correlation of rock and time units, and introduction to fossil identification and biostratigraphy. At least one field trip or an appropriate alternative activity will be required as an introduction to sedimentary environments and field methods in geology.

**GEOL 345 Geology of California 3 Units**

*Prerequisite:* None

*Advisory:* ENGRD 310 and ENGWR 300, or ESLR 340 and ESLW 340, and MATH 100, with grades of "C" or better; 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 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 may be required.

**GEOL 391 Field Studies in Geology 1-3 Units**

*Prerequisite:* GEOL 302, 305, 308, or 310 with a grade of "C" or better; For course topic "Geology and Natural History of the Eel River, Northern California," students must demonstrate swimming and basic canoeing abilities. Students must be able to swim 50 yards and demonstrate they can enter and exit a canoe from beach and dock; paddle forward, turn, stop and reverse; right a capsized canoe; and perform an assisted entry from the water. Swim testing and canoe testing will be administered by the CSU Sacramento Aquatic Center at Lake Natoma or the Humboldt State University Center Activities Program at Humboldt Bay.

*Course Transferable to CSU*

*Hours:* 18 hours LEC; 108 hours LAB

This course involves required 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, natural history, 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.]. This course may be taken up to four times for a total of three (3) units under a new topic or destination. Units are awarded based on both lecture and laboratory (one unit per 18 hours lecture and/or 54 hours laboratory or a combination of lecture and laboratory hours).

**GEOL 495 Independent Studies in Geology 1-3 Units**

*Prerequisite:* None

*Course Transferable to UC/CSU*

*Hours:* 18 hours LEC; 54 hours LAB

See Independent Studies

**GEOL 499 Experimental Offering in Geology .5-4 Units**

*Prerequisite:* None

*Course Transferable to UC/CSU*

*Hours:* 54 hours LEC; 36 hours LAB

See Experimental Offering