Geology (GEO)

Courses

**GEO 1010. Introduction to Geology. 3 Hours.**
Fulfills General Education Physical Science requirement for non-Science majors. General survey of physical Geology, focusing on developing an appreciation for the region's scenic landforms and their origins, as well as Earth history and processes, natural resources, geological hazards, and landforms. GEO 1015 lab course recommended but not required. Field trip required. Course fee required. FA, SP.

**GEO 1015. Introduction to Geology Lab. 1 Hour.**
A laboratory course to be taken concurrently with Geology 1010. Lab fee required. Corequisite: GEO 1010. FA, SP.

**GEO 1020. Life of the Past. 3 Hours.**
Fulfills General Education Physical Science requirement for non-Science majors. General survey of historical Geology focusing on the relationship between the tectonic history of the Earth, the evolution of life through time, and the histories of the Earth and life and the complex interactions between them. GEO 1025 lab course recommended but not required. One field trip required. Course fee required. Offered upon sufficient student need.

**GEO 1025. Life of the Past Laboratory. 1 Hour.**
A laboratory course to be taken concurrently with GEO 1020. Lab fee required. Corequisite: GEO 1020. 2 lab hours per week. Offered upon sufficient student need.

**GEO 1040. Introduction to Dinosaurs. 3 Hours.**
Fulfills General Education Physical Science requirement. Utilizes the popular subject matter of dinosaurs to teach basic principles of geology, biology, physics, chemistry, and astronomy, with some basic math (algebra). Successful completion of this interdisciplinary course contributes to an understanding of science and scientific concepts as well as their applications in a multitude of disciplines. GEO 1045 lab course recommended but not required. One field trip required. Course fee required. Offered upon sufficient student need.

**GEO 1045. Intro to Dinosaurs Laboratory. 1 Hour.**
A laboratory course to be taken concurrently with GEO 1040. Lab fee required. Corequisite: GEO 1040. Offered upon sufficient student need.

**GEO 1050. Geology of the National Parks. 3 Hours.**
Fulfills General Education Physical Science requirement. General survey of Physical Geology emphasizing the geology of Utah's scenic national parks and monuments, as well as state parks, to investigate the geologic history of and processes shaping the region, inherent geologic hazards, and natural resource use and availability. Corequisite: GEO 1055. Offered upon sufficient student need.

**GEO 1055. Geology National Parks Lab. 1 Hour.**
Field trip portion of GEO 1050. An eight-day/seven-night field trip featuring national parks and monuments, usually over Spring Break, to experience geologic processes shaping the landscape, interpret past environments/climates that created the resources utilized by society, and observe first-hand how our Earth has changed through geologic time and, in fact, is ever-changing. Requires hiking on park trails over uneven surfaces for average of three miles a day. Elevations up to 8300 feet. Lab fee required. Offered upon sufficient student need. Corequisite: GEO 1050.

**GEO 1060. Intro to Environmental Geology. 3 Hours.**
Fulfills General Education Physical Science requirement for non-Science majors. Emphasizes relationship between human beings and the geologic environment, including geologic hazards, mineral and energy resources, and environmental issues, including causes and impacts of environmental threats. Offered upon sufficient student need.

**GEO 1080. Introduction to Oceanography. 3 Hours.**
Fulfills General Education Physical Science requirement. Conveys the essential principles of ocean science, including an understanding of the earth's oceans focusing on sea floor topography and composition, plate tectonics, seawater dynamics and chemistry, atmospheric and ocean currents, waves, coastal land forms, and marine life as well as recognition of the close linkage of weather, climate, and humans to the oceans. GEO 1085 lab course recommended but not required. Offered upon sufficient student need.

**GEO 1085. Intro to Oceanography Lab. 1 Hour.**
A laboratory course to be taken concurrently with GEO 1080. Lab fee required. Corequisite: GEO 1080. Offered upon sufficient student need.

**GEO 1110. Physical Geology. 3 Hours.**
Fulfills a General Education Physical Science requirement for students majoring in the Sciences or Engineering, including Civil Engineering, Geology, Range Management, Forestry, etc. Covers the study of the physical features of the earth and the processes that shape those features. Successful completion gives students the background necessary for further study in the sciences. Corequisite: GEO 1115. FA.

**GEO 1115. Physical Geology Lab. 1 Hour.**
Lab portion of GEO 1110. Field trips required. Lab fee required. Corequisite: GEO 1110. FA.

**GEO 1220. Historical Geology. 3 Hours.**
Conceptual examinations of how the atmosphere, biosphere, hydrosphere, and lithospheres interact to create major structural and stratigraphic features (emphasizing North America) and how life has evolved through deep time. Prerequisite: GEO 1110. Corequisite: GEO 1225. SP.
GEO 1225. Historical Geology Lab. 1 Hour.
Lab accompanying GEO 1220. Local field trip required. Lab fee required. Prerequisite: GEO 1115. Corequisite: GEO 1220. SP.

GEO 2700R. Field Methods in Geoscience Research. 1 Hour.
A preparatory course for undergraduate participation in collaborative research projects in the geosciences. Repeatable for a max of 3 credits. Corequisite: GEO 1115. Course fee required.

GEO 2880. Travel Study: Dolomites and Northern Italy. 2 Hours.
Travel/study course providing an introduction to geology in society through a contextual examination of classic features in the field and through exploration of various impacts of those features on a long-lived, well-documented culture. Recommended prerequisite: GEO 1010 or GEO 1110. Prerequisite: Instructor permission. Offered upon sufficient student need.

GEO 2990. Seminar in Geology. 0.5-3 Hours.
For students wishing instruction that is not available through other regularly scheduled courses in this discipline. Occasionally, either students request some type of non-traditional instruction, or an unanticipated opportunity for instruction presents itself. This seminar course provides a variable credit context for these purposes. As requirements, this seminar course must first be pre-approved by the department chair; second, it must provide at least nine contact hours of lab or lecture for each credit hour offered; and third, it must include some academic project or paper (i.e., credit is not given for attendance alone). This course may include standard lectures, travel and field trips, guest speakers, laboratory exercises, or other non-traditional instruction methods. Note that this course is an elective and does not fulfill general education or program requirements.

GEO 3060. Environmental Geology. 3 Hours.
Geological attributes of environmental settings with emphasis on the analysis of geologic conditions pertinent to resource availability, urban planning, recognition and assessment of geologic hazards, and environmental issues through geochemical investigation of Earth's atmosphere, hydrosphere and lithosphere. Prerequisites: GEO 1110 (Grade C or higher) AND GEO 1115 (Grade C or higher). Offered upon sufficient student need.

GEO 3180. Paleontology. 4 Hours.
Reviews theories, principles, and applications of paleontology, as well as the characteristics of important groups of fossil organisms and their geologic distributions and paleoecologies. Course includes lab. Course fee required. Prerequisites: GEO 1220 and GEO 1225, or instructor permission. Offered upon sufficient student need.

GEO 3400. Water Resources. 3 Hours.
A detailed examination of the water cycle, including: precipitation, surface water, ground water, glaciers, water conservation, water management, and water pollution with special emphasis on the water resources of Utah and neighboring areas. Prerequisites: GEO 1110/1115 AND CHEM 1210/1215. Offered upon sufficient student need.

GEO 3550. Sedimentology & Stratigraphy. 4 Hours.
Explores the origins, classification, and occurrences of sedimentary rocks and their distributions in space and time. Course emphasizes the description and interpretation of sedimentary rocks and the philosophy and application of stratigraphic principles. Course fee required. Prerequisites: GEO 1220 AND GEO 1225. Offered upon sufficient student need.