GEOLOGY (GEOL)

GEOL Courses

GEOL 102. Introduction to Geology. 4 units
GE Area B3
Term Typically Offered: F, W, SP
Processes responsible for the Earth’s minerals, rocks, and structure surface features. Volcanism; mountain building; plate tectonics; weathering. Erosion and deposition by streams, glaciers, wind and waves. Geological resources, earth hazards, and interaction of man with global processes. 3 lectures, 1 discussion. Fulfills GE B3.

GEOL 200. Special Problems for Undergraduates. 1-2 units
Term Typically Offered: F, W, SP
Prerequisite: Consent of department chair.
Individual investigation, research, studies, or surveys of selected problems. Total credit limited to 4 units, with a maximum of 2 units per quarter.

GEOL 201. Physical Geology. 3 units
Term Typically Offered: F, W, SP
Prerequisite: MATH 119.
Processes responsible for the Earth’s rocks, structural surface features, geologic hazards, and natural resources, with emphasis on interactions with human activities. 3 lectures.

GEOL 203. Fossils and the History of Life. 4 units
GE Area B5
Term Typically Offered: W

GEOL 205. Earthquakes. 4 units
GE Area B3
Term Typically Offered: F, SP

GEOL 206. Geologic Excursions. 1 unit
CR/NC
Term Typically Offered: F, SP
Field trips to places of geologic interest. The Schedule of Classes will indicate destinations. Students must provide their own transportation, food, and camping equipment. May be repeated for a maximum of 3 units provided field trips are taken to different locations. Credit/No Credit grading only. 1 laboratory.

GEOL 241. Physical Geology Laboratory. 1 unit
Term Typically Offered: F, SP
Corequisite: GEOL 102 or GEOL 201.
Properties and identification of minerals and rocks. Topographic maps and landform analysis. Geologic maps and interpretation of rock structure. 1 laboratory.

GEOL 270. Selected Topics. 1-4 units
Term Typically Offered: TBD
Prerequisite: Consent of instructor.
Directed group study of selected topics. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1 to 4 lectures.

GEOL 305. Fundamentals of Seismology. 4 units
GE Area B6
Term Typically Offered: W
Prerequisite: PHYS 141; and GEOL 201 or PHYS 132.

GEOL 310. Igneous and Metamorphic Petrology. 4 units
Term Typically Offered: W
Prerequisite: GEOL 102 or GEOL 201, and ERSC 223.
Processes associated with melting, igneous crystallization, and metamorphism of igneous and sedimentary rocks. Special attention to relationships with tectonic setting. Required field trip. 3 lectures, 1 laboratory.

GEOL 330. Principles of Stratigraphy. 4 units
Term Typically Offered: SP
Prerequisite: GEOL 102 or GEOL 201, and GEOL 241.
Description and analysis of stratified rock and sediment. Sedimentology, diagenesis, transgressive/regressive sequences, bedform interpretation, marine and terrestrial sediment and sedimentary-rock sequence interpretation, and sequence stratigraphy. Required field trips. 3 lectures, 1 laboratory.

GEOL 400. Special Problems for Advanced Undergraduates. 1-2 units
Term Typically Offered: F, W, SP
Prerequisite: Consent of department chair.
Individual investigations, research, studies, or surveys of selected problems. Total credit limited to 4 units, with a maximum of 2 units per quarter.

GEOL 401. Field-Geology Methods. 4 units
Term Typically Offered: W
Prerequisite: GEOL 102 or GEOL 201, GEOL 241, GEOL 415, ERSC 223, ERSC 323.
Collecting and interpreting field-geologic data. Description of sedimentary rocks and construction of stratigraphic columns. Mapping geologic structures in the field. Surficial geologic stratigraphy and surficial geologic mapping. Understanding geologic processes through field study. Communicating results of field study. 1 lecture, 3 activities. Crosslisted as ERSC/GEOL 401.
GEOL 402. Geologic Mapping. 4 units  
Term Typically Offered: SP  
Prerequisite: ERSC/GEOL 401.

Bedrock geologic mapping on topographic maps and aerial photos.  
Surficial geologic mapping on topographic maps and aerial photos.  
Correlating and defining surficial geologic map units on the basis of soil development. Understanding landscape evolution using soil development activities. Crosslisted as ERSC/GEOL 402.

GEOL 404. Research Experience for Advanced Undergraduates. 1-2 units  
CR/NC  
Term Typically Offered: F, W, SP  
Prerequisite: Consent of department chair.

Individual investigations, research, studies, or surveys of selected problems. Credit/No Credit grading only. Total credit limited to 4 units, with a maximum of 2 units per quarter.

GEOL 415. Structural Geology. 4 units  
Term Typically Offered: F  
Prerequisite: GEOL 241 and ERSC 223.

Recognition, interpretation, and depiction of geological structures.  
Understanding rock deformation through the study of faults and folds. 3 lectures, 1 laboratory. Required weekend field trips.

GEOL 420. Applied Geophysics. 3 units  
Term Typically Offered: F  
Prerequisite: GEOL 201 and PHYS 141.

Introduction to geophysical exploration of the shallow subsurface: seismic refraction, seismic reflection, electrical resistivity, magnetic and gravity methods. Application to determination of subsurface structure, groundwater and mineral resources. Field trip required. 2 lectures, 1 laboratory.

GEOL 470. Selected Advanced Topics. 1-4 units  
Term Typically Offered: TBD  
Prerequisite: Consent of instructor.

Directed group study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1 to 4 lectures.

GEOL 471. Selected Advanced Laboratory. 1-4 units  
Term Typically Offered: TBD  
Prerequisite: Consent of instructor.

Directed group laboratory study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1 to 4 laboratories.