EARTH SCIENCE (ESCI)

ESCI 0001. Physical Geology
Units: 3
Formerly known as GEOL 1
Prerequisite: Eligibility for ENGL 1A
Advisory: Concurrent enrollment in ESCI 1L
Hours: 54 lecture
Dynamic nature of earth's geologic processes. Earthquakes, volcanoes, mountain building, landslides, rocks, minerals, fossils, erosion, glaciation, deserts, shorelines, groundwater, and plate tectonics. (C-ID GEOL 100) (CSU, UC)

ESCI 0001L. Physical Geology Laboratory
Unit: 1
Formerly known as GEOL 1L
Prerequisite: Completion of or concurrent enrollment in ESCI 1
Hours: 54 laboratory
Minerals, rocks, fossils, aerial photos, topographic and geologic maps. Field trip(s) may be required during regular lab time. (C-ID GEOL 100L) (CSU, UC)

ESCI 0002. California Geology
Units: 3
Formerly known as GEOL 2
Advisory: Completion of ESCI 10 with grade of "C" or better
Hours: 54 lecture
An introduction to the geology of California, including tectonic processes, geologic structures, physiographic provinces, local rocks and minerals, landforms, natural resources, geologic history, and natural hazards in the state. (C-ID GEOL 200) (CSU, UC)

ESCI 0003. Historical Geology
Units: 3
Formerly known as GEOL 3
Corequisite: Concurrent enrollment in ESCI 3L
Advisory: Completion of ESCI 1 and 1L with grades of "C" or better
Hours: 54 lecture
An introduction to Earth's history and the life it supports. Includes geologic dating, plate tectonics, stratigraphy, fossils, biological evolution, the planet's origin, and the processes that have influenced paleogeography during the past 4.6 billion years. Designed for Geology majors. (C-ID GEOL 110) (CSU, UC)

ESCI 0003L. Historical Geology Laboratory
Unit: 1
Formerly known as GEOL 3L
Prerequisite: Completion with grade of "C" or better or concurrent enrollment in ESCI 3
Advisory: Completion of ESCI 1 and ESCI 1L
Hours: 54 laboratory
Hands-on learning in the topics of Earth history. Includes geologic dating, fossils, plate tectonics, minerals and rocks, biological evolution, the planet's origin, and the processes that have influenced paleogeography and life history during the past 4.6 billion years. (C-ID GEOL 110L) (CSU, UC)

ESCI 0007. Energy, Environment, and Climate
Units: 3
Also known as ESS 7
Advisory: Eligibility for ENGL 1A
Hours: 54 lecture
Analysis of the nature of energy and the environmental impact of its societal use in the context of Earth's record of changing climate. Explores current global climate change due to post-1750 greenhouse gas emissions and strategies for mitigation and adaptation to changing climate predictions, emphasizing future alternative energy sources. Designed for students majoring in areas related to the environmental sciences and/or those interested in developing a substantiated understanding of the role played by citizens in ensuring a healthy environment for future generations. (CSU, UC)

ESCI 0010. Introduction to Earth Science
Units: 3
Prerequisite: Eligibility for ENGL 1A
Hours: 54 lecture
Introduction to concepts of geology, oceanography, meteorology, and astronomy for science or nonscience majors. (C-ID GEOL 120) (CSU, UC)

ESCI 0010L. Introduction to Earth Science Laboratory
Unit: 1
Prerequisite: Completion with grade of "C" or better or concurrent enrollment in ESCI 10
Hours: 54 laboratory
Exploration of the solid Earth, its atmosphere, hydrosphere, and place in the solar system. Learning through investigation and systematic laboratory procedures, focused on the physical and chemical systems of the Earth such as the tectonic cycle, rock cycle, hydrologic cycle, weather and climate. Field trip(s) may be required during regular lab time. (C-ID GEOL 120L) (CSU, UC)

ESCI 0015. Introduction to Oceanography
Units: 3
Advisory: Eligibility for ENGL 1A or equivalent
Hours: 54 lecture
Physical, chemical, and biological aspects of our ocean environment with emphasis on geologic processes. (CSU, UC)

ESCI 0015L. Introduction to Oceanography Laboratory
Unit: 1
Prerequisite: Completion of or concurrent enrollment in ESCI 15
Hours: 54 laboratory
Exploration of the ocean environment, including physical, chemical and biological aspects. Learning through investigation and systematic laboratory procedures. (CSU, UC)

ESCI 0016G. Weekend Field Paleontology and Ancient Environments
Units: 1-2
Also known as BIOL 16G
Formerly known as GEOL 16G
Hours: 30 (12 lecture, 18 laboratory) per unit
Investigations into the ecology of environments in the geologic past through field work at fossil sites. Comparisons/contrasts made between ancient (fossil) communities and the current (living) communities of selected study sites. Differences and similarities between the plants and animals used as evidence to reconstruct ancient ecological communities. Students may be required to provide their own transportation. (CSU)

ESCI 0028. Independent Study
Units: 1-3
Designed for students interested in furthering their knowledge at an independent study level in an area where no specific curriculum offering is currently available. Independent study might include, but is not limited to, research papers, special subject area projects, and research projects. See Independent Study page in catalog. (CSU, UC-with unit limitation)

ESCI 0050. Geology of National Parks and Monuments
Units: 3
Formerly known as GEOL 50
Hours: 54 lecture
Investigation of geology and geologic history in the formation of North American national parks and monuments including the Grand Canyon, Bryce, Zion, and Yosemite. (CSU, UC)

ESCI 0054A. Sierra Nevada and Western Basin and Range Provinces
Units: 0.5
Formerly known as GEOL 51A
Hours: 9 lecture
Field lecture course designed to teach students the geology of portions of the Sierra Nevada and Western Basin and Range Provinces. Sites along I-80 and old highway 40 are examined. (CSU)

ESCI 0054B. Great Valley and Coast Range Provinces
Units: 0.5
Formerly known as GEOL 51B
Hours: 9 lecture
Field lecture course designed to teach students the geology of portions of the Great Valley and the Coast Range Provinces. Sites along I-80, the Russian River, the Pacific Coast, and the San Andreas Fault are examined. (CSU)

ESCI 0054C. Great Valley, Coast Ranges, and Sutter Buttes
Units: 0.5
Formerly known as GEOL 51C
Hours: 9 lecture
Field lecture course designed to teach students the geology of portions of the Great Valley, the Coast Ranges, and the Sutter Buttes. Sites west from Roseville through Woodland and Capay Valley to Clear Lake, the Central Sacramento Valley, and the Sutter Buttes are examined. (CSU)

ESCI 0054D. Western Sierra Nevada and the Mother Lode
Units: 0.5
Formerly known as GEOL 51D
Hours: 9 lecture
Field lecture course designed to teach students the geology of portions of the Western Sierra Nevada and the Mother Lode. Sites along Highway 49 are examined. Entrance and transportation fees may be required. (CSU)

ESCI 0054E. Major Rock Units of the Northern Sierra
Units: 0.5
Formerly known as GEOL 51E
Hours: 9 lecture
Field lecture course designed to teach students the geology of major rock units of the Northern Sierra Nevada. Moderate day hike is involved. Entrance fees may be required. (CSU)

ESCI 0055A. Weekend Field Geology - Eastern Sierra
Unit: 1
Hours: 18 lecture
Weekend field trip to the eastern Sierra Nevada. A 1 hour and 50 minute pre-session will be held prior to the trip. Hiking may be necessary. Camping, entrance, and transportation fees may be required. (CSU)

ESCI 0055B. Weekend Field Geology - Yosemite
Unit: 1
Hours: 18 lecture
Weekend field trip to Yosemite covering the origin, evolution, and geology of Yosemite National Park and surrounding areas. A 1 hour and 50 minute pre-session will be held prior to the trip. Hiking may be necessary. Camping, entrance, and transportation fees may be required. (CSU)

ESCI 0055C. Weekend Field Geology - Point Reyes
Unit: 1
Hours: 18 lecture
Exploration of the natural history of the Point Reyes area, emphasizing its geologic history and geomorphology. Camping, entrance and transportation fees may be required. (CSU)

ESCI 0055D. Weekend Field Geology - Southern Coast Range
Unit: 1
Hours: 18 lecture
Exploration of the natural history of southern Coast Ranges. May include national parks (eg. Carrizo Plain, Pinnacles) and selected areas of the San Andreas Fault. Some hiking required. Camping and/or park entrance fees may be required. A 1 hour and 50 minute classroom pre-session is required. (CSU)

ESCI 0055E. Weekend Geology and Volcanoes of Northeastern California
Unit: 1
Hours: 18 lecture
Exploration of the natural history of the volcanoes and mountains of northeastern California. May include national parks (eg. Lassen, Lava Beds). Some hiking required. Camping and/or park entrance fees may be required. A 1 hour and 50 minute classroom pre-session is required. (CSU)

ESCI 0055F. Weekend Field Geology
Unit: 1
Formerly known as GEOL 52F
Hours: 18 lecture
Weekend (sometimes including Friday) field trips to selected locations of geologic interest in California and bordering areas. Hiking may be necessary. Camping, entrance and transportation fees may be required. (CSU)

ESCI 0056A. Field Geology of Western North America - Death Valley
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
One-week field experience to Death Valley and eastern Sierra Nevada. Emphasis placed on the geologic history of the area. We will be seeing rocks spanning over 1 billion years of earth history. A three-hour pre-session prior to the trip is required. Hiking may be necessary. Camping, entrance, and transportation fees may be required. (CSU)

ESCI 0056B. Field Geology of Western North America - Geology of Utah
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
Field course covering the National Parks of northern Arizona, and Utah including, but not limited to: Zion, Bryce, Canyonlands, Grand Canyon, Monument Valley, Arches, and Capitol Reef. Entrance and transportation fees may be required. (CSU)

ESCI 0056C. Field Geology of Western North America - Western Deserts
Units: 2
Hours: 54 (27 lecture, 27 laboratory)
Field experience covering areas of the Southern California desert, including Carrizo Plain, Barstow, Joshua Tree National Park, Salton Sea, and Anza Borrego State Park. Emphasis will be placed on the geologic history of the region. A three-hour pre-session prior to the trip is required. Hiking may be necessary. Camping, entrance, and transportation fees may be required. (CSU)

ESCI 0056D. Field Geology in the Sierra Nevada
Units: 2
Hours: 36 lecture
Exploration of the natural history of the Sierra Nevada. May include national parks (eg. Yosemite, Sequoia, Kings Canyon, Mono Lake). Some hiking required. Camping and/or park entrance fees may be required. A 2 hour and 50 minute classroom pre-session is required. (CSU)

ESCI 0056E. Geology of the Cascade Volcanoes
Units: 2
Hours: 36 lecture
Exploration of the natural history of the volcanoes and mountains of the Cascade Range of western North America. May include national parks (eg. Lassen, Lava Beds, Crater Lake, Mount Saint Helens, Rainier). Some hiking required. Camping and/or park entrance fees may be required. A 2 hour and 50 minute classroom pre-session is required. (CSU)

ESCI 0056F. Field Geology of Western North America
Units: 2
Formerly known as GEOL 53F
Hours: 54 (27 lecture, 27 laboratory)
One-week field experience to selected areas of geologic interest. Emphasis placed on the geologic history of the many parks and monuments of the west. A three-hour pre-session prior to the trip is required. Hiking may be necessary. Camping, entrance and transportation fees may be required. (CSU)

ESCI 0056G. Coastal Geology
Units: 2
Hours: 36 lecture
Exploration of the natural history of the western American coast. May include national parks (eg. Pfeiffer, Point Reyes, Redwoods). Some hiking required. Camping and/or park entrance fees may be required. A 2 hour and 50 minute classroom pre-session is required. (CSU)

ESCI 0095. Internship in Earth Science
Units: 0.5-4
Formerly known as GEOL 95
Designed for advanced students to work in an area related to their educational or occupational goal. Provides new on-the-job technical training under the direction of a worksite supervisor, allowing students to expand knowledge and skills in the chosen field. Mandatory orientation session and faculty approval to determine eligibility. One unit of credit is equal to each 60 hours of non-paid work, or each 75 hours of paid work. Students may earn up to a total of 16 units in internship courses (any course numbered 95 and PDEV 94). (CSU-with unit limitation)