

SLO Presentation

GEOL

Date: 09/11/2019

SCIENCE, ENGINEERING & MATH

GEOL

Geology--ADT

- Students apply the scientific method.
- Students describe the role agents of erosion plays in shaping the earth's surface.
- Students explain the relative motion between tectonic plates at each of the three types of plate boundaries.
- Students identify rocks and minerals based on their physical properties.
- Students recognize the magnitude of the geologic time scale.
- Students recognize the role of constructive and destructive forces in the shaping of the earth's surface.
- Students use topographical maps to interpret the earth's surface.

CSLO

GEOL100 - Natural History of Southern California

- Students will identify major rock types observed during field trips.
- Students will identify topographic and geologic features during field trips.
- Students will show basic knowledge of geologic processes, structure, and history of field trip areas.
- Students will relate plate tectonic processes to geology of field trip areas.
- Students will describe the major weathering and erosional processes operating in field trip areas.

GEOL101 - Physical Geology

- Students accurately apply the terms stress, deformation or vulcanism, and plate boundary to describe the tectonic evolution of a specific mountain range (i.e. the Sierra Nevadas)
- Students compare and contrast the physical characteristics of each of the 3 types of stream channels
- Students explain how specific agents of mechanical and chemical weathering can weaken and break-down rock
- Students can describe the differences between constructive and destructive geologic forces and provide a specific example of each
- Students use physical properties (hardness, cleavage, streak, heft, etc.) to identify minerals
- Students describe the relative movement of tectonic plates at each of the 3 types of plate boundaries
- Students are able to describe the eruptive and physical characteristics of the 3 types of volcanoes
- Students use texture and composition to identify a rocks

GEOL102 - Physical Geology Lecture

- Students are able to describe the eruptive and physical characteristics of the 3 main types of volcanoes.
- Students can describe the differences between constructive and destructive geologic forces and provide a specific example of each.
- Students can explain how specific agents of mechanical and chemical weathering can weaken and break-down rock.
- Students compare and contrast the physical characteristics of each of the 3 types of stream channels
- Students describe the relative movement of tectonic plates at each of the 3 types of plate boundaries.

GEOL102L - Physical Geology Laboratory

- Students are able to use topographic maps as a tool to locate landmarks, interpret topographic and geologic features, calculate gradient, and identify erosional and depositional landforms.
- Students can visually identify different forms of mass wasting and determine the trigger for the mass wasting event
- Students use physical properties (hardness, cleavage, streak, heft, etc.) to identify minerals
- Students use texture and composition to identify rocks
- Students will demonstrate the ability locate the epicenter of an earthquake using seismogram records

GEOL103 - Environmental Geology Lecture

- A. Describe the hydrologic cycle
- B. Demonstrate an understanding of the rock cycle and its relationship to the location of mineral deposits and fossil fuels
- C. Demonstrate a knowledge of basic physical processes that shape Earth's surface
- D. Recognize the ways humans affect the geological processes that shape Earth's surface

GEOL103L - Environmental Geology Laboratory

- A. Use data collected through a weather station to better understand the scientific method
- B. Recognize key features on topographic maps
- C. Read, construct, and utilize graphs and tables as useful laboratory tools
- D. Explain the differences between renewable and nonrenewable energy sources

GEOL105L - Field Methods of the Earth Sciences

- Identify major rock types observed during field trip
- Identify topographic and geologic features
- Students can use physical properties to identify minerals and rocks in the field.
- Show basic knowledge of geologic processes and geologic structure of field areas and the ecologic characteristics, such as adaptive traits of flora and water chemistry
- Students identify and interpret geologic features in the field.
- Compile accurate geologic maps and cross-sections of field areas
- Students demonstrate basic knowledge of geologic processes and geologic structure of field areas.
- Compile a photo journal of ecology and geology observed in the field that demonstrates a basic understanding of how these sciences relate to environmental conditions of the field areas visited
- Students demonstrate basic knowledge of the ecologic characteristics, such as adaptive traits of flora and water chemistry of field areas.
- Students compile accurate geologic maps and cross-sections of field areas.
- Students compile a photo journal of ecology and geology observed in the field that demonstrates a basic understanding of how these sciences relate to environmental conditions of the field areas visited.

GEOL120 - Natural History of Owens Valley and the Sierra Nevada Mountains

- Students are able to identify major volcanic, glacial, and tectonic features in the field.
- Students demonstrate the ability to make interpretations of geologic processes in the field.
- Students demonstrate the ability to use physical properties to identify minerals and rocks in the field.
- Students will demonstrate basic understanding of the geologic processes, geologic structure, and geologic history of field areas.

GEOL201 - Earth History

- Describe the relative movement of Earth's tectonic plates at each of the three types of plate boundaries
- Use the physical properties of minerals and rocks to accurately identify specimens in lab and on exams
- Relate major geologic and biologic events to the appropriate eon, era, period, and epoch
- Utilize the fundamental principles of geology to determine the relative age of geologic events
- Apply radiometric dating principles to determine the absolute age of rock samples
- Identify common fossils

GEOL204 - Geology of the Western National Parks and Monuments

- Describe the major geologic processes responsible for the national parks discussed during the semester
- Relate different plate tectonic settings to different national parks
- Identify specific geologic or topographic features on geologic and topographic maps
- Describe the three major rock groups and identify which groups prevail in a particular national park

GEOL207 - Paleontology, Life of the Past

- Students demonstrate the ability to identify common invertebrate fossils.

- Students demonstrate the ability to identify common vertebrate fossils.
- Students demonstrate the ability to utilize the fundamental principles of geology to determine the relative age of geologic events
- Students relate major geologic and biologic events to the appropriate eon, era, period, and epoch on the Geologic Time Scale.
- Students will be able to discuss the theory of evolution and the paleontological evidence in support of this theory.
- Relate major geologic and biologic events to the appropriate eon, era, period, and epoch
- Utilize the fundamental principles of geology to determine the relative age of geologic events
- Identify common vertebrate fossils
- Identify common invertebrate fossils

GEOL208 - The Age of the Dinosaurs

- Use the technique of scientific investigation to obtain information about dinosaurs
- Use uniformitarianism to determine the characteristics of ancient environments
- Demonstrate an understanding of how dinosaurs evolved over time
- Describe basic dinosaur behavior, physiology, and extinction patterns based on fossil evidence
- Demonstrate an understanding of significant geologic and biologic events in the history of life on Earth, including major extinctions and their causes
- Relate fossil remains presented at museums to topics discussed in class

GEOL209 - Natural Disasters

- Students understand the natural processes that are responsible for disasters.
- Students understand the geographic distribution of natural hazards.
- Students understand the impacts of disasters on society and public policy as well as the role of public education on such disasters.
- Students understand strategies to minimize damages from natural disasters.
- Students evaluate case studies about natural disasters.
- Students understand and identify natural hazards associated with Southern California.