

ESCI 0055E - WEEKEND GEOLOGY AND VOLCANOES OF NORTHEASTERN CALIFORNIA

Catalog Description

Hours: 18 lecture

Description: 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)

Course Student Learning Outcomes

- CSLO #1: Describe the Andean Plate Boundary and how it relates to the present convergent boundary in northeastern California.
- CSLO #2: Explain the relationship between the present convergent boundary in northeastern California and the Jurassic Andean Boundary of the ancient Sierra Nevada.

Effective Term

Fall 2018

Course Type

Credit - Degree-applicable

Contact Hours

18

Outside of Class Hours

36

Total Student Learning Hours

54

Course Objectives

1. Relate rock types to the different formations of northeastern California.
2. Compare and contrast tectonic feature of northeastern California.
3. Interpret the geologic history of northeastern California.
4. Analyze the geomorphic processes that sculpted the area, emphasizing the Sierra Nevada mountains, river valleys (e.g. Feather River) fault features, and volcanoes.
5. Relate the physical and biological environments of northeastern California.

General Education Information

- Approved College Associate Degree GE Applicability
- CSU GE Applicability (Recommended-requires CSU approval)
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

Articulation Information

- CSU Transferable

Methods of Evaluation

- Reports
 - Example: Students will create a report (2-4 pages) on a topic related to the geology or paleontology of the area of the field course.
- Other
 - Example: The student will create accurate and thorough field notes of the entire field experience to be turned in approximately 2 weeks after the trip.

Repeatable

No

Methods of Instruction

- Lecture/Discussion

Lecture:

1. The instructor will lecture on the geomorphic features, geomorphology, volcanic history and earthquake activity of selected Cascade volcanoes.
2. The instructor will lecture on the subduction zone tectonics of the Andean Type Plate Boundaries of the Mesozoic northern Sierra and present day southern Cascade geologic provinces. Students are expected to actively engage in the discussion.

Typical Out of Class Assignments Reading Assignments

1. Read handouts on basic geological settings, the geologic time scale, rock types and be prepared for discussion.
2. Read handouts on the Cascade Volcanoes and Andean Type Plate boundaries and be prepared for discussion.

Writing, Problem Solving or Performance

1. Using oral and written guidelines, create accurate field notes.
2. Complete a 2-4 page research paper based on a topic identified by the student and approved by the instructor, such as a paper on the plate tectonics of the northern Sierra Nevada or southern Cascade Range.

Other (Term projects, research papers, portfolios, etc.)

Required Materials

- Roadside Geology of the Northern and Central California
 - Author: Alt and Hyndman
 - Publisher: Mountain Press
 - Publication Date: 2016
 - Text Edition:
 - Classic Textbook?:
 - OER Link:
 - OER:
- Geology of the Sierra Nevada

- Author: Mary Hill
- Publisher: UC Press
- Publication Date: 2006
- Text Edition:
- Classic Textbook?:
- OER Link:
- OER:
- Geology of the National Parks
 - Author: Ann G. Harris, Esther Tuttle, Sherwood D. Tuttle
 - Publisher: Kendal / Hunt
 - Publication Date: 2006
 - Text Edition:
 - Classic Textbook?:
 - OER Link:
 - OER:
- Fire Mountains of the West
 - Author: Don Harris
 - Publisher: Mountain Press
 - Publication Date: 2005
 - Text Edition: 3rd
 - Classic Textbook?:
 - OER Link:
 - OER:

Other materials and-or supplies required of students that contribute to the cost of the course.