

ESCI 0055D - WEEKEND FIELD GEOLOGY - SOUTHERN COAST RANGE

Catalog Description

Hours: 18 lecture

Description: 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)

Course Student Learning Outcomes

- CSLO #1: Describe the California Plate Boundary and how it relates to the central San Andreas Fault.
- CSLO #2: Explain how The Franciscan Formation relates to the Jurassic Andean Plate Boundary of California.

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 the Southern Coast Ranges.
2. Compare and contrast tectonic feature of the San Andreas Fault and southern Coast Ranges.
3. Interpret the geologic history of the southern Coast Ranges and San Andreas Fault including earthquake activity and history.
4. Analyze the geomorphic processes that sculpted the area, emphasizing the coast range mountains, valleys and fault features.
5. Relate the physical and biological environments of the southern Coast Range and San Andreas fault.

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: Students 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 and earthquake activity of the San Andreas Fault in the southern Coast Range Province explaining the great earthquake of 1857, the right later offsets and shutter ridges.
2. The instructor will lecture on the Coast Range rain shadow and it's influence on the flora and fauna as well as the preservation of the traces of the San Andreas fault.

Typical Out of Class Assignments Reading Assignments

1. Read handouts on basic geological settings, the geologic time scale, and rock type and be prepared for discussion.
2. Read handouts on the San Andreas Fault and California Plate boundary 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 southern Coast 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:
- The San Andreas Fault Zone in the Carrizo Plain, California: Review of Quaternary Geologic Investigations, Landforms, and Fault Ac

- Author: Arrowsmith, J R.
- Publisher: PhD. Dissertation, Stanford University
- Publication Date: 1995
- Text Edition:
- Classic Textbook?:
- OER Link:
- OER:
- Geology of the California Central Coast
 - Author: Leech, Mary
 - Publisher: San Francisco State University
 - Publication Date: 2006
 - Text Edition:
 - Classic Textbook?:
 - OER Link:
 - OER:
- Introduction San Andreas Fault
 - Author: U.S. Geological Survey
 - Publisher: USGS
 - Publication Date: 2005
 - Text Edition:
 - Classic Textbook?:
 - OER Link:
 - OER:

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