ESCI 0055B - WEEKEND FIELD GEOLOGY - YOSEMITE

Catalog Description

Hours: 18 lecture
Description: 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)

Course Student Learning Outcomes

- CSLO #1: Compare and contrast geologic features of specific field localities.
- CSLO #2: Analyze and evaluate geologic processes responsible for producing specific landforms of the area covered.
- CSLO #3: Interpret the tectonic setting of area covered.

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. Interpret the geologic history of Yosemite, including the emplacement of the plutons, later uplift and glacial carving.
2. Analyze the geomorphological processes that sculpted the area, emphasizing the glacial history.
3. Describe, compare, and contrast depositional and erosional glacial features.
4. Discuss the history of the Yosemite region.

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 write research paper on a student-identified topic based on the trip. The research paper is graded both on content and writing ability and based on a rubric agreed upon by the faculty teaching the field courses. An example paper topic would be, Where is the other half of Half Dome?
- Other
  - Example: Students will create field notes including a clear description of the experience. Strong notes will be carefully written and present information in a road-log that includes mileage, turns, geology, photographs and/or drawings. This is graded based on a rubric agreed upon by the faculty teaching the field courses.

Repeatable

No

Methods of Instruction

- Lecture/Discussion

Lecture:

1. Instructor will lecture on the specific geologic history appropriate to Yosemite and the surrounding area. For example, we lecture about exfoliation and jointing in granitic bodies while visiting Tuolumne Meadows.
2. Instructor will lecture on the erosional glacial features such as u-shaped valleys and hanging valleys. The main Yosemite Valley is the best place to lecture about glaciation and the features left behind during the Pleistocene glaciation. Students also hike up to a waterfall to see that it is a hanging valley left behind by a previous glacier.

Typical Out of Class Assignments
Reading Assignments

1. Read instructor-provided handouts pertaining to Yosemite and the surrounding area such as "Geologic history of Yosemite National Park: including Mesozoic emplacement of granitic bodies to Pleistocene glaciation and be prepared for discussion." 2. Read appropriate geological books and/or periodicals to prepare for research paper. An example book would be The lore and the lure of the Yosemite: The Indians : their customs, legends and beliefs : big tress : geology : and the story of Yosemite by Herbert Earl Wilson.

Writing, Problem Solving or Performance

1. Using oral and written guidelines, create accurate field notes. 2. Complete a 2-4 page research paper based upon a topic identified by the student and approved by the instructor, such as John Muir and his time in Yosemite.

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

- Geology of the Sierra Nevada (California Natural History Guides)
  - Author: Mary Hill
  - Publisher: California Natural History Guides

    - Publication Date: 2006
    - Text Edition:
    - Classic Textbook?:
    - OER Link:
    - OER:
- Geology Underfoot in Yosemite National Park
    - Author: Allen F.Glazner and Greg Stock
    - Publisher: Mountain Press Publishing Company
    - Publication Date: 2010
    - Text Edition:
    - Classic Textbook?:
    - OER Link:
    - OER:
- The Geomorphic Evolution of the Yosemite Valley and Sierra Nevada Landscapes: Solving the Riddles in the Rocks
    - Author: Jeffrey Schaffer
    - Publisher: Wilderness Press
    - Publication Date: 1997
    - Text Edition: 1st
    - Classic Textbook?:
    - OER Link:
    - OER:
- The Story of the Yosemite Valley
    - Author: François Matthes
    - Publisher: J. Missouri; Illustrated ed.
    - Publication Date: 2014
    - Text Edition: Illustrated edition
    - Classic Textbook?:
    - OER Link:
    - OER:

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

Map of the Yosemite area Supplemental library of the Yosemite area Handouts