

# ESS 0006 - THE SIERRA NEVADA

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## Catalog Description

Formerly known as INT 6

Advisory: Eligibility for ENGL 1A

Hours: 54 lecture

Description: Integrated study of the Sierra Nevada including its physical attributes, geological characteristics, origin and development, flora and fauna, water resources, historical and economic significance, and influences on literature, art, and culture. Includes contemporary environmental, economic, and management issues in the Sierra. (CSU, UC)

## Course Student Learning Outcomes

- CSLO #1: Identify principal physiographic features of the Sierra Nevada region such as climatic zones, prominent peaks, geological patterns, biological provinces, and evaluate areas of critical resources and environmental sensitivity.
- CSLO #2: Recall the human history in the Sierra Nevada, assess the role in which environmental conditions influenced human activity, and evaluate the impact of human activity on the region.
- CSLO #3: Describe and critique the major environmental, economic, and management challenges that will affect the future of the Sierra Nevada and hypothesize the means by which they might be sustainably resolved.

## Effective Term

Fall 2020

## Course Type

Credit - Degree-applicable

## Contact Hours

54

## Outside of Class Hours

108

## Total Student Learning Hours

162

## Course Objectives

1. On a base map of the Sierra Nevada region, identify the principal physiographic features such as constituent mountain systems, climatic zones, prominent peaks, geological patterns, biological provinces, major waterbodies, areas of critical resources and environmental sensitivity;
2. List chronologically the principal stages in the geological history of the Sierra Nevada region, and summarize the significance of each in shaping the modern landscape;
3. Explain with examples, how plants and animals have adapted to the variable environmental conditions within Sierra Nevada;

4. Describe the patterns of prehistoric human occupation in the Sierra Nevada, and the resources, technology, and survival strategies of aboriginal human populations;
5. Describe the major routes of historic human migration and travel through the Sierra Nevada and discuss the significance of these routes to the settlement of modern communities, and the relationship between them and the physiography and resources of the local region;
6. Illustrate, by citing the contributions of specific artists, writers, and performers, the influence of the Sierra Nevada in the creative dimensions of the human experience in the region; and
7. Describe the major environmental, economic, and management challenges that will affect the future of the Sierra Nevada, and review the means by which they might be resolved.

## General Education Information

- Approved College Associate Degree GE Applicability
  - AA/AS - Life Sciences
  - AA/AS - Physical Sciences
- CSU GE Applicability (Recommended-requires CSU approval)
  - CSUGE - E1 Lifelong Learning and Self-Development
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

## Articulation Information

- CSU Transferable
- UC Transferable

## Methods of Evaluation

- Classroom Discussions
  - Example: Hold a mock Town Hall meeting where each student is assigned a role as a specific stakeholder in a proposed controversial housing development in the Sierra Nevada. Discuss the pros and cons of the proposed project from your stakeholder perspective. Attempt to reach a solution/ruling utilizing collaboration and civil information sharing and discussion.
- Essay Examinations
  - Example: Write a paper discussing a major environmental problem in the Sierra, detailing several aspects of the problem (geographic, economic, ecologic, etc.), identify the sources of the problem, and identify solutions and practical (economic and otherwise) applications of such solutions. Essay will be graded based upon a rubric developed by the instructor and shared with students.
- Objective Examinations
  - Example: Take a multiple-choice, true-false and short-answer exam about the geology, geography and ecology of the Sierra Nevada. True or False: The west side of the Sierra Nevada receives more precipitation than the east side of the Sierra Nevada.
- Projects
  - Example: Create a series of maps labeling features such as counties, major peaks, rivers, biotic zones, etc. Assignment will be evaluated based upon accuracy and completeness.
- Reports
  - Example: Compile and present a report about a specific designated public land area (National Forest, State Park, National Park, Wilderness Area), describing the land ownership, land management, use opportunities, history, geography and ecology.

## Repeatable

No

## Methods of Instruction

- Lecture/Discussion
- Distance Learning

Lecture:

1. Instructor will conduct a lecture on a topic such as water in the Sierra Nevada: how much precipitation there is; geographically where and how (snow or rain) is falls; how, when, and where it moves through natural and man-made systems; how it is used by humans and ecosystems; who owns water rights; etc. Students will be asked to relate this information to readings they were required to conduct prior to class. Time will be provided during each session for reaction, review, and evaluation of each topic.

Distance Learning

1. Instructor will present a lecture on forest ecosystems in the Sierra Nevada. Topics include forest distribution based on elevation, precipitation, and soil; community structure; and human interactions in forests and uses for forest products. Slides will include photos and maps to provide a visual representation to correlate with verbal descriptions. Students will then write a report describing the Vegetation, Flora, and Life Zones of the Sierra Nevada. In the Distance learning modality, students will post their reports and comment on a minimum of 5 other students reports.

## Typical Out of Class Assignments

### Reading Assignments

1. Read Chapter in Sierra Nevada Natural History (Storer and Usinger). Compare this with the lectures and materials provided by your instructor and guest lecturers on geology and glaciology in the Sierra Nevada.
2. Read "Los Chilenos en California" by Ramon Gil Navarro, "The Luck of Roaring Camp" by Bret Harte, and the excerpt from "China Men" from Maxine Hong Kingston, all of which are in "The Illuminated Landscape" (Noy and Heide 2010). Discuss in class the how women and non-anglo people were treated by male anglo settlers in the Sierra in the nineteenth century. Compare this treatment to how the environment was treated during that time. Contrast that with how native peoples treated the environment.

### Writing, Problem Solving or Performance

1. Review the three cross-sections of the Sierra Nevada (north, central and south) and the elevation profile of the Sierra from north to south. In a 750-1000 word paper: (1) Describe the similarities and differences of the three cross-sections with regards to total width, total height, west- and east-slope gradient. (2) Describe the elevation profile of the Sierra. (3) Explain the relationship between the geographic attributes of slope, aspect and elevation and the corresponding climate and biological communities. 2. After reading Sierra\_In\_Peril by Tom Knudson (Sacramento Bee in 1991), write an essay (1) summarizing the threats to the Sierra as outlined by Knudson in this article. (2) Relate information in the article to specific examples of information covered in lecture and other course reading. Then (3) analyze whether this article is still relevant, almost 30 years after publication. Support your argument with specific data and examples. Cite sources using CSE format.

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

With your partner, create a 36"x48" tri-fold poster to be presented in class and displayed on campus at the annual People and Culture Days event. Each group will be assigned a specific Native American group from the Sierra Nevada. Information provided on the poster will include: Tribal group name, range (size (area), topography, ecosystems, current counties/cities), culture (language, traditions, food, tools, trade, etc), population (pre-European estimates and current population size (and location, where appropriate)), and other information as appropriate, such as the influence of ecosystems on culture and trade. References must be from reputable sources. Minimum of four references; utilize books, not just the Internet.

## Required Materials

- Sierra Nevada Natural History
  - Author: Storer, T.I., Unsinger, R.L., and 7 others
  - Publisher: UC Press
  - Publication Date: 2004
  - Text Edition: 2nd
  - Classic Textbook?:
  - OER Link:
  - OER:
- The Illuminated Landscape: A Sierra Nevada Anthology
  - Author: Noy/Heide
  - Publisher: Heyday
  - Publication Date: 2010
  - Text Edition:
  - Classic Textbook?:
  - OER Link:
  - OER:
- Crow's Range: And Environmental History of the Sierra Nevada
  - Author: David Beesley
  - Publisher: University of Nevada, Reno Press
  - Publication Date: 2004
  - Text Edition:
  - Classic Textbook?:
  - OER Link:
  - OER:
- The Laws Field Guide to the Sierra Nevada
  - Author: John Muir Laws
  - Publisher: Heyday
  - Publication Date: 2007
  - Text Edition:
  - Classic Textbook?:
  - OER Link:
  - OER:
- A Natural History of California
  - Author: Schoenherr
  - Publisher: University of California Press
  - Publication Date: 2017
  - Text Edition: 2nd
  - Classic Textbook?:

- OER Link:
- OER:

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

Map of the Sierra Nevada region