ESS 0006F - SIERRA NEVADA FIELD TRIP

Catalog Description

Prerequisite: Completion with grade of "C" or better or concurrent enrollment in ESS 6
Hours: 18 lecture per unit
Description: Field lecture course designed to be taken concurrently with ESS 6. A field study of selected sites in the Sierra Nevada ecoregion, comparing their biological inventory, ecological relationships, physical environments, and sensitivity to human interactions and activities. Moderate hiking and/or camping may be involved. (CSU)

Course Student Learning Outcomes

- CSLO #1: Describe the relationship of elevation, slope, aspect and soil on local ecosystems.
- CSLO #2: Describe the characteristics of local plants, animals and fungi to determine their identity, ecological and evolutionary relationships.
- CSLO #3: Explain principles of ecology and ecosystem function.
- CSLO #4: Identify the effects of human activities upon ecosystems from first hand observations in the field.

Effective Term

Fall 2020

Course Type

Credit - Degree-applicable

Contact Hours

9-18

Outside of Class Hours

18-36

Total Student Learning Hours

27-54

Course Objectives

1. Describe the relationship of elevation, slope, aspect and soil on local ecosystems;
2. Analyze the characteristics of local plants, animals and fungi to determine their identity, ecological and evolutionary relationships;
3. Apply principles of ecology and ecosystem function to examples present at specific study sites;
4. Deduce valid conclusions concerning the effects of human activities upon ecosystems from first hand observations in the field.

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

- Classroom Discussions
  - Example: Students will be asked to hypothesize potential impacts of global climate change on a specific biological community and evaluate measure for mitigation and adaptation. Grade based on participation. (Objective 4)
- Objective Examinations
  - Example: Instructor will provide the description of the elevation, slope, aspect and soil of a particular region of the Sierra and assess the student's ability to correctly identify what biological community is likely to be found at that location. (Objective 1)
- Projects
  - Example: Student will produce a field journal that is a complete narrative of the field trip experience. Students keep detailed field notes, both on site and en route to the site. Field notes are an essential component of field work and science. These notes will need to be comprehensive and exhaustive. They will be evaluated on how well they can act as a stand alone piece of documentation of the trip. (Objectives 1-4)
- Reports
  - Example: After returning from the trip, students write a detailed report on one species found in the field. Reports will be evaluated for their thoroughness and accuracy. Rubric Grading. (Objective 2)
- Skill Demonstrations
  - Example: Instructor will provide a sample organism in the field and assess the student's ability to properly identify the organism utilizing a dichotomous key. Pass/Fail grading. (Objective 2)

Repeatable

No

Methods of Instruction

- Lecture/Discussion
- Distance Learning

Lecture:

1. Instructor will stop at a site that illustrates a particular ecosystem. Students will make observations of the physical and biological components of the area, and instructor will explain relationships between geology, geography, and biology at the site.
2. The instructor will supervise students as they utilize dichotomous keys and field guides to identify organisms observed at field locations.

Typical Out of Class Assignments
Reading Assignments

1. Read the faculty-developed materials before going into the field. Preparedness is key to success in the field. Students will be expected to demonstrate preparedness on this trip. 2. Review maps and information on the site to be visited during the trip. Students will review the route

map for the field trip. They will utilize course materials to determine the ecosystems that they are likely to encounter along the route, and compare expectations to field observations. 3. Read one case history from the web regarding the human impact of increased population on study areas. This information is essential to prepare the students to understand what ecosystems they will encounter on the trip.

Writing, Problem Solving or Performance

1. Compose comprehensive and exhaustive course notes into a journal narrative of the trip. 2. Write a detailed account of one species viewed in the field: taxonomy, distribution, geographic range, ecology, behavior, etc.

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

1. Provide an illustrated or photographic representation of at least 15 species viewed in the field.

Required Materials

- The Laws Field Guide to the Sierra Nevada
  - Author: Laws, John Muir
  - Publisher: California Academy of Sciences
  - Publication Date: 2007
  - Text Edition: 1st
  - Classic Textbook?:
  - OER Link:
  - OER:
- Sierra Nevada Tree Identifier
  - Author: Paruk, Jim
  - Publisher: Yosemite Conservancy
  - Publication Date: 1997
  - Text Edition: 1st
  - Classic Textbook?:
  - OER Link:
  - OER:
- Sierra Nevada Topo Map, scale 1:500,000
  - Author: Imus Geographics
  - Publisher: Imus Geographics
  - Publication Date: 2006
  - Text Edition: 1st
  - Classic Textbook?:
  - OER Link:
  - OER:
- The California Naturalist Handbook
  - Author: Greg de Nevers, Deborah Stranger Edelman, & Adina Merenlender
  - Publisher: University of California Press
  - Publication Date: 2013
  - 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.

Additional handouts and information. Variety of reference materials (books, periodicals, etc.). Field journal