GEOL C115: CALIFORNIA GEOLOGY

Item	Value
Curriculum Committee Approval Date	10/20/2006
Top Code	191400 - Geology
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)
Local General Education (GE)	• Area 5A Physical Sciences (CB1)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 5A Physical Science (5A)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 5A Physical Science (5A)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B1 Physical Science (B1)

Course Description

Formerly: GEOL C130. An introduction to the current and historical geology of California, including an investigation of its tectonic processes, geologic structures, rocks and minerals, physiographic provinces, volcanoes, mountains, faults, and natural resources. During the course, students will develop an overall understanding of geology and then examine specific California regions, learning how and why California has so many geologic wonders. Transfer Credit: CSU; UC. C-ID: GEOL 200.**C-ID:** GEOL 200.

Course Level Student Learning Outcome(s)

1. Given specific in situ or photographic examples relevant to California geology, differentiate the geological features of each example, and the geological processes contributing to their formation.
2. Given two or more major physiographic provinces, correctly identify the differences between their current geologic settings, the dominant geologic hazards present, and major geologic events contributing to their current geologic setting.

Course Objectives

- 1. Locate the current plate boundaries in California and describe the landforms and structures generated at each.
- 2. Identify the major physiographic provinces of California and describe the current geology of each including information on the formation of dominant rock types with ages, tectonic setting, and geologic hazards.
- 3. Describe, using writing and diagrams, how California has evolved geologically over time.
- 4. Analyze the economic potential of natural resources in California based on their geologic setting.

Lecture Content

Geologic Evolution of California Plate Tectonics/Boundaries Geomorphology/Terranes Volcanism Faults and Earthquakes San Andreas Fault System Earthquake History Fault History Evolution of Plate Boundary Physiographic Provinces (cover 9 or more) Cascades Modoc Plateau Basin and Range (including Death Valley) Sierra Nevada Klamaths Coast Ranges Great Valley Mojave Desert Transverse Ranges Peninsular Ranges Colorado Desert California Coastline Natural Resources Water Resources Mineral Resources Energy Resources

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)

Instructional Techniques

Lecture, discussion, question-and-answer sessions, small-group problem solving, and case-study reviews based on real-life situations. Classroom instruction will be supplemented, where appropriate, by PowerPoint presentations, use of Internet technology, guest speakers, and field trips.

Reading Assignments

Several textbook chapters are assigned each week. There are also library and/or web-based reading assignments.

Writing Assignments

Reports on geological features in specific areas of California; written responses to guiding questions, media, and guest speakers.

Out-of-class Assignments

Practice exercises on various theories and lesson content; review tutorials on the more challenging concepts; and conduct library and/or web-based research.

Demonstration of Critical Thinking

Exam and essay guiding questions require knowledge of several concepts to be applied to reach a conclusion and select/present the correct response.

Required Writing, Problem Solving, Skills Demonstration

Interpreting the geological history of a site, identifying features on maps, describing how rocks and minerals form. Evaluation based on discussions and presentations.

Eligible Disciplines

Earth science: Master's degree in geology, geophysics, earth sciences, meteorology, oceanography, or paleontology OR bachelor's degree in geology AND master's degree in geography, physics, or geochemistry OR the equivalent. Master's degree required.

Textbooks Resources

1. Required Harden, Deborah R. California Geology, ed. Pearson Prentice Hall, 2013 Rationale: - Legacy Textbook Transfer Data: Legacy text

Other Resources

1. Handouts supplied by the instructor from a variety of different periodicals including Science; Geology; Geology: Field Guide to Southern California 2. Pamphlets from the California Division of Mines on Geology and reports from the United States Geological Survey; Bulletin of the Geological Society of America 3. Coastline Library