GEOL A115: CALIFORNIA GEOLOGY

Item	Value
Curriculum Committee Approval Date	12/08/2021
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
Grading Policy	Standard Letter (S), • Pass/No Pass (B)
Associate Arts Local General Education (GE)	• OC Physical/Biological Sci - AA (OB)
Associate Science Local General Education (GE)	• OCC Physical/Biological Sci-AS (OSB)

Course Description

The study of a geologic showcase--California. The geologic framework of our state and its corresponding geologic provinces; geologic factors which have influenced California's human history. The intimate interrelationships of geology with our agriculture, transportation, construction, mining, oil and gas industry, recreation and public welfare. Field trip required. Transfer Credit: CSU; UC. C-ID: GEOL 200.**C-ID:** GEOL 200.

Course Level Student Learning Outcome(s)

1. Differentiate among all three basic rock types, explain the rock cycle, and identify and describe the major rock types found in the state.
2. Compare and contrast the three basic types of plate boundaries and cite examples of where each is found in California.
3. Analyze the geologic structures and tectonic regimes that are active in the state.
4. Analyze the various erosional and depositional features found in the various geologic regions of California.
5. Evaluate the various geologic hazards and environmental issues which affect development in the state.

Course Objectives

- 1. Define and describe the geologic factors which influence our habitat.
- 2. Develop an appreciation of the beauty and natural advantages of California.
- 3. Define and describe the natural resources of California.
- 4. Gain an appreciation of the need to conserve much of the natural habitat present in California.
- 5. Explain the effects of resource utilization on the local environment.
- 6. Analyze the probability of a natural disaster occurring in the local area.
- 7. Explain the hydrological cycle and how it affects the groundwater system in our local area.
- 8. Analyze geologic features for hazards and benefits which are present.

Lecture Content

Plate Tectonics and California Californias Rocks and Minerals Geologic Time, Dating Earth Materials, and California Fossils—Basics of Faults and Folds Geologic Maps and Structures Geological Highlights of California Young Volcanoes: The Cascades, the Modoc Plateau, and the Long Valley Caldera Californias Deserts: Climate, Changing Environments, and Resources The Basin and Range and Mojave Desert: Old Rocks and Young Faults The Sierra Nevada: Granite, Gold, and Glaciers The Klamath Mountains: Accreted Terranes and a View of the Mantle Water in California The Great Valley: Sediments and Soils The Coast Ranges: Mountains of Complexity Earthquakes, Faults, and Seismic Safety The San Andreas Fault System The California Coast The Transverse Ranges, The Los Angeles Basin, and the Offshore Islands: Compression and Rapid Change The Peninsular Ranges The Evolution of California Through Geologic Time Geology and California Citizens—Including Resources, Hazardous Geologic Processes, Climate Change, Changing California Landscape

Method(s) of Instruction

- Lecture (02)

Instructional Techniques

1. Lecture and application of ideas 2. Individual, paired and small group exercises 3. Field trips to various areas of local geologic interest

Reading Assignments

Assigned from textbook

Writing Assignments

Examinations will include questions requiring written answers

Out-of-class Assignments

homework and field report assignments, test and quiz preparation

Demonstration of Critical Thinking

Tests (objective and essay questions), field trip report.

Required Writing, Problem Solving, Skills Demonstration

Examinations will include questions requiring written answers

Textbooks Resources

1. Required Harden, D.. California Geology, 2nd ed. Prentice Hall, 2003 Rationale: Most up-to-date text that covers the geology of California. With California plate tectonics as a central theme, this text is intended to acquaint non-geologists with California geology. Organized to introduce basic principles in the beginning of the text and work toward a unifying picture of California geology