I. CATALOG DESCRIPTION:

A. Division: Science
Department: Geology
Course ID: GEOL 250
Course Title: Geology of California
Units: 3
Lecture: 3 hours
Prerequisite: None.
Departmental Advisory: ENGL 015 eligibility for ENGL 101 as determined through the SBVC assessment process.

B. Course Description:
Physical and historical geology of California emphasizing the distinctive geologic features of each of California's twelve geomorphic provinces.

Schedule Description:
Physical and historical geology of California emphasizing the distinctive geologic features of each of California's twelve geomorphic provinces.

II. Number Of Times Course May Be Taken For Credit: One.

III. EXPECTED OUTCOMES FOR STUDENTS:

Upon completion of the course, the student will be able to:

A. describe the major geologic structural features of California,
B. understand the origin and significance of the 12 Geomorphic Provinces and Divisions in California,
C. identify the dominant geologic processes affecting each Province or Division,
D. understand the criteria for the differentiation of geomorphic Provinces,
E. understand the significance of the San Andreas Fault system in respect to California's geologic development,
F. identify the major economic mineral resources in California and their distribution throughout the state,
G. identify the major rock types and characteristic units found in each of California's geomorphic Provinces and Divisions,
H. identify the boundaries of the major Provinces and Divisions in California on topographic maps and aerial photographs, and
I. analyze evidence on geologic maps and cross-sections to describe the sequence of geologic events that led to the observable features.

ADVISORY ENTRANCE SKILLS:

Reading: This course is a beginning geology class at the collegiate level. There is no prerequisite but students are expected to:

A. read actively, annotating and paraphrasing the text,
B. summarize accurately,
C. evaluate evidence for relevance to one's purpose,
D. distinguish between facts, opinions, assumptions, and inferences,
E. understand a common English vocabulary equivalent to a High School Education,
F. be able to assimilate a new technical vocabulary appropriate to the subject matter,
G. organize information around a central idea,
H. select and present relevant evidence to support a proposition,
I. create a focused thesis statement, and
J. write sentences free of gross grammatical errors.

Writing: Before attempting this class students should be able to:

A. Organize information around a central idea,
B select and present relevant evidence to support a proposition,
C. create a focused thesis statement, and
D. write sentences free of gross grammatical errors.

IV. CONTENT:

A. California:
   1. General Geography
   2. Introduction to Plate Tectonics
   3. Geologic History of California

B. The Dynamics of California
   1. Plate Boundaries, past and present
   2. California's history of Earthquakes
   3. Volcanic activity and Igneous Rocks
   4. The Processes of Change

C. Geomorphic Provinces and Divisions
   1. Klamath Mountains
   2. Cascade Range and Modoc Plateau
   3. Coastal Ranges
   4. Sierra Nevada
   5. Transverse Ranges and the Peninsular Ranges
   6. Great Valley
   7. Basin and Ranges
   8. Mojave Desert and the Colorado Desert

V. METHODS OF INSTRUCTION:

A. Methods of instruction will vary from instructor to instructor, but may include lecture, directed discussions, research papers, small-group projects, discussion groups, audio-visual aids including computer-generated lecture outlines, lecture demonstrations, and field trips. Student assignments outside of class will be equivalent to 6 hours per week and may include reading, computer assisted instruction, writing assignments, short research assignments, special tutorial sessions, group study sessions, and/or individual preparation for objective exams.

B. Field trips in which students will be shown geologic features first hand, collect representative samples, perform field identifications, and assess the results of a variety of geologic processes.

C. Laboratory work, including instructor-guided demonstrations of mineral and rock identification and classification processes, student-initiated identification and classification of rocks and minerals, interpretation of topographic maps, and analysis and interpretation of geologic maps and cross-sections.

VI. TYPICAL ASSIGNMENTS:

A. Reading Assignments
   1. Selected assignments from the textbook
   2. Articles covering current events in geology (landslides, earthquakes, volcanic eruptions, floods) as well as long-term events (for example, natural resource depletion, environmental effects of mining and processing ores).

B. Writing Assignments
   1. Selected chapter exercises from the textbook.
   2. Instructor-prepared exercises, especially those involving illustrations (maps, charts, diagrams, cross-sections) and their analysis.
   3. A written term project, either a research paper or a group project, showing synthesis of the concepts and processes covered in the course.

C. Example

   Choose one of the magazine or newspaper articles on the reading list and analyze the following:
   1. Scientific accuracy
   2. Topic of study in this course
   3. What was reinforced as learned in this course
   4. What was new information for you
   5. Prepare a written summary and 3-5 minute class presentation.

VII: EVALUATION:

A. Methods of evaluation:
   1. Written quizzes and/or tests of a variety of types of questions from among true-false, multiple choice, fill-in, sentence completion, and short essay.
   2. Written exercises.
   3. Written summaries of magazine or newspaper articles.
   4. Laboratory assignments.
   5. Performance in the field, including the journal.
   6. Performance on the term project.

B. Frequency of evaluation:
   1. Quizzes are given in lecture at weekly or bi-weekly intervals.
   2. Exams are given on at the conclusion of each 1/3 of the course basis and culminates with a comprehensive final exam.
   3. Exercises are assigned on a frequency to support comprehension of material, as deemed appropriate by the instructor.
   4. Typically, the class will take two field trips each semester.

C. Typical exam questions
   1. Draw the boundaries of each of the major Geomorphic Provinces and Divisions on the Geomorphic map provided. Identify each Province or Division with the appropriate title.
   2. In the list below, identify the minerals that have an economic value in California.

a.	Plagioclase	f.	Corundum
b.	Kaolinite	g.	Chlorite
c.	Chalcedony	h.	Garnet
d.	Calcite	i.	Gypsum
e.	Hornblende	j.	Fluorite

   3. Identify the minerals in the display set by name and cite one or more locations in California where each of the minerals is extracted on an economic basis. What is the principal economic use of each mineral?
   4. Given the indicated area on the geological map and accompanying cross-section at your table, reconstruct the sequence of geologic events representing the geologic history of the area.

VIII. TYPICAL TEXTS:

Norris and Webb, *Geology of California*, 2nd ed., John Wiley and Sons., 1990.
Harden, Deborah R., *California Geology*, 2nd ed., Prentice-Hall, Inc., 1998.

IX. OTHER SUPPLIES REQUIRED OF STUDENTS: None.