

## 2007-09 Cal Poly Catalog

### [Earth and Soil Sciences Department](#)

## ERSC—EARTH SCIENCES

### **ERSC 110 Orientation in Earth and Soil Sciences (1) (CR/NC)** (Also listed as SS 110)

Understanding the depth and breadth of earth and soil sciences. Examine potential career opportunities. Introduction to both student and professional organizations. Credit/No Credit grading only. 1 activity.

### **ERSC 144 Introduction to Earth Systems (4)**

Survey of fundamental processes of Earth sciences. Application of systems thinking to understanding the dynamic interactions among geological, geographic, soils and human factors in shaping the Earth. 3 lectures, 1 activity.

### **ERSC 202 Soil Erosion and Water Conservation (4)**

Development of an erosion and sediment control plan using climate, topography, soils and land use in relation to soil and water quality. Evaluation of soil and water conservation plans and best management practices for agriculture, urban, riparian, and rangelands. 3 lectures, 1 activity. Prerequisite: SS 121 or consent of instructor.

### **ERSC 223 Rocks and Minerals (4)**

Origin, composition, identification and weathering of rocks, minerals, and clays important in the development of soils. Parent materials as related to the nature and properties of soils. 3 lectures, 1 laboratory. Prerequisite: SS 121, CHEM 111 or CHEM 128.

### **ERSC 250 Physical Geography (4) (Also listed as GEOG 250)**

Addresses the origins and patterns of the earth's diverse assemblage of climates, landforms, biota and soils. A major focus on relationship between human cultures and these earthly environments. 4 lectures.

### **ERSC 323 Geomorphology (4)**

Recognizing and identifying major landforms and their components by interpretation of aerial photographs and topographic maps, and observations. Emphasis on analyzing common landforms in the western United States for application in soil science, physical geography, hydrology, and geology. 2 lectures, 1 laboratory, 1 activity. Prerequisite: SS 121 and GEOL 201; or consent of instructor.

### **ERSC 325 Climate and Humanity (4) (Also listed as GEOG 325)**

Geographic perspective on the interrelationships between climate and human cultures. Effects of people on climate and the influence of climate and weather upon human activities and behavior. Focus on global human conditions which are responsible for the alteration of climate and in turn are vulnerable to climate change. 4 lectures. Prerequisite: Junior standing or consent of instructor.

### **ERSC 333 Human Impact on the Earth (4) (Also listed as GEOG 333)**

Global assessment of the impact of humans on the earth's vegetation, animals, soil, water and atmosphere. Emphasis on problems stemming from the interactions of human attitudes, technologies, and population with natural resources. 4 lectures.

### **ERSC 401 Field-Geology Methods (4) (Also listed as GEOL 401)**

Collecting and interpreting field-geologic data. Description of sedimentary rocks and construction of stratigraphic columns. Mapping geologic structures in the field. Surficial geologic stratigraphy and surficial geologic mapping. Understanding geologic processes through field study. Communicating results of field study. 1 lecture, 3 activities. Prerequisite: GEOL 102 or GEOL 201, GEOL 241, SS 223, SS 323.

### **ERSC 402 Geologic Mapping (4) (Also listed as GEOL 402)**

Bedrock geologic mapping on topographic maps and aerial photos. Surficial geologic mapping on topographic maps and aerial photos. Correlating and defining surficial geologic map units on the basis of soil development. Understanding landscape evolution using soil development 4 activities. Prerequisite: GEOL 102 or GEOL 201, GEOL 241, SS 223, SS 323, ERSC/GEOL 401.

### **ERSC 414 Global and Regional Climatology (4)** (Also listed as GEOG 414)

The earth's pattern of climates and the physical processes that account for them. Focus on interrelationships between climate and the physical/biological and cultural environments. Special emphasis on modern climate changes and their consequences. 3 lectures, 1 laboratory. Prerequisite: GEOG 250 or consent of instructor.

### **ERSC 415 Applied Meteorology and Climatology (4)** (Also listed as GEOG 415)

Physical processes in the atmosphere that determine regional weather, climate and climate variability. Surface and satellite systems for weather observation, and weather/climate modeling. Dynamics of weather systems, including thunderstorms and hurricanes. Emphases on weather/climate affecting agriculture and other human activities. 3 lectures, 1 activity. Prerequisite: GEOG/ERSC 250 or consent of instructor.

### **ERSC 461 Senior Project I (1)**

Senior project topic selection and contract development with project advisor. Statement of problems, subproblems, assumptions, objectives, hypothesis, methods of analysis and statistical design. Development of literature review and budget of time and finances. Proper format and presentation of tabular and graphic information. 1 activity. Prerequisite: MATH 118 or MATH 131, STAT 211 or STAT 321 or CRSC 411.

### **ERSC 462 Senior Project II (3)**

Implementation of materials and methods. Collection, analysis and interpretation of data. Completion of formal written report under advisor supervision. Minimum 90 hours. Prerequisite: ERSC 461.

### **ERSC 463 Undergraduate Seminar (2)**

Review of current research, experiments, and problems related to the student's major field of interest. Preparation and presentation of reports on problems or research activities. 2 seminars.

### **ERSC 544 Earth Sciences for Educators (3)**

An interdisciplinary earth sciences course which emphasizes the interactions of multiple systems of air, water, land, life, and human society. Designed for teachers and students seeking teaching credential. Incorporates scientific theory, learning resources, and applications in the field. 3 lectures. Prerequisite: Basic knowledge of earth sciences, graduate standing and consent of instructor. Not open to students in Soil Science specialization under MS Agriculture.

### **ERSC 570 Selected Topics in Earth Science (1-4)**

Directed group study of selected topics for advanced students. The Schedule of Classes will list topic selected. Total credit limited to 12 units. 1 to 4 seminars. Prerequisite: Graduate standing or consent of instructor.