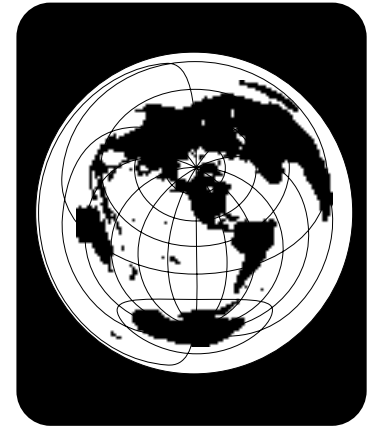




NOTE:

This document is specific to the  
2002-2004 printed catalog.

# geography



## BACHELOR OF ARTS MINOR CERTIFICATE

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### PROGRAM DESCRIPTION

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Geography is a contemporary discipline with ancient roots. Millennia ago the Egyptians and Greeks measured the Earth and the heavens and developed explanations for the diversity they saw. Geographers today maintain that same curiosity about places and spaces. They examine both physical and cultural landscapes, focusing on the many environments that people inhabit, alter, create, and perceive.

The Department of Geography at CSUS provides a wide range of courses for persons majoring in Geography. Lower division offerings in physical geography and cultural geography introduce students to the discipline. Upper division offerings add diversity. Students can choose among regional classes on many parts of the Earth, topical classes on subjects from population to landforms, and skill classes that include map making, map reading, spatial analysis, remote sensing, geographic information systems, and fieldwork.

Students majoring in Geography are encouraged to enroll in elective courses which are consistent with their particular geographical interests and concentrations. A minor in another academic field is not required, but it may be useful for some students to have a second specialization if they intend to pursue graduate studies or professional work in geography.

Foreign area or "regional" geography specializations normally require that a student gain competency in the language(s) of the area(s) studied, but there are no formal language requirements for the major or minor programs.

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### FACULTY

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Jack Mrowka, *Department Chair*

Marsha Dillon, Michael Fitzwater, Tim Hallinan, Thomas Krabacher, Jack Mrowka, Robert Richardson, Miles Roberts, C. Victor Wu

Laura Summers, *Administrative Support Assistant*  
*Department Office, Amador Hall 550, (916) 278-6109*

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### FEATURES

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Classroom study is enhanced by the department's location in Sacramento, which is California's capital city and the center of a diverse and dynamic metropolitan area. This area provides immediate examples for lectures and a wealth of research opportunities for field assignments. It also supplies many intern and employment situations for qualified students.

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### CAREER POSSIBILITIES

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Geographer • Cartographer • Climatologist • Environmental Scientist • Geographic Information System Specialist • Land Economist • Recreations Resource Planner • Site Researcher • Soil Conservationist • Urban Planner • Aerial Photo Interpreter • Remote Sensing Specialist • Community Development Specialist • Geographic Analyst • Geographer Planner • Land Use Planner • Weather Observer • Demographer • Teacher

## DEGREE REQUIREMENTS • BA

Units required for Major: 45

Minimum total units required for BA: 120

**Courses in parentheses are prerequisites.**

**Every candidate must complete the Geography Core and one Concentration.**

### A. Required Lower Division Core Courses (7 units)

- (3) GEOG 001 Physical Geography: The Distribution of Natural Phenomena
- (3) GEOG 002 Cultural Geography
- (1) GEOG 011 Laboratory in Physical Geography (GEOG 001; may be taken concurrently)

### B. Required Upper Division Core Courses (23 units)

- (3) GEOG 102 Ideas and Skills in Geography (GEOG 001, GEOG 002, GEOG 011)
- (2) GEOG 103 Map and Air Photo Interpretation
- (3) GEOG 118 The Changing Earth's Ecosystems
- (3) GEOG 190 Seminar in Geographic Thought (12 units of GEOG, including GEOG 001, GEOG 002, GEOG 102. Passing score on the WPE)

#### Geographic Techniques

- (3) Select one of the following:
  - GEOG 105 Computer Cartography
  - GEOG 107 Remote Sensing
  - GEOG 109 Geographic Information Systems
  - GEOG 110 Advanced Geographic Information Systems (GEOG 109 or instructor permission)
  - GEOG 181 Spatial Analysis
  - GEOG 193A Field Geography: Urban-Metropolitan
  - GEOG 193B Field Geography: Suburban-Rural (GEOG 001, GEOG 103 or GEOG 105; or instructor permission)
  - GEOG 193C Field Geography: Physical (GEOG 001, GEOG 117, GEOG 109 or GEOG 103 or GEOG 105; or instructor permission)

#### Physical Geography

- (3) Select one of the following:
  - GEOG 111 Elements of Meteorology (GEOG 001 or instructor permission)
  - GEOG 113 Climate (Knowledge of general world distribution of climatic elements as given in an introductory physical geography course.)
  - GEOG 115 Geography of Plants and Soils (GEOG 001)
  - GEOG 117 Land Forms (GEOG 001 or instructor permission)
  - GEOG 161 California's Water Resources

#### Human Geography

- (3) Select one of the following:
  - GEOG 141 Geography of Economic Activity
  - GEOG 145 Population Geography
  - GEOG 147 Urban Geography
  - GEOG 163 Applied Resources Planning (GEOG 109 or instructor permission)

#### Regional Geography

- (3) Select one of the following:
  - GEOG 121 United States and Canada
  - GEOG 122A Mexico, Central America and the Caribbean
  - GEOG 122B South America
  - GEOG 125 Geography of East Asia
  - GEOG 126 Geography of Southeast Asia

- GEOG 127 Geography of Africa
- GEOG 128 Geography of Europe
- GEOG 131 California (may not be counted toward the major in addition to GEOG 132)

### C. Concentration Requirements (15 units)

Please note courses cannot double count for the core and the concentration.

#### 1. General Geography Concentration

- (6) Students must take two of the following technique courses in addition to the one chosen for their core:
  - GEOG 105 Computer Cartography
  - GEOG 107 Remote Sensing
  - GEOG 109 Geographic Information Systems
  - GEOG 110 Advanced Geographic Information Systems (GEOG 109 or instructor permission)
  - GEOG 181 Spatial Analysis
- (3) Students must take one of the following physical geography courses in addition to the one chosen for their core:
  - GEOG 111 Elements of Meteorology (GEOG 001 or instructor permission)
  - GEOG 113 Climate (Knowledge of general world distribution of climatic elements as given in an introductory physical geography course.)
  - GEOG 115 Geography of Plants and Soils (GEOG 001)
  - GEOG 117 Land Forms (GEOG 001 or instructor permission)
  - GEOG 161 California's Water Resources
- (3) Students must take one of the following human geography courses in addition to the one chosen for their core:
  - GEOG 141 Geography of Economic Activity
  - GEOG 145 Population Geography
  - GEOG 147 Urban Geography
  - GEOG 163 Applied Resources Planning (GEOG 109 or instructor permission)
- (3) Students must take one of the following regional geography courses in addition to the one taken for their core:
  - GEOG 121 United States and Canada
  - GEOG 122A Mexico, Central America and the Caribbean
  - GEOG 122B South America
  - GEOG 125 Geography of East Asia
  - GEOG 126 Geography of Southeast Asia
  - GEOG 127 Geography of Africa
  - GEOG 128 Geography of Europe
  - GEOG 131 California

#### 2. Cartography, Geographic Information Systems and Planning Concentration

- (15) Students must take five of the following in addition to the technique course chosen for their core:
    - GEOG 105 Computer Cartography
    - GEOG 107 Remote Sensing
    - GEOG 109 Geographic Information Systems
    - GEOG 110 Advanced Geographic Information Systems (GEOG 109 or instructor permission)
    - GEOG 163 Applied Resources Planning (GEOG 109 or instructor permission)
    - GEOG 181 Spatial Analysis
- Note:** Students may take only one additional field course from GEOG 193A, GEOG 193B or GEOG 193C.

### 3. Physical Geography Concentration

- (15) Students must take four of the following courses and one technique course in addition to the one chosen for their core:
- GEOG 111 Elements of Meteorology (GEOG 001 or instructor permission)
- GEOG 113 Climate (Knowledge of general world distribution of climatic elements as given in an introductory physical geography course)
- GEOG 115 Geography of Plants and Soils (GEOG 001)
- GEOG 117 Land Forms (GEOG 001 or instructor permission)
- GEOG 161 California's Water Resources
- Note:** If the student has taken a field course for their core, the additional technique course cannot be a second field course.

- GOVT 180 California State and Local Government
- GOVT 185 Problems of Urbanization (GOVT 001 or equivalent)
- OBE 150 Management of Contemporary Organizations

### 2. Resource Planning Concentration

- (15) Select five of the following:
- BIO 005 General Biology
- ECON 120 Economics and Environmental Degradation
- GEOG 109 Geographic Information Systems
- GEOG 117 Land Forms (GEOG 001 or instructor permission)
- GEOG 161 California's Water Resources
- GEOL 010 Physical Geology
- GOVT 170 Public Policy Development (GOVT 001 or equivalent. Passing score on the WPE)
- GOVT 180 California State and Local Government
- OBE 150 Management of Contemporary Organizations

## MINOR REQUIREMENTS

Total units required for Minor: 21.

Specific course requirements are:

- (3) GEOG 001 Physical Geography: The Distribution of Natural Phenomena
- (3) GEOG 002 Cultural Geography
- (1) GEOG 011 Laboratory in Physical Geography (GEOG 001; may be taken concurrently)
- (3) GEOG 102 Ideas and Skills in Geography (GEOG 001, GEOG 002, GEOG 011)
- (2) GEOG 103 Map and Air Photo Interpretation
- (3) GEOG 113 Climate (Knowledge of general world distribution of climatic elements as given in an introductory physical geography course) **OR**
- GEOG 111 Elements of Meteorology (GEOG 001 or instructor permission)
- (3) Select one of the following:
- GEOG 141 Geography of Economic Activity
- GEOG 145 Population Geography
- GEOG 147 Urban Geography
- (3) Course in Geography with departmental advisor approval.

## PRE-PLANNING CERTIFICATE

The program in pre-planning consists of 15 units in addition to the major and culminates in a certificate. Select either the Metropolitan or Resource Planning Concentration below. No more than two courses may be taken in any one department.

### 1. Metropolitan Planning Concentration

- (15) Select five of the following:
- HIST 163 The City in U.S. History
- ECON 104 Introduction to the U.S. Economy
- ECON 120 Economics and Environmental Degradation
- GEOG 109 Geographic Information Systems
- GEOG 145 Population Geography
- GEOG 147 Urban Geography
- GEOG 161 California's Water Resources
- GOVT 170 Public Policy Development (GOVT 001 or equivalent. Passing score on the WPE)

Students must have an advisor and will not be allowed to proceed in the program without an advisor's signature. In some cases courses may be accepted that have already been completed. There can be no double counting from among courses used in the major.

## LOWER DIVISION COURSES

**GEOG 001. Physical Geography: The Distribution of Natural Phenomena.** Introductory study of the distribution over the face of the earth of selected aspects of climate, plant cover, soils, and landforms and of processes and conditions giving rise to these distributions. The use of maps as communicative devices in comparative analysis and study of distribution and processes. 3 units. (CAN GEOG 002)

**GEOG 002. Cultural Geography.** A consideration of the diversity of patterns of land use, settlement and movement established and evolved by humans as a result of the interaction of cultural and physical factors; emphasis on student use of maps and other tools of geographic presentation for analyzing the nature, variation and distribution of cultural features of the earth's surface. 3 units. (CAN GEOG 004)

**GEOG 011. Laboratory in Physical Geography.** Makes the ideas and relationships of introductory physical geography more clear by observation and experiment. Use is made of maps, globes, models, meteorological instruments and records, satellite photos and observations of the local scene. Laboratory, three hours. **Prerequisite:** GEOG 001; may be taken concurrently. 1 unit. (CAN GEOG 006)

## UPPER DIVISION COURSES

**GEOG 100. Themes in World Geography.** A study of the content of geography with a consideration of basic concepts and methods. Emphasis is on patterns and relationships of the elements and manifestations of physical and cultural geography, including both topical and regional discussions. 3 units.

**GEOG 102. Ideas and Skills in Geography.** Study and discussion of geographic ideas. Introduction to library resources appropriate to geographic inquiry. Practice in geographic descriptive and analytical writing and geographic research. Extensive use of maps. Required of geography majors in the junior year. **Prerequisite:** GEOG 001, GEOG 002, GEOG 011. 3 units.

**GEOG 103. Map and Air Photo Interpretation.** Introduction to the language and content of maps and air photos. Emphasis on use of topographic maps in the systematic study of landforms of diverse origin. Passing score on ELM recommended. Lecture one hour; laboratory three hours. 2 units.

**GEOG 105. Computer Cartography.** Preparation of maps and diagrams, emphasizing thematic map design using various mapping and design programs. Detailed study of important map projections. Passing score on ELM exam recommended. Lecture one hour, laboratory six hours. 3 units.

**GEOG 107. Remote Sensing.** Aerial photographs and scanned satellite images, emphasis on the former. Topics include the electromagnetic spectrum, cameras, films, image geometry as related to planimetric and topographic mapping, multispectral techniques, and interpretation of imagery, emphasizing land use and landforms. Lecture two hours; laboratory three hours. **Prerequisite:** GEOG 103; passing score on ELM recommended. 3 units.

**GEOG 109. Geographic Information Systems.** Introduction to GIS, including history and overview of current applications; the nature of spatial data; geographic data structures, acquisition, analysis, and display of geographic data. Lab exercises use various computers and include both raster- and vector-based GIS systems. Lecture two hours; laboratory three hours. 3 units.

**GEOG 110. Advanced Geographic Information Systems.** This course builds on the introduction to the hardware, software and operations of GIS offered with the previous courses, providing the essentials required by a beginning GIS analyst or applications support specialist. Emphasis will be placed on problem solving strategies in the context of GIS projects. **Prerequisite:** GEOG 109 or instructor permission. 3 units.

**GEOG 111. Elements of Meteorology.** Basic concepts of weather and weather elements: structure and general circulation of the atmosphere, earth's heat and water balance, precipitation, air masses and fronts, air pollution meteorology. Some micrometeorological concepts with application to air pollution, agriculture, and similar problems. **Prerequisite:** GEOG 001 or instructor permission. 3 units.

**GEOG 113. Climate.** A study of the distribution of heat and moisture over the earth's surface. Basic processes by which heat and moisture acquire unequal distributions in space and time. Classification of climate. Climatic change. Climate models. **Prerequisite:** Knowledge of general world distribution of climatic elements as given in an introductory physical geography course. 3 units.

**GEOG 115. Geography of Plants and Soils.** A study of the nature and worldwide distribution of vegetation-soil ecosystems. Topics include the environmental and genetic factors affecting plant distribution, vegetation classification and mapping, soil chemistry, nutrient cycles, classification of soils, environmental factors affecting soil genesis, particularly the interrelationships between the vegetation community and soil development. **Prerequisite:** GEOG 001. 3 units.

**GEOG 117. Land Forms.** A study of the surface forms of the land with particular attention to their distribution and to the accompanying distribution of natural forces and processes which have brought the land forms into being. Problems of representing such distributions on maps. **Prerequisite:** GEOG 001 or instructor permission. 3 units.

**GEOG 118. The Changing Earth Ecosystems.** Studies ecosystems from a geographical standpoint. Regions of the earth are discussed in terms of human induced changes and taken up in the order of human occupation. Recent changes, current problems, and future prospects are a major portion. 3 units.

**GEOG 121. United States and Canada.** Present distribution and historical development of population, land use and industry in the United States and Canada in relation to regional variations in the physical environment and cultural heritage. 3 units.

**GEOG 122A. Mexico, Central America, and the Caribbean.** The physical and cultural geography of the Middle American and Caribbean region, from Mexico to Panama, and from Cuba to Trinidad, are examined in detail. Topics include the distributions of the physical, cultural, and economic geographic phenomena and the processes which generated these patterns, as well as the interrelationships among these features and processes. 3 units.

**GEOG 122B. South America.** The physical and cultural geography of South America are examined in detail. Topics include the distributions of the physical, cultural, and economic geographic phenomena and the processes which generated these patterns, as well as the interrelationships among these features and processes. 3 units.

**GEOG 125. Geography of East Asia.** The geographic setting and nature of Far Eastern civilization; origins, development and present outlines of settlement; cultures, resource use, economic structures, population, levels of technological achievement, and land use in China, Japan and Korea. 3 units.

**GEOG 126. The Geography of Southeast Asia.** Study of the geography of Southeast Asia, including physical bases, cultural geography, resources and economic geography, agriculture, population movements and urbanization. Recent changes are included, as well as the impact of the Southeast Asian nations on the regional and world economy. 3 units.

**GEOG 127. Geography of Africa.** Emphasis is on sub-Saharan Africa with consideration given to selected topics such as population problems, industrialization, regional groupings, transportation, and internal and external relationships. 3 units.

**GEOG 128. Geography of Europe.** A survey of Europe with emphasis on its physical environment, contemporary demographic, economic, and ethnic patterns, and the changing political landscape. Consideration will also be given to Europe's historic and present-day links with other world regions, and to the geographic basis for many of the social, political, economic, and environmental challenges facing contemporary Europe. 3 units.

**GEOG 131. California.** A study of landforms, climate, vegetation, population distribution and change, industry, transportation, water, energy, and agriculture in California. 3 units.

**GEOG 141. Geography of Economic Activity.** Spatial organization of man's activities related to production, exchange and consumption. Attention is given to resource development and the areal variations of factors affecting it, to concepts of spatial interaction and to spatial aspects of agricultural, industrial and urban land use. An examination of problems related to regional economic development. Changing perceptions of spatial organization of economic activities is also considered. Emphasis is on both theoretical framework and case study applications. 3 units.

**GEOG 145. Population Geography.** Spatial patterns of population numbers and characteristics; migration and spread of ideas; potential for economic and cultural developments. 3 units.

**GEOG 147. Urban Geography.** A consideration of cities as centers of human activity from the rise of urban life in the Old and New Worlds to the present day patterns of metropolis and megalopolis. The functions and interactions of cities in Earth's limited space and on Earth's limited resources are studied historically and crossculturally. Also examined are changing perceptions of the urban phenomenon and attempts to enhance the quality of urban life. 3 units.

**GEOG 161. California's Water Resources.** A study of the location and nature of the state's surface and underground water, including development by government agencies, water needs of cities, farms, recreation and wildlife, implications of water rights, water marketing and conservation, and management of floods, droughts and pollution. 3 units.

**GEOG 163. Applied Resources Planning.** The application of Advanced GIS Resource Planning and modeling tools, including the detailed understanding of the analytical capabilities of several of the recent GIS developments in geographic modeling using computer techniques and programs such as Arcview's Hydrologic Modeling, Spatial Analyst, Network Analyst and 3-D Analyst. Lecture two hours and Laboratory three hours.  
**Prerequisite:** GEOG 109 or instructor permission. 3 units.

**GEOG 181. Spatial Analysis.** Introduction to techniques useful in the analysis of spatial distributions and other geographic phenomena: basic descriptive and inferential techniques, time series, correlation, regression, and the use of models in geography. 3 units.

**GEOG 190. Seminar in Geographic Thought.** Seminar studies major ideas, concepts, problems, and methods in geography as shown in examples of geographic inquiry from ancient Greece to the present. Intensive reading and seminar discussions.  
**Prerequisite:** 12 units of geography, including GEOG 001, GEOG 002, GEOG 102. Passing score on the WPE. 3 units.

**GEOG 192. Field Trip in Geography.** Field trips to study the physical and cultural geography of the American West. Material and topics studied are broad in scope. Fee course/field trip. May be taken more than once up to a total of 6 units. 1-3 units.

**GEOG 193A. Field Geography: Urban-Metropolitan.** Examines the internal structure and external relations of Sacramento as a metropolitan center and of nearby urban communities through field observation and exercises. Emphasis is placed on mapping and interviewing as ways of gaining useful information on urban patterns. 3 units.

**GEOG 193B. Field Geography: Suburban-Rural.** Examines competition for land use in suburban Sacramento as urban sprawl overruns less intensive uses. Small towns in the lower Sacramento Valley also examined. Group field trips, interviews, field mapping and discussions. **Prerequisite:** GEOG 001, GEOG 103 or GEOG 105; or instructor permission. 3 units.

**GEOG 193C. Field Geography: Physical.** Survey of selected areas with systematic examination of elements of the natural landscape. Group field trips and individual preparation of reports and consultation with instructor. **Prerequisite:** GEOG 001, GEOG 117, GEOG 109 or GEOG 103 or GEOG 105; or instructor permission. 3 units.

**GEOG 194. Geography - Related Work Experience.** Supervised employment in a company or agency doing geography-related work, arranged through the Department of Geography and the Cooperative Education Program office. Requires preparation of application packet, completion of a 3-6 month full- or part-time work assignment, and a written report. Units not applicable to the geography major. **Prerequisite:** Upper division standing, completion of lower division geography requirements, 2.5 GPA or better, passing score on the WPE, consent of Department Chair. Graded Credit/No Credit. 6-12 units.

**GEOG 195. Internship.** Supervised work experience in an approved professional environment, working with professionals in public or private organizations. Supervision supplied by a geography faculty member and on-site supervisor. Placements require 4-12 hours per week, depending on units. **Note:** Open to all Geography majors and minors with permission of supervising faculty member and Department Chair. May be repeated for up to 6 units. Graded Credit/No Credit. 1-3 units.

**GEOG 196. Experimental Offerings in Geography.** For upper division students with qualifications and interest in special areas of geographic study. Offered when sufficient number of students justifies an undergraduate proseminar on a particular phase of geography. 2-3 units.

**GEOG 198. Co-Curricular Activities.** Co-curricular activities related to subject matter and concerns of the Geography Department, e.g. students may qualify for credit by providing special tutorial assistance to EOP students or others in introductory courses. Graded Credit/No Credit. 1-3 units.

**GEOG 199. Special Problems.** Individual projects or directed reading. **Note:** Open only to students competent to carry on individual work. **Prerequisite:** Approval of the faculty sponsor and Department Chair. 1-3 units.

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## GRADUATE COURSES

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**GEOG 299. Special Problems.** Individual projects or directed reading. **Note:** Open only to those students competent to carry on individual work. **Prerequisite:** Approval of the faculty sponsor and Department Chair. 1-3 units.