



Geography Student Handbook



Sacramento State Geography, 2020-21



Geography Student Handbook

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Welcome to Geography

"Of all the disciplines, it is geography that has captured the vision of the earth as a whole."

Kenneth Boulding

WELCOME, GEOGRAPHY STUDENTS!

Welcome to our department.

This student handbook provides a way for you to track your degree progress and helps you navigate a path—not only to complete your degree—but to seek a profession in geography or attend graduate school. Hopefully, it will serve you as a convenient resource for general information about the department, information about the degree programs, whom to contact with various questions, and a little about the discipline of geography.



This handbook does not replace the personal one-to-one contact between you and your advisor. We require that you meet with your advisor every fall semester before you register for Spring courses. If you have specific questions about courses or your degree progress, ask your advisor, and you can ask these questions at any time. When you declare geography as your degree, you are automatically assigned an advisor, but you may, at any time, change your advisor to one of the other full-time professors. Simply tell the department coordinator (Lori Phillips; 916-278-6109, geography@csus.edu) who you want to advise you. The decision is yours.

The department coordinator is a great source for advice and answers to general questions. The department office is located in Sequoia Hall 334. You can contact any of our faculty by e-mail, phone or leave them a note in their mailbox (in the department office). We are here for you.

Most importantly, the department faculty and staff want you to do your best, succeed, and to enjoy your academic experiences in our department. Again, welcome.

Dr. James Wanket
Professor and Chair of Geography
jwanket@csus.edu
Sequoia Hall 334
Telephone (916) 278-7580

DEPARTMENT OFFICE

We are located in Sequoia Hall, Room 334. It is usually open between 8:00 a.m. and 5:00 p.m., Monday through Friday (although summer hours are from 7:30 to 4:00 p.m.) with the exception of the lunch hour. Our department coordinator, Lori Phillips, will do her best to help with any inquiries. She can aid you with many tasks including:



- making initial inquiries
- leaving written messages for faculty
- handing in course work outside of class time
- furnishing proper forms including (but not limited to) add/drop, withdrawal, change advisor, and name/address/contact change.
- changing your major or concentration
- helping to schedule appointments with your advisor or other faculty
- answering general questions

Lori Phillips
Geography Department Coordinator
geography@csus.edu
Telephone (916) 278-6109
Sequoia Hall 334

CONTACTING GEOGRAPHY AT CSU SACRAMENTO

Our address is:
Department of Geography
CSU Sacramento
6000 J St.
Sacramento, CA 95819-6003
Telephone: (916) 278-6109
E-mail: geography@csus.edu
Web site address: <http://www.csus.edu/geog/>

BECOMING INVOLVED

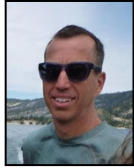
The Sacramento State Geography Department has a chapter of Gamma Theta Upsilon, the international honor society in geography, as well as a club for its majors. The Sacramento State Geography Club schedules regular social events at which students, faculty, and staff have a chance to relax and socialize.

We encourage student participation in the annual meetings of the California Geographical Society and the Association of Pacific Coast Geographers, which usually occur in May and September, respectively. Both include student paper and poster competitions. You can learn about these organizations and their opportunities for students at <http://calgeog.org/> and <http://apcgweb.org/>.

FACULTY PROFILES AND CONTACT INFORMATION

Our department houses very active geographers who are involved in successful efforts of teaching, research, scholarship, creative activities, community service, and leadership in the discipline. The following list outlines the degrees, specializations, some of the courses they teach, and contact information for each of our faculty members:

Tenure-Track Faculty



Bruce Gervais, Ph.D. (UCLA), Professor

Interests: Biogeography, Climatology, Paleoecology, Sustainability.

Courses: Physical Geography, Meteorology, Biogeography, Earth Transformed.

SQU 308
gervais@csus.edu
(916) 278-4207

SQU 330
anna.kp@csus.edu
(916) 278-4272

Anna Klimaszewski-Patterson, Ph.D. (UNR), Assistant Professor

Interests: Paleoecology/Landscape Archaeology; Landscape Modeling; Geovisualization; Augmented/Virtual Reality and Internet of Things (IoT); GIScience; Applied Geography

Courses: Applied GIS, Computer Cartography, Programming for GIS I & II, Physical Geography, Visualizing Global Environments



Tom Krabacher, Ph.D. (UC Davis), Professor

Interests: Cultural Ecology, Economic Development, Landscapes, Environmental History.

Courses: Physical Geography, Themes in World Geography, Climate, Population, Geography of Africa, Field Geography (Suburban-Rural), Senior Research Seminar in Geography, Ideas & Skills in Geography

SQU 334
krabacherts@csus.edu
(916) 278-6338

AMD 551D
hajimolana@csus.edu

Hanieh Haji Molana, Ph.D. (Kent State), Assistant Professor

Interests: Cultural Geography, Geography of the Middle East, Feminist Geography, Urban Geography, Qualitative Methods.

Courses: Cultural Geography, Geography of the Middle East



Patrick Oberle, Ph.D. (Syracuse), Assistant Professor

Interests: Urban Geography, GIScience, Participatory GIS, Historical Geography, Post-Industrial Cities, North America

Courses: Geographic Information Systems, Housing in the United States, Applied GIS, Senior Research Seminar, Themes in World Geography

SQU 310
patrick.oberle@csus.edu
(916) 278-3881

AMD 311
mroberts@csus.edu
(916) 278-6102

Miles Roberts, Ph.D. (University of South Carolina), Professor

Interests: Geomorphology, Biogeography, Ecology, Spatial Statistics.

Courses: Physical Geography, Remote Sensing, Geographic Information Systems.





Mathew Schmidlein, Ph.D (University of South Carolina), Professor

Interests: Environmental Hazards and Vulnerability, GIScience, Human Geography, Public Health.

SQU 334
schmidlein@csus.edu
(916) 278-7581

Courses: Advanced Geographic Information Systems, Quantitative Methods in Geography, Physical Geography, Physical Geography Lab, Environmental Hazards & Society, Introduction to Maps & Geographic Techniques.

SQU 334
jwanket@csus.edu
(916) 278-7580

James Wanket, Ph.D. (UC Berkeley), Professor and Chair

Interests: Quaternary Studies, Climate Change, Biogeography, Geomorphology, California.



Courses: Physical Geography, Physical Geography Lab, Global Climate Change, Field Geography (Physical), Landforms, Senior Research Seminar in Geography.

Lecturers 2020-2021

Emily Bukowski	Courses: Themes in World Geography, Physical Geography, Physical Geography Lab	SQU 332 bukowski@csus.edu (916) 278-6410
Michelle Drehobl	Courses: Physical Geography Lab, Cultural Geography	SQU 332 michelledrehobl@csus.edu (916) 278-6410
Jennifer Kusler	Courses: Violent Weather, Physical Geography, Physical Geography Lab, Lab Coordinator	SQU 332 j.kusler@csus.edu (916) 278-6410
Kyle Loewen	Courses: Urban Geography, Transportation Geography, Cultural Geography	SQU 332 kyle.loewen@csus.edu (916) 278-6410
Laura McGowan, Ph.D.	Courses: Meteorology, Global Climate Change	SQU 332 mcgowan@csus.edu (916) 278-6410
Marius Petraru, Ph.D.	Courses: Physical Geography, Physical Geography Lab, Cultural Geography	SQU 332 mpetraru@csus.edu (916) 278-6410
Sean Pries, Ph.D.	Courses: GIS, California Water Resources, Physical Geography, Physical Geography Lab	SQU 332 pries@csus.edu (916) 278-6410
Matt Rosenberg	Courses: California, Themes in World Geography, Cultural Geography	SQU 332 rosenberg@csus.edu (916) 278-6410
João Santos, Ph.D.	Courses: Landforms, Physical Geography	SQU 332 joao.santos@csus.edu (916) 278-6410
Jane Slavensky	Courses: Physical Geography Lab	SQU 332 jane.slavensky@csus.edu (916) 278-6410
Kimberly Walton	Courses: U.S. and Canada, Field Geography (Sustainability), Themes in World Geography, Cultural Geography, Physical Geography, Physical Geography Lab	SQU 332 geoprofessor@aol.com (916) 278-6410

What is geography?

“Geography is the study of earth as the home of people.”

Yi-Fu Tuan

DEFINITIONS

Geography explores the interrelationships between people and the Earth. To comprehend this human-environment interface, our students study climate, weather, landforms, water resources, plants and animals, and at the same time, peoples, societies, economies, and cities to reveal some of the biggest challenges of our time including climate change, resource degradation, urban growth and design, globalization, immigration, and ethnic and territorial conflict. Geography's approach to these issues emphasizes its interrelationships and spatial patterns, which overlap in intricate ways and give rise to distinctive places, environments, regions, and landscapes. Students work with a variety of data and tools, including traditional paper maps, Global Positioning Systems (GPS), Geographic Information Systems (GIS), and other computer applications to collect, display, and analyze spatial data. Geography's unique combination of knowledge and analytical techniques, produce a clear understanding of the interaction between the environment and people including human impacts on the environment and their effects on us.

As an integrative discipline, drawing on knowledge and data common to many physical sciences, social sciences, and even the humanities, geography encourages students to develop a spatial perspective to explore key issues facing society and the environment. Thus, geographers offer society, government, and academia a perspective that emphasizes the character of place, patterns and processes, and locational analysis. We contribute to a better understanding of today's world and provide options for a better one.

If you like to travel, use and read maps, learn about peoples and places, and collect and analyze data; then you are—in some ways—a geographer. If you are interested in teaching, exploring new landscapes, analyzing the relationships between people and their environment, using and applying new computer technologies, creating better places, or solving environmental problems, then geography is an ideal major.

Geography graduates are in demand. As the Association of American Geographer's pamphlet on Careers in Geography states, “more geographers than ever before are employed in exciting jobs, using skills in cultural, regional, and physical geography as well as modern technologies that have revolutionized the workplace.”

AREAS OF GEOGRAPHIC STUDY

The discipline of geography can be divided into subfields. These include *human geography*, which studies the spatial aspects of human settlement, cultures, and human uses of the Earth's environments; *physical geography*, which studies spatial patterns, processes, and interrelationships in the natural environment; *regional geography*, which involves the study of human and physical geography within defined world regions; and *methodology*, which employs principles, techniques, and tools of the discipline such as maps, aerial photographs, geographic information systems, remote sensing, global positioning systems, virtual globes, satellite imagery, and field instruments.

The Association of American Geographers lists a number of specialty groups (most of which are subfields) that their member geographers belong to. There are more subfields than the following list includes (and there are specializations within many of the following subfields. For example, the subfield of geomorphology can be broken into many specializations including fluvial geomorphology, glacial geomorphology, soils, and quaternary studies), but the list provides a peek into geography's breadth.



Africa
Animal
Applied Geography
Asian Geography
Bible
Biogeography
Business Geography
Canadian Studies
Cartography
China
Climate
Coastal and Marine
Communication
Cryosphere
Cultural and Political Ecology
Cultural Geography
Cyberinfrastructure
Development Geography
Disability
Economic Geography
Energy and Environment
Environmental Perception and Behavioral Geog
Ethics, Justice, and Human Rights
Ethnic Geography
European
Geographic Information Science and Systems
Geographic Perspectives on Women
Geographies of Food and Agriculture
Geography Education
Geography of Religions and Belief Systems

Geomorphology
Hazards, Risks, and Disasters
Health and Medical Geography
Historical Geography
History of Geography
Human Dimensions of Global Change
Indigenous Peoples
Landscape
Latin American
Middle East
Military Geography
Mountain Geography
Paleoenvironmental Change
Polar Geography
Political Geography
Population
Qualitative Research
Recreation, Tourism, and Sport
Regional Development and Planning
Remote Sensing
Rural Geography
Russian, Central Asian, and East European
Sexuality and Space
Socialist and Critical Geography
Spatial Analysis and Modeling
Study of the American South
Transportation Geography
Urban Geography
Water Resources
Wine

Your Program

"A map is the greatest of all epic poems. Its lines and colors show the realization of great dreams."

Gilbert Grosvenor

ADVISING

Geography students are assigned an advisor as soon as they become majors. You may change your advisor at any time. Academic Advising is required during each Fall semester before you register for Spring courses. Make appointments early to protect your priority registration. To schedule an appointment, contact your advisor. After you meet with your advisor, the academic hold will be lifted, and you may register for your Spring courses. If you wish to change your advisor, please contact the department coordinator.



THE DEGREE PROGRAM

The Geography Department offers a B.A. in Geography that features balanced preparation in physical and human geography, geographic skills and techniques, and regional study. Four concentrations within the major allow for specializations in human geography, physical geography, GIS, and urban planning. The Department has two computer labs to support training in GIS, GPS, computer cartography, and remote sensing, and to allow students to pursue independent research projects. Available software includes ESRI's ArcGIS (with 3-D, Network Analyst and Spatial Analyst extensions) and ERDAS remote sensing programs. The department is home to the campus's Paleoecology Lab.

Lower division offerings in physical geography, cultural geography, and geographical techniques introduce students to the discipline. At the upper division level, students can choose among regional classes, topical classes ranging from meteorology to transportation, and technique classes that include GIS, map making, spatial analysis, remote sensing, and field work. Geography majors select a concentration in a geographic subfield of their choosing.

In the department's capstone course (Geog 190), majors display their geographic knowledge and skills via senior research projects. These projects, usually in the form of posters, are on display at the department's annual Poster-Palooza event.

THE CONCENTRATIONS

All Geography majors are required to select at least one of four concentrations in a geographic subfield. The objective of the concentration is to provide a focus on study and experience within the Geography major. The four concentrations from which to choose are:

Geographic Information Systems and Analysis (GISA) - The GISA concentration gives students majoring in Geography a firm understanding of the theory and practice of GIS and other spatial analytical techniques. Students develop an understanding of geographic concepts and systematic approaches through completing the Department's standard lower division, core, and breadth coursework. Upper-division coursework ground students in basic GIS concepts, and allow them to choose from electives that equip them with more specific analyses and output skills

Human Geography - The Human Concentration gives students a broad, well-rounded understanding of the discipline of geography within the context of the social and human spheres of influence and interactions, and serves as an ideal basis of further graduate work.

Metropolitan Area Planning (MAP) - Students choosing this path develop expertise in planning and development in metropolitan regions, working closely with various experts in the field through coursework and internships. A broad array of planning courses are offered in the Department by several faculty with expertise in the planning field.

Physical Geography - Students choosing this path develop an intellectual foundation in the physical landscapes of Earth and interactions with people. Climate, weather, landforms, and the geographic patterns of life on Earth are points of focus in this concentration. The Paleoecology Lab provides opportunity for students to gain hands-on experience in physical geography field and laboratory techniques.

TIPS FOR REGISTRATION & SUCCESS

Here are several things to consider while determining which courses to take:

- Take GEOG 102, Ideas and Skills in Geography, the first Fall semester you are here. This course is designed for sophomores and juniors who have had one or more lower division geography courses. It introduces you to the broader discipline and it connects you to your cohort of fellow geography majors. Unless you are a Freshman, **it is important to take this course in your first Fall semester.**
- Take GEOG 3, Introduction to Maps and Geographical Technologies, the first Spring semester you (no matter your rank) are here.
- Take GEOG 109, Geographic Information Systems, as soon as possible (it is offered every semester). If you have little or no experience with GIS, we recommend that you take GEOG 3 first or concurrently with 109.
- Since all students must complete 9 units of upper division GE coursework, consider taking one of the approved GE courses in Geography to cover Area B and Area D. These approved GE courses will count both for your major and for GE.
- Read the description of the four concentrations (see previous page) available within the major. Pick one, and using the tentative schedule of classes for the next couple of years, plan a semester-by-semester route to the completion of your major. You may change your mind along the route, but it's helpful to have a plan from the beginning.
- You are assigned one of the full-time faculty members as your major advisor. Go see them once a semester to make sure you are on track. Every Fall semester is mandatory. The department coordinator can help you switch advisers, should you wish to do so.
- When it is your turn to register for classes and it appears that a geography class you want is full, contact the department coordinator (334 Sequoia Hall; (916) 278-6109, geography@csus.edu) to see if further information is available.
- Internships are highly recommended as part of your Sacramento State geography education. Sources of internship information are largely focused sent to you using your Sac State e-mail address. Your fellow students also are valuable resources in this regard.
- Interact with the faculty. Visit them in their offices not just to ask about what's going to be on the exam, but to talk ideas! Their offices are on the 3rd floor of Sequoia Hall (except for Prof. Roberts whose office is Amador Hall 311, near our labs on the 3rd floor).
- Check your Sacramento State e-mail early and often. Important communications from the administration (including the registrar), the department chair, internships, and your professors arrive via this medium.

GEOGRAPHY COURSE DESCRIPTIONS (FROM CATALOG)

Lower division offerings in physical geography, cultural geography, and geographical techniques introduce students to the discipline. At the upper division level, students can choose among regional classes, topical classes ranging from meteorology to transportation, and technique classes that include GIS, map making, spatial analysis, remote sensing, and field work.

Lower Division Courses:

GEOG 1. 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. **Graded:** Graded Student. **Units:** 3.0

GEOG 2. Cultural Geography. 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. **Graded:** Graded Student. **Units:** 3.0

GEOG 2H. Cultural Geography - Honors. 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 nature, variation and distribution of cultural features of the earth's surface. **Note:** This is a special offering designed as part of the G.E. Honors program. **Prerequisite:** Open to Honors students only. **Graded:** Graded Student. **Units:** 3.0

GEOG 3. Introduction to Maps and Geographic Technologies. Introduction to maps, map concepts, and geographic technologies. Maps are the most effective way to communicate spatial data, and introduces students to the quickly changing world of maps (both hard-copy and digital) and geographic technologies including map and aerial photograph interpretation, spreadsheet operations, introductory statistics, global positioning systems (GPS), Internet mapping, satellite and aerial images, and geographic information systems (GIS) that aid in data collection, analysis, and presentation. Lecture two hours; laboratory two hours. **Graded:** Graded Student. **Units:** 3.0

GEOG 5. Violent Weather/Changing Atmosphere. Introduction to meteorological and climatological principles and concepts. These principles will be used to examine severe atmospheric phenomena, including hurricanes, tornadoes, thunderstorms, lightning, destructive winds, severe storms, heat waves, droughts and floods, particularly in relation to human-caused climate change and the effects of these phenomena on humanity. **Graded:** Graded Student. **Units:** 3.0

GEOG 11. 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 1; may be taken concurrently. **Graded:** Graded Student. **Units:** 1.0

Upper Division Courses:

GEOG 100. Themes In World Geography. 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. **Graded:** Graded Student. **Units:** 3.0

GEOG 102. Ideas and Skills in Geography. Study and discussion of geographic ideas, including the history of the discipline. Introduction to library resources appropriate to geographic inquiry. Practice in geographic descriptive and analytical writing and research. Extensive use of maps. Required of Geography majors in the junior year. Lecture three hours. **Prerequisite:** GEOG 1 or GEOG 2 or GEOG 3 or GEOG 11. **Graded:** Graded Student. **Units:** 3.0

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. **Prerequisite:** GEOG 109 or instructor permission. **Graded:** Graded Student. **Units:** 3.0

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. **Graded:** Graded Student. **Units:** 3.0

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. **Graded:** Graded Student. **Units:** 3.0

GEOG 110. Advanced Geographic Information Systems. 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. **Graded:** Graded Student. **Units:** 3.0

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 1 or instructor permission. **Graded:** Graded Student. **Units:** 3.0

GEOG 113. Climate. 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:** GEOG 1, GEOG 5, GEOL 8, GEOL 10 or ENV 10 or instructor permission. **Graded:** Graded Student. **Units:** 3.0

GEOG 115. Biogeography. Introduction to the geographic distribution of life. Communities and biomes, changing continents and climates, dispersal, colonization, extinction, life on islands, and past and present human impacts are examined. **Note:** Field trip required. **Prerequisite:** GEOG 1 or instructor permission **Graded:** Graded Student. **Units:** 3.0

GEOG 116. Global Climate Change. Study of past climate change and the techniques with which they are reconstructed. Focus on the various temporal scales at which climate change operates. Spatial variability of past, present and future climate changes. Anthropogenic climate change in the context of natural climate variability. **Prerequisite:** GEOG 1 or instructor permission. **Graded:** Graded Student. **Units:** 3.0

GEOG 117. Landforms. 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 landforms into being. Study of landforms in the context of Quaternary environmental change. Identification and analysis of landforms using maps and other spatial data. Lecture three hours. **Prerequisite:** GEOG 1 or instructor permission. **Graded:** Graded Student. **Units:** 3.0

GEOG 118. Earth Transformed. Explores the evolving human role in transforming Earth's physical environments. Topics range from prehistoric extinction's to modern environmental problems in select regions. Emphasis is placed on wide-ranging effects of resource use and disposal, with particular reference to atmosphere and biological problems and sustainable solutions. **Graded:** Graded Student. **Units:** 3.0

GEOG 119. Visualizing Global Environments. Using current geospatial technologies, such as remote sensing and GIS, the course provides an introduction to the distributions of climate, plant cover, soils, and landforms over the face of the earth. While examining processes and conditions that cause these distributions, students will also explore the methods and techniques that let us visualize these distributions, and use maps as communicative devices in our explorations of these topics. **Graded:** Graded Student. **Units:** 3.0

GEOG 121. United States and Canada. Present distribution and historical development of population, land use and industry in the U.S. and Canada in relation to regional variations in the physical environment and cultural heritage. **Graded:** Graded Student. **Units:** 3.0

GEOG 125. Geography Of East Asia. 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. **Graded:** Graded Student. **Units:** 3.0

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. **Graded:** Graded Student. **Units:** 3.0

GEOG 128. Geography Of Europe. 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. **Graded:** Graded Student. **Units:** 3.0

GEOG 129. Special Topics in Regional Geography. New course that focuses on regions not currently offered (places like Oceania and Latin America). The course fulfills your regional breadth requirement.

GEOG 131. California. Study of landforms, climate, vegetation, population distribution and change, industry, transportation, water, energy, and agriculture in California. **Graded:** Graded Student. **Units:** 3.0

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. **Graded:** Graded Student. **Units:** 3.0

GEOG 143. Environmental Hazards and Society. Focuses on how a place's social systems and physical systems intersect to create hazards. Considers the development of various theoretical approaches to hazards; risk perception and societal responses to hazard events; the history of U.S. disaster response; and approaches to risk/vulnerability assessment. **Graded:** Graded Student. **Units:** 3.0

GEOG 145. Population Geography. Spatial patterns of population numbers and characteristics; migration and spread of ideas; potential for economic and cultural developments. **Graded:** Graded Student. **Units:** 3.0

GEOG 147. Urban Geography. 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. **Graded:** Graded Student. **Units:** 3.0

GEOG 148. Urban and Regional Planning. Introduction to the theory and practice of urban and regional planning. Topics include the history of planning, the development of comprehensive and land use plans, growth management, and transportation and environmental planning. Includes guest speakers from the planning community as well as the opportunity to work on a project with a community organization or government agency to put into practice what is discussed in class. **Graded:** Graded Student. **Units:** 3.0

GEOG 149. Transportation Geography. Explores the geography of transportation using both theory and applications, quantitative and qualitative methods. Topics include the history and economic importance of transportation systems for all major modes; their political, social, and environmental aspects; and basic analytical methods, including accessibility dynamics, network analysis, and spatial interaction models. Focus will be on the U.S., with frequent reference to local issues, though material will be drawn on from around the world. **Prerequisite:** GEOG 141, GEOG 147, or GEOG 148 or instructor permission. **Graded:** Graded Student. **Units:** 3.0

GEOG 150. Programming for GIS. This course is an introduction to programming and scripting for intermediate GIS users, using an object-oriented programming approach. You will develop and write clearly documented and structured geoprocessing programs using the Python programming language and ArcPy, a site package (library) for ArcGIS geoprocessing tools. **Graded:** Graded Student. **Units:** 3.0

GEOG 151. Programming for GIS II. This is an advanced course in programming and scripting for intermediate to advanced GIS users, using an object-oriented programming approach. You will develop well-documented and structured geoprocessing programs for data management, processing, and automation in the Python programming language, leveraging libraries such as ArcPy and GDAL. **Graded:** Graded Student. **Units:** 3.0

GEOG 161. California's Water Resources. 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. **Graded:** Graded Student. **Units:** 3.0

GEOG 163. Applied GIS. Introduction to developing a GIS project, including planning, database research, proposal writing, analysis and evaluation. Lecture 2 hours; Laboratory 3 hours. **Prerequisite:** GEOG 109. **Graded:** Graded Student. **Units:** 3.0

GEOG 181. Quantitative Methods in Geography. Introduction to techniques useful in the analysis of spatial distributions and other geographic phenomena: basic aspatial descriptive and inferential techniques, correlation, regression, and spatial inferential techniques. **Graded:** Graded Student. **Units:** 3.0

GEOG 182. Qualitative Methods in Geography. Students learn and conduct an array of observational and qualitative research techniques used in human geography, including landscape observation, participant observation, interviews, surveys and questionnaires, group discussions (focus groups, charrettes, etc.), visual methods, archival research, and analyzing some of the writing styles commonly used in qualitative research. One learns the relative strengths and weaknesses of these techniques, their appropriate applications, ways to combine them in mixed-methods research, and how to analyze and represent the data. **Graded:** Graded Student. **Units:** 3.0

GEOG 190. Senior Research Seminar in Geography. Writing-intensive capstone course requiring students to complete independent research projects displaying their mastery of geography's content and methods. Projects undertaken in a given semester share a common thematic and/or regional focus. Students use bibliographic, field, spatial analytic, graphic, and verbal skills. Context for projects is provided by a review of the recent history of the discipline. Lecture/discussion three hours. **Prerequisite:** GEOG 1, GEOG 2, GEOG 3, GEOG 102; senior standing, and GWAR certification before Fall 09; or WPJ score of 80+; or 3-unit placement in ENGL 109M/W; or 4-unit placement in ENGL 109M/W and co-enrollment in ENGL 109X; or WPJ score 70/71 and co-enrollment in ENGL 109X; instructor permission. **Graded:** Graded Student. **Units:** 3.0

GEOG 192. Geography Field Experience. A particular geographical area is explored and studied via beginning-level field observation. Emphasis may be placed on physical features, cultural features, or both. **Prerequisite:** One geography course or instructor permission **Graded:** Credit/No Credit **Units:** Variable

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. **Prerequisite:** Instructor permission **Graded:** Graded Student. **Units:** 3.0

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:** Instructor permission. **Graded:** Graded Student. **Units:** 3.0

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:** Instructor permission. **Graded:** Graded Student. **Units:** 3.0

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. **Units:** 1.0 - 3.0.

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. **Graded:** Graded (CR/NC Available). **Units:** 1.0 - 3.0.

BA GEOGRAPHY, GEOGRAPHIC INFORMATION SYSTEMS & ANALYSIS CONCENTRATION WORKSHEET

1. Minimum of 16 Geography courses.
2. Lower and Upper Division Core Requirements: Complete all of the following. Required (For 1, 2, 3, or 11, note equivalents taken at other institutions)

Geog 1: Physical Geography (GE:B1)	Campus	Taken	Planned
Geog 2: Cultural Geography (GE:D)	Campus	Taken	Planned
Geog 3: Intro to Maps	Campus	Taken	Planned
Geog 11: Physical Geog Lab (GE:B3)	Campus	Taken	Planned
Geog 102: Idea & Skills		Taken	Planned
Geog 118: Earth Transformed		Taken	Planned
Geog 190: Seminar in Geographic Thought (GE:WI)		Taken	Planned

3. Breadth requirements: Take one from each category.

Geographic Techniques

Geog 105	Taken	Planned
Geog 107	Taken	Planned
Geog 109	Taken	Planned
Geog 110	Taken	Planned
Geog 150	Taken	Planned
Geog 151	Taken	Planned
Geog 163	Taken	Planned
Geog 181	Taken	Planned
Geog 193x	Taken	Planned

Regional Geography

Geog 121	Taken	Planned
Geog 125	Taken	Planned
Geog 127	Taken	Planned
Geog 128	Taken	Planned
Geog 129	Taken	Planned
Geog 131	Taken	Planned

Physical Geography

Geog 111 (GE:B5)	Taken	Planned
Geog 113 (GE:B5)	Taken	Planned
Geog 115 (GE:B5)	Taken	Planned
Geog 116 (GE:B5)	Taken	Planned
Geog 117	Taken	Planned
Geog 161	Taken	Planned

Human Geography

Geog 141	Taken	Planned
Geog 143	Taken	Planned
Geog 145 (GE:D)	Taken	Planned
Geog 147	Taken	Planned
Geog 148	Taken	Planned
Geog 149	Taken	Planned
Geog 163	Taken	Planned

4. Geographic Information Systems and Analysis Concentration: Courses used to satisfy Core or Breadth Requirements cannot be counted towards concentration requirements.

Required:

Geog 109	Taken	Planned
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Four of the following:

Geog 105	Taken	Planned	Geog 151	Taken	Planned
Geog 107	Taken	Planned	Geog 181	Taken	Planned
Geog 110	Taken	Planned	Geog 163	Taken	Planned
Geog 150	Taken	Planned	Geog 199	Taken	Planned

BA GEOGRAPHY, PHYSICAL GEOGRAPHY CONCENTRATION WORKSHEET

1. Minimum of 16 Geography courses.
2. Lower and Upper Division Core Requirements: Complete all of the following.
Required (For 1, 2, 3, or 11, note equivalents taken at other institutions)

Geog 1: Physical Geography (GE:B1)	Campus	Taken	Planned
Geog 2: Cultural Geography (GE:D)	Campus	Taken	Planned
Geog 3: Intro to Maps	Campus	Taken	Planned
Geog 11: Physical Geog Lab (GE:B3)	Campus	Taken	Planned
Geog 102: Idea & Skills		Taken	Planned
Geog 118: Earth Transformed		Taken	Planned
Geog 190: Seminar in Geographic Thought (GE:WI)		Taken	Planned

5. Breadth requirements: Take one from each category.

Geographic Techniques

Geog 105	Taken	Planned
Geog 107	Taken	Planned
Geog 109	Taken	Planned
Geog 110	Taken	Planned
Geog 150	Taken	Planned
Geog 151	Taken	Planned
Geog 163	Taken	Planned
Geog 181	Taken	Planned
Geog 182	Taken	Planned
Geog 193x	Taken	Planned

Regional Geography

Geog 121	Taken	Planned
Geog 125	Taken	Planned
Geog 127	Taken	Planned
Geog 128	Taken	Planned
Geog 129	Taken	Planned
Geog 131	Taken	Planned

Physical Geography

Geog 111 (GE:B5)	Taken	Planned
Geog 113 (GE:B5)	Taken	Planned
Geog 115 (GE:B5)	Taken	Planned
Geog 116 (GE:B5)	Taken	Planned
Geog 117	Taken	Planned
Geog 161	Taken	Planned

Human Geography

Geog 141	Taken	Planned
Geog 143	Taken	Planned
Geog 145 (GE:D)	Taken	Planned
Geog 147	Taken	Planned
Geog 148	Taken	Planned
Geog 149	Taken	Planned
Geog 163	Taken	Planned

3. Physical Geography Concentration: Courses used to satisfy Core or Breadth Requirements cannot be counted towards concentration requirements.

Four of the following:

Geog 111	Taken	Planned
Geog 115	Taken	Planned
Geog 116	Taken	Planned
Geog 117	Taken	Planned
Geog 161	Taken	Planned
Geog 193C	Taken	Planned

One of the following:

Geog 105	Taken	Planned
Geog 107	Taken	Planned
Geog 109	Taken	Planned
Geog 110	Taken	Planned
Geog 163	Taken	Planned
Geog 181	Taken	Planned

BA GEOGRAPHY, METROPOLITAN AREA PLANNING (MAP) CONCENTRATION WORKSHEET

1. Minimum of 16 Geography courses.
2. Lower and Upper Division Core Requirements: Complete all of the following.
Required (For 1, 2, 3, or 11, note equivalents taken at other institutions)

Geog 1: Physical Geography (GE:B1)	Campus	Taken	Planned
Geog 2: Cultural Geography (GE:D)	Campus	Taken	Planned
Geog 3: Intro to Maps	Campus	Taken	Planned
Geog 11: Physical Geog Lab (GE:B3)	Campus	Taken	Planned
Geog 102: Idea & Skills		Taken	Planned
Geog 118: Earth Transformed		Taken	Planned
Geog 190: Seminar in Geographic Thought (GE:WI)		Taken	Planned

6. Breadth requirements: Take one from each category.

Geographic Techniques

Geog 105	Taken	Planned
Geog 107	Taken	Planned
Geog 109	Taken	Planned
Geog 110	Taken	Planned
Geog 150	Taken	Planned
Geog 151	Taken	Planned
Geog 163	Taken	Planned
Geog 181	Taken	Planned
Geog 182	Taken	Planned
Geog 193x	Taken	Planned

Regional Geography

Geog 121	Taken	Planned
Geog 125	Taken	Planned
Geog 127	Taken	Planned
Geog 128	Taken	Planned
Geog 129	Taken	Planned
Geog 131	Taken	Planned

Physical Geography

Geog 111 (GE:B5)	Taken	Planned
Geog 113 (GE:B5)	Taken	Planned
Geog 115 (GE:B5)	Taken	Planned
Geog 116 (GE:B5)	Taken	Planned
Geog 117	Taken	Planned
Geog 161	Taken	Planned

Human Geography

Geog 141	Taken	Planned
Geog 143	Taken	Planned
Geog 145 (GE:D)	Taken	Planned
Geog 147	Taken	Planned
Geog 148	Taken	Planned
Geog 149	Taken	Planned
Geog 163	Taken	Planned

3. Metropolitan Area Planning Concentration: Courses used to satisfy Core or Breadth Requirements cannot be counted towards concentration requirements.

Required:

Geog109	Taken	Planned
Geog148	Taken	Planned

One of the following:

Geog 141	Taken	Planned
Geog 145	Taken	Planned

One of the following:

Geog 147	Taken	Planned
Geog 149	Taken	Planned

One of the following:

Geog 105	Taken	Planned
Geog 107	Taken	Planned
Geog 110	Taken	Planned
Geog 150	Taken	Planned
Geog 151	Taken	Planned
Geog 163	Taken	Planned
Geog 181	Taken	Planned
Geog 182	Taken	Planned
Geog 193A	Taken	Planned
Geog 193B	Taken	Planned

BA GEOGRAPHY, HUMAN GEOGRAPHY CONCENTRATION WORKSHEET

1. Minimum of 16 Geography courses.
2. Lower and Upper Division Core Requirements: Complete all of the following.
Required (For 1, 2, 3, or 11, note equivalents taken at other institutions)

Geog 1: Physical Geography (GE:B1)	Campus	Taken	Planned
Geog 2: Cultural Geography (GE:D)	Campus	Taken	Planned
Geog 3: Intro to Maps	Campus	Taken	Planned
Geog 11: Physical Geog Lab (GE:B3)	Campus	Taken	Planned
Geog 102: Idea & Skills		Taken	Planned
Geog 118: Earth Transformed		Taken	Planned
Geog 190: Seminar in Geographic Thought (GE:WI)		Taken	Planned

7. Breadth requirements: Take one from each category.

Geographic Techniques

Geog 105	Taken	Planned
Geog 107	Taken	Planned
Geog 109	Taken	Planned
Geog 110	Taken	Planned
Geog 150	Taken	Planned
Geog 151	Taken	Planned
Geog 163	Taken	Planned
Geog 181	Taken	Planned
Geog 182	Taken	Planned
Geog 193x	Taken	Planned

Regional Geography

Geog 121	Taken	Planned
Geog 125	Taken	Planned
Geog 127	Taken	Planned
Geog 128	Taken	Planned
Geog 129	Taken	Planned
Geog 131	Taken	Planned

Physical Geography

Geog 111 (GE:B5)	Taken	Planned
Geog 113 (GE:B5)	Taken	Planned
Geog 115 (GE:B5)	Taken	Planned
Geog 116 (GE:B5)	Taken	Planned
Geog 117	Taken	Planned
Geog 161	Taken	Planned

Human Geography

Geog 141	Taken	Planned
Geog 143	Taken	Planned
Geog 145 (GE:D)	Taken	Planned
Geog 147	Taken	Planned
Geog 148	Taken	Planned
Geog 149	Taken	Planned
Geog 163	Taken	Planned

3. Human Concentration: Courses used to satisfy Core or Breadth Requirements cannot be counted towards concentration requirements.

Two of the following:

Geog 141	Taken	Planned
Geog 143	Taken	Planned
Geog 145	Taken	Planned
Geog 147	Taken	Planned
Geog 148	Taken	Planned
Geog 149	Taken	Planned
Geog 161	Taken	Planned
Geog 163	Taken	Planned

Two of the following:

Geog 121	Taken	Planned
Geog 125	Taken	Planned
Geog 127	Taken	Planned
Geog 128	Taken	Planned

Geog 129	Taken	Planned
Geog 131	Taken	Planned

One of the following:

Geog 105	Taken	Planned
Geog 107	Taken	Planned
Geog 109	Taken	Planned
Geog 110	Taken	Planned
Geog 150	Taken	Planned
Geog 151	Taken	Planned
Geog 163	Taken	Planned
Geog 181	Taken	Planned
Geog 182	Taken	Planned
Geog 193a or b	Taken	Planned

GEOGRAPHY MINOR WORKSHEET

Students can obtain a minor in Geography by completing **18 units as approved by the minor advisor**. Courses must be selected in consultation with and approved by a faculty advisor in Geography. A minimum of 6 upper division units must be earned in residence.

1. **Two** of the following lower division courses:
 - GEOG 1 Physical Geography: The Distribution of Natural Phenomena
 - GEOG 2 Cultural Geography
 - GEOG 3 Introduction to Maps and Geographic Technologies
2. A minimum of 9 units upper division Geography, excluding GEOG 194, GEOG 195, GEOG 198, & GEOG 199
3. Three additional units in Geography, either lower division or upper division.

GEOGRAPHIC INFORMATION SYSTEM MINOR WORKSHEET

Students can obtain a minor in Geographic Information Systems by completing **18 units as approved by the minor advisor**. Courses must be selected in consultation and approved by a faculty advisor in Geography. A minimum of 6 upper division units must be earned in residence.

Courses in parentheses are prerequisites.

1. **Required Courses (9 units)**
 - GEOG 3 Introduction to Maps and Geographic Technologies
 - GEOG 109 Geographic Information Systems
 - GEOG 110 Advanced Geographic Information Systems (GEOG 109 or instructor permission)
2. Select **three** of the following:
 - GEOG 105 Computer Cartography (GEOG 109 or instructor permission),
 - GEOG 107 Remote Sensing,
 - GEOG 163 Applied GIS (GEOG 109),
 - GEOG 181 Spatial Analysis, or

Three units of upper division GIS coursework from another department with permission of the GIS Minor advisor.

SELECTING COURSES – USING SMART PLANNER

Sacramento State has a new tool for you to use to plan your degree and keep on track to graduate. The tool is Smart Planner, and it can be accessed through a link on your Student Center page. With Smart Planner, you can plan not just for the semester ahead but all the way through graduation. The data that you enter will be used by the administration to project course demand. The more you plan, the more data the university will have, which we hope translates into giving you the courses you need when you need them.

Here are some tips:

- Smart Planner provides a **suggested** roadmap for your major taking into account the courses you have already completed.
- As you (re)arrange your plan, double check your GE requirements and make sure you have everything planned and covered. Note: Smart Planner often places your GE requirements in alphabetical order meaning that it places Area A first and Area B second. That is somewhat silly. You can move GE requirements from one semester to another.
- It provides flexibility for you and your advisor to move courses around and arrange your plan. For example, it can be modified to allow advisor and department approved substitutions.
- To help guide your course choices, notes are provided to alert you to various prerequisites and requirements.

Fall 2017						Planned Units	16.00	Target Units	16.00
Requirement	Notes	Critical	Units	Course	Info	Select Course	Lock	Advisor Message	Remove
MLSK 10A (Remedial Math)			4	MLSK 10A		Select	<input type="checkbox"/>		
ENGL 20 (University Requirement)			3	ENGL 20		Select	<input type="checkbox"/>		
ANTH 4 (GE Area A3)			3	ANTH 4		Select	<input type="checkbox"/>		
ANTH 146			3	ANTH 146		Select	<input type="checkbox"/>		
ANTH Upper Division Core			3	ANTH 114		Select	<input type="checkbox"/>		

[Add Course](#)

Spring 2018						Planned Units	12.00	Target Units	12.00
Requirement	Notes	Critical	Units	Course	Info	Select Course	Lock	Advisor Message	Remove
STAT 1 (GE Area B4)			3	STAT 1		Select	<input type="checkbox"/>		
ANTH 162			3	ANTH 162		Select	<input type="checkbox"/>		
ANTH Theoretical Perspectives			3	Not Selected		Select	<input type="checkbox"/>		
ANTH Breadth Requirements			3	Not Selected		Select	<input type="checkbox"/>		

[Add Course](#)

Fall 2018						Planned Units	16.00	Target Units	16.00
Requirement	Notes	Critical	Units	Course	Info	Select Course	Lock	Advisor Message	Remove
ANTH 155, or ANTH 157			3	Not Selected		Select	<input type="checkbox"/>		
ANTH General Electives			3	Not Selected		Select	<input type="checkbox"/>		
ANTH General Electives			3	Not Selected		Select	<input type="checkbox"/>		
ANTH General Electives			3	Not Selected		Select	<input type="checkbox"/>		
ANTH Methods			3	Not Selected		Select	<input type="checkbox"/>		
Additional Elective - 1 unit			1	Not Selected		Select	<input type="checkbox"/>		

[Add Course](#)

INTERNSHIPS

Our location as the state's capital provides students with a wide range of government resources (federal, state, and local) on which to draw, as well as the opportunity for internships with diverse public agencies. These internships can provide excellent "real world" training opportunities and possible subsequent permanent employment. In addition, some geography courses include opportunities for community engagement.

Internships can also provide a valuable way to obtain on-the-job experience (place it on your resume), contact with employers, and it can give you a sense of what you want to do after graduation. A good internship allows you to be part of the agency or organization's day-to-day activities.

Talk with your major advisor to explore internship possibilities. Check your Sacramento State e-mail for internship and job opportunities. When times are economically good, we send out quite a few of these announcements. In addition, you can go to the career center in Lassen Hall 1013 for information on career advising (our main liaison is Chao Vang at cv98@csus.edu or 278-6235). They can help you with finding internships, volunteer experiences, and part-time jobs. They also help with developing resumes and cover letters. Also, you can go directly to government agencies, organizations, and local companies that interest you and inquire about internships. In this situation, you should provide the name of a faculty member as a reference, an updated resume, and, in many cases, you should volunteer your services.

Again, internships are important because you are more employable after this experience.

SCHOLARSHIPS

THE JACK MROWKA MEMORIAL SCHOLARSHIP

The Geography Department is proud to award the Mrowka Scholarship to one or more students each semester to acknowledge their outstanding scholarship and academic achievement. The award, which is \$1,000, is given in memory of Jack Mrowka. See details at <http://www.csus.edu/geog/Jack-Mrowka.html>.



GEOGRAPHY DEPARTMENT STUDY ABROAD SCHOLARSHIP

To encourage more students to participate in Education Abroad, the Geography Department offers a study abroad scholarship. If you are planning to study abroad, contact the department chair.

Geography's Facilities

“The principle training of the geographer should come, wherever possible, by doing fieldwork.”

Carl Sauer

The Department has multiple labs that support teaching, research, and training. Two computer labs support our geotechnology emphasis in GIS, GPS, computer cartography, and remote sensing, and they allow students to pursue independent research projects. Available software in these labs include ESRI's ArcGIS (including 3-D, Network Analyst and Spatial Analyst extensions) and ERDAS remote sensing programs. The Department also hosts the campus's Paleoecology Lab, but perhaps the most important facility is found outside—in the field.

THE FIELD

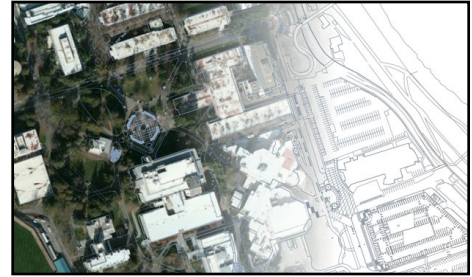
Our location in Sacramento provides our field courses access to a wide range of landscapes and environments relating to urban, rural, and physical geography. Our Geography program emphasizes many educational goals and objectives including one that gives students field experience in as wide a variety of natural and cultural environments as possible. We hope to instill in students the skill of observation and an appreciation for the importance of working with other cultures in a variety of places to ensure the understanding of environmental and cultural relationships and processes.

Fieldwork is often fundamental to the way geographers perceive, research, and understand the world. As former AAG President Patricia Gober (1998, “Distance Learning and Geography's Soul.” *Association of American Geographers Newsletter*. May 1998. 33:5. page 2) states, “Most geographers have a deep connection with places, one that has drawn us to the field, one that we communicate to students, and one that binds us together as an intellectual community.” For this reason, the field is considered our most important laboratory.



LABORATORIES – GIS Lab

The Geography Department's GIS labs support teaching and research with geotechnologies including geographic information systems, remote sensing, and global positioning systems. These labs are hands-on, exploration-based, multimedia-learning environment where students gain personal experience with ideas, concepts, and problem solving. Computer techniques make some complex processes (like analytical modeling, non-linear and spatial correlation, layering, diffusion, and cartographic representation) easier to understand, and give students direct experience in applying concepts to problem-solving exercises. This approach to learning is consistent with broader educational shifts. The labs support and encourage the use of computer technology in all aspects of geographic research including data collection, storage, management, analysis, and display. The labs are located on the 3rd floor of Amador Hall (312 and 313).



LABORATORIES – Paleoecology Lab

The Department also hosts the campus's Paleoecology Laboratory, which is located on the 3rd floor of Sequoia Hall (326A). Established in 2004, the mission of the laboratory is to conduct environmental research to further our understanding of past and present physical landscapes and to promote student education and research. The lab emphasizes sediment core research and tree-ring research.

The Paleoecology Lab allows motivated students hands-on experience in field sampling techniques and laboratory processing and analysis of various environmental data.



STUDY ABROAD

Studying abroad enriches both your geography degree but also your life in many ways:

- You enhance your education by adding a new, international perspective to your studies.
- You develop first-hand knowledge of other peoples, places, and environments.
- You may earn more career options. Your international experience provides a strong professional advantage that many businesses are looking for.
- You may improve your foreign language abilities.
- You broaden your perspective on U.S. society and yourself.
- You experience personal growth, especially in the areas of independence and self-confidence.

If you think you cannot afford it than think again. Many program costs are comparable to the costs of studying here and financial aid applies.

If you think you might be interested, take the following steps:

Step One: Ask yourself the following questions:

- Why am I interested in studying abroad?
- Where do I want to study?
- How long do I want to study abroad – academic year, semester, summer?
- Do I want to study a particular subject while abroad?
- Do I want to fulfill requirements for your major or minor?
- Do I know any languages other than English, or am I interested in learning another language?
- Is cost a significant factor in my program selection?

Step Two: Research the various programs that are available.

Step Three: Talk with your geography advisor about the program that most interests you.

Step Four: Attend a General Information Study Abroad Session. Information sessions provide an introduction to study abroad and an overview of options for Sacramento State students.

Step Five: Make an appointment to talk to a Study Abroad Coordinator. You will work together to define and clarify your goals and program needs, and to select a program on the basis of your qualifications and interests. Once you have selected the appropriate program, you can begin the application process.

Step Six: Talk again with your advisor, but this time you will focus on course selection. We try to match the courses that you need for your degree and those that are offered abroad. This selection process will also involve the department chair.

Step Seven: Get one or two recommendations from a professor. You must, however, have taken a class with the professor recommending you.

Step Eight: Prepare for your interview(s) with faculty members. It is advised to be knowledgeable of current events for the country you are interested in, as well as its political system, popular culture, and history.

Life after Sac State

“During the next decade geography will move to center stage in our society as mobile, real-time, interactive geographic technologies and systems are adopted...in most large-scale private and governmental organizations...”

Doug Richardson

OCCUPATIONS

The Association of American Geographer’s (AAG) brochure titled Careers in Geography lists three primary job market sectors for geographers: education, government, and the private sector.

Education...needs K-12 teachers with solid geography backgrounds, since all states have recently introduced higher standards for geography instruction. At the college level, exciting new courses attract large numbers of students, and the demand for faculty with regional specialties or theoretical and research capabilities is strong.

All levels of government...hire geographers. They may work for local and state economic development or planning offices, conduct research in recreation and park use, or map land use from satellite images. Many geographers at the federal level work for the National Imagery and Mapping Agency, the Environmental Protection Agency, the Central Intelligence Agency, the U.S. Geological Survey, and the Department of State.

Private sector firms...need geographers who can develop and apply geographic ideas and technologies to complex real world systems. Geographers also conduct marketing studies, plan transportation routes, understand international markets, and determine environmental risks associated with site locations. From transportation agencies to electric utility companies, and from forestry to telecommunications, real-time mobile interactive geographic technologies and databases are emerging as the backbone of large-scale operations management systems for industries with distributed assets and mobile workforces.

For more information, talk with your major advisor and visit the AAG's webpage at www.aag.org and their career page at http://jobs.aag.org/home/index.cfm?site_id=15004.

Students who have graduated from Sacramento State with a BA in Geography have found employment in a variety of careers. The following is a partial list of companies and government agencies that have hired some of our recent graduates.

Alza Corporation
American Conservation Experience
American River College
Apple
ARCAIS
BAE Systems
BNSF Railway

Brown and Caldwell
California Air Resources Board
California Department of Conservation
California Department of Fair Employment & Housing
California Department of Fish & Game
California Department of Food & Agriculture

California Department of Forestry & Fire Protection	Integrated Computer Solutions
California Department of Pesticide Regulation	Keller Williams Realty
California Department of Resource Recycling & Recovery (CalRecycle)	KIRA
California Department of Technology	Land IQ
California Department of Transportation (CalTrans)	Los Rios Community College District
California Department of Water Resources	Michael Baker International
California Division of Boating & Waterways	Micron Technology
California Energy Commission	MST Architects
California Governor's Office of Emergency Services	Natural Lands Trust
California State Parks	North Coast Regional Water Quality Control Board
California State University - Sacramento	OHSU
Cardno	Pacific Crest Trail
CH2M Hill	Pacific Gas & Electric Company (PG&E)
City of Elk Grove	Placer County Water Agency
City of Folsom	Pristine Sun LLC
City of Manteca	Quantum Spatial
City of Rancho Cordova	Sacramento Area Council of Governments (SACOG)
City of Rocklin	Sacramento Regional Fire
City of Roseville	San Diego State University
City of Sacramento	San Joaquin Council of Governments
City of San Jose	SCI Consulting Group
City of Vacaville	Shell
City of West Sacramento	Sierra College
County of Del Norte	Sierra Nevada Brewing Company
County of Nevada	SMUD
County of Sacramento	Solano County Water Agency
County of San Mateo	Southgate Recreation & Park District
County of Sonoma	Stanislaus Council of Governments
County of Yolo	State of California Franchise Tax Board
County of Yuba	Stockton Unified School District
Drake Haglan & Associates	Strategic Economics
Elk Grove Water District	Sutter Health
EN2 Resources Inc.	Tahoe Conservancy
Energy Absorption Systems Inc.	Teichert Materials
Environmental Protection Agency	Trimble
Environmental Systems Research Institute (ESRI)	University of California - Davis
Facebook	UPS
Federal Emergency Management Agency	URS Corporation
Federal Reserve Bank of San Francisco	US Army Corps of Engineers
Frontline Energy Services	US Bureau of Land Management
Global Earthquake Model	US Bureau of Reclamation
Granite Construction	US Department of Agriculture
ICF International	US Environmental Protection Agency
Institute of Ecohydrology Research	US Forest Service
Institution of Transportation Engineers	US Geological Survey (USGS)
	Versight Inc.
	Walk Sacramento

GRADUATE SCHOOL

Graduate school provides geography students with more options. It can help you attain a high-level position or enable you to teach at the college level. In addition, graduate school increases your knowledge of the world, exposes you to new ideas and theories, provides you with the opportunity to work with the best and latest geographic technology, and offers you the chance to work closely with professors on research topics.

As you think about careers that you might want to enter, you should think about whether graduate school is a part of your long-range plan. Talk it over with others and your professors. If you decide to pursue graduate school, here are several steps and considerations to selecting an appropriate graduate school.

1. What type of geography interests you? Being interested broadly in geography is great, but this will not help you in graduate school. Pick a subfield that greatly interests you, and we are not referring to the broad categories physical, human, or geotechnologies. Select something more specific like ethnic, political, social, urban, climatology, biogeography, etc. It will even help your chances if you could make it more specific than that.
2. Talk with your professors and your major advisor by the end of your junior year, even if you do not plan to attend graduate school for a couple of years.
3. Read the literature, especially the recent literature, of your chosen subfield. What articles or books most impressed you? If the authors are professors, where do they teach or conduct research? You should consider those universities.
4. Look at the AAG's Guide to Geography Departments (we have a Department copy) and pay particular attention to what other departments specialize in and the specializations of individual professors. Add those institutions to your list.
5. Look at the home pages of the universities on your list. What do they have to offer that interests you? Check out faculty web pages. Go back to Step 3 and read the literature of other professors that interest you.
6. Talk with the professors that interest you the most. Perhaps start with an e-mail, but do not simply praise their work. Give them specific details about their research that you liked. Ask them questions that derive from their work. If they answer you, reply with a thank you e-mail and state that you would like to come out and look at the department as a possible location for graduate school.
7. Most graduate schools require that you take the GRE or another entrance examination. Your scores must reach a certain level. Think about taking it twice to get the best scores possible.
8. High grade point averages and examination scores increase your likelihood of admission to a graduate program, but contacts and letters of recommendation are also important.
9. You should select a few potential graduate schools based on a careful analysis of your academic interests and abilities and the university's reputation, expertise, and cost. Apply to at least two or three universities. Choices narrow down quickly as one gets an offer with a teaching assistantship while others offer no funding.