

GEOGRAPHY

College Natural and Behavioral Sciences
Department of Earth Science and Geography

Program Description

The Geography program is one of two programs housed in the Department of Earth Science and Geography. Geography studies the spatial distribution of features across Earth's landscape, such as the location of landforms, water bodies, and the organization of climate zones. It also considers the human landscape, including how populations are distributed, why they migrate, and the ways they alter natural and urban environments. As a tool to advance these spatial analyses, the Geography program teaches the use of both traditional and computer-based geographic technical skills (geotechniques) such as cartography, remote sensing, and geographic information systems (GIS).

Geography at CSUDH emphasizes "hands-on" learning, and many courses feature field trips. The expertise and international focus of the faculty provide opportunities for engaged students to participate in diverse research projects ranging from treeline studies in alpine environments, GIS mapping of California river systems, or studying the effects of water scarcity or environmental pollution through the lenses of sustainability and environmental justice.

Features

The Earth Science and Geography Department has a map library containing several thousand map sheets. The department also has two dedicated computer laboratories, the Earth Sciences Spatial Analysis Laboratory (ESSAL) which acts as a center for remote sensing and GIS-based research projects, and a teaching laboratory which provides computer-based teaching with an emphasis on geotechniques. These labs provide sophisticated image processing and spatial analysis software as well as libraries of satellite imagery and spatial databases. Additional equipment includes Global Positioning System (GPS) receivers and advanced instruments for field data collection.

The faculty have expertise in plate tectonics, historical geology and field geology; hydrology, atmospheric science, air quality, climate change, and landscape change; geographic information systems, remote sensing, and sensor networks, plus urban planning, environmental planning, and environmental science. The broad expertise of the faculty provides a prime opportunity for motivated undergraduate students to work closely with their professors and gain "hands-on" experience within domestic and international research projects.

Academic Advisement

Majors should consult with their advisor prior to registration each semester. Records of students' progress toward the degree are accessible online through MyCSUDH. Students should check their progress regularly.

Preparation

For high school students, the best preparation for the Geography major is a well-rounded program of high school courses in humanities, science, mathematics, and written and oral communication. Community college transfer students should have completed introductory physical geography and a human/cultural geography course. Introductory courses in the physical, biological and social sciences are recommended.

Graduation With Honors

An undergraduate student may be a candidate for graduation with Honors in Geography provided they meet the following criteria:

1. A minimum of 36 units in residence at CSU Dominguez Hills;
2. A minimum grade point average of at least 3.5 in all courses used to satisfy the upper-division requirements in the major.

Career Possibilities

Many societal problems have geographic dimensions and training in Geography provides essential skills for solving them. Geographic skills such as GIS, the analysis of remotely-sensed imagery, and other geotechniques are in high demand from governments, non-governmental organizations, and private industry alike at the local, regional, national, and international levels. Career opportunities include environmental consulting, planning and zoning; urban and regional planning; natural resource management and conservation; energy; air and water quality management; secondary school (middle and high school) teaching, and a wide array of social service firms and agencies. The geographic toolkit has many applications.

Geography is an appropriate major for a teaching career at a secondary school (middle or high school), as part of an approved "Subject Matter Preparation Program" in Social Science. Completion of such a program is the first step toward meeting California state requirements for a teaching credential. Interested students should consult with an appropriate advisor for current information as program requirements for the "Subject Matter Preparation Program" in Social Science change regularly.

Undergraduate Programs

Bachelor

- Geography, Bachelor of Arts (<https://catalog.csudh.edu/academics/geography/geography-ba/>)

Minor

- Geography, Minor (<https://catalog.csudh.edu/academics/geography/geography-minor/>)

Certificate

- Geotechniques, Certificate (<https://catalog.csudh.edu/academics/geography/geotechniques-certificate/>)

Faculty

John Keyantash, Department Chair
Parveen Chhetri, Ashish Sinha

Tech

Instructional Support Tech Office: LIB 1114

Instructional Support Tech Phone: (310) 243-3368

Location

Department Office: NSM B-202

Department Phone: (310) 243-3377

Emeriti Faculty

Rodrick Hay, Brendan McNulty, Ralph Saunders, David Sigurdson, Jamie Webb

Courses

GEO 100. Human Geography. (3 Units)

Cultural, physical, and biological earth systems. Emphasizes human geography and adaptation to physical habitats.

Offered Fall, Spring, All terms

GEO 200. Physical Geography. (3 Units)

The physical science behind the formation and distribution of Earth's landforms, surface waters, climates and biomes. Includes geographic measurements, mapping, and satellite reconnaissance.

Offered Fall, Spring

GEO 305. Cartography. (3 Units)

Principles, techniques, design and production of maps and graphs for data presentation. One hour of lecture and six hours of lab per week.

Offered Spring even

GEO 310. Geomorphology. (3 Units)

Prerequisite: EAR 100 or GEO 200 is required. Study of landforms created by geologic, volcanic, weathering, fluvial, karst, coastal and other processes acting on the land surface and ocean floor.

Offered Fall odd

GEO 315. The Weather. (3 Units)

Structure of the atmosphere, planetary circulations, and storms of all latitudes. Types of clouds, radiation, humidity, precipitation, and optical phenomena. El Niño-Southern Oscillation and global teleconnections.

Two hours of lecture and three hours of laboratory per week.

Offered Fall odd

GEO 318. Cultural Pluralism The Human Environment: Methods of Knowledge and Truth. (3 Units)

Prerequisites: Completion of Lower Division General Education. Analysis of cultural diversity and the process of cultural interaction, inter-ethnic relations and social integration on the community, national and international levels with emphasis on people's knowledge of the natural world.

Offered Fall, Spring

GEO 336. Land Use. (3 Units)

Sequential, compatible, and conflicting land uses. Zoning and regulation. Impacts of public and private uses. Social and economic benefits from alternative land use.

Offered Infrequent

GEO 350. World Geography. (3 Units)

Study of the world's regions: population distribution, landforms and natural resources, urban and non-urban relationships, connections of trade and transportation, plus selected case studies involving water resources, boundaries and environmental impacts.

Offered Fall, Spring

GEO 357. Urban Environmental Geography. (3 Units)

A survey of key environmental issues affecting Los Angeles and other cities with special emphasis on environmental policy and local ordinances designed to mitigate urban environmental issues including air pollution, water resources, park and waste management.

Offered Fall even

GEO 359. Geography Of California. (3 Units)

The physical, cultural and regional geography of California. The land and its modifications. Spatial distribution of resources. Population, migration and urbanization. Problems and prospects.

Offered Infrequent

GEO 360. North America. (3 Units)

Physical, regional and cultural geography of the United States, Canada and Mexico. Emphasizes human-environment interaction, contemporary patterns of population distribution, resource exploitation, transportation, and agricultural and industrial production.

Offered Infrequent

GEO 370. Numerical Methods in Geography. (3 Units)

Prerequisites: CSC 101 and MAT 009 (or equivalents). Principles of data reduction and analysis in the natural sciences. Practical techniques to understand spatial data sets using computer software. Topics include matrices, summary statistics, distributions, transformations, hypothesis testing, contouring, regression and curve-fitting.

Offered Spring odd

GEO 380. Biogeography. (3 Units)

The distribution of plant and animal species with emphasis on native plant and animal populations in Southern California and recent changes to the region's flora and fauna.

Offered Fall odd

GEO 405. Advanced Cartography. (3 Units)

Prerequisite: GEO 305 or equivalent is recommended. Planning and preparing maps, graphics, photographs, and models. One hour of lecture and six hours of lab per week.

Offered Spring even

GEO 408. Remote Sensing and Image Processing. (3 Units)

Interpretation of physical and cultural features, resources, environmental factors from photographic and specific sensor imagery. One hour of lecture and six hours of activity per week.

Offered Spring odd

GEO 412. Rivers and Streams. (3 Units)

Geographic inventory of global, state and national water resources. Drainage networks, streamflow measurements and flooding. Waterfalls, rapids, river conservation and dam case studies. Features field trip.

Offered Spring even

GEO 415. Geographic Information Systems. (3 Units)

Prerequisites: Basic computer knowledge, CSC 101 or equivalent. Techniques of data acquisition, processing, analysis and display as pertain to geographic information systems. Includes practical applications based on various forms of geographically referenced data. One hour of lecture and six hours of laboratory per week.

Offered Fall

GEO 416. Earth's Climates. (3 Units)

Prerequisite: GEO 200 is required. Characteristics and classifications for Earth's climates, with emphasis on the physical geographic reasons for their distribution patterns, as well as the biomes associated with each climate zone. The influence of climate zones on agriculture, diet, dress, and lifestyle. Physical and biological proxies for climate data, and historical and current trends in global climate.

Offered Spring odd

GEO 420. Natural Resources. (3 Units)

Atmospheric, hydrologic, ecologic and geologic principles; economic and environmental considerations in air, water, soil, food, timber, wildlife, nonmetallic and metallic resources.

Offered Fall even

GEO 433. Environmental Analysis and Planning. (3 Units)

Federal and State requirements, required inputs, presentation formats, procedures for review and acceptance of environmental reports. Methods of assessing air quality, noise, water pollution and traffic problems. Offered Spring even, All terms

GEO 494. Independent Study. (1-3 Units)

Prerequisite: Consent of instructor. Independent study of a particular geographic or environmental problem under the supervision of a Geography faculty member
Offered Fall, Spring

GEO 495. Special Topics In Geography. (3 Units)

Selected topics in Geography with course content to be determined by instructor. Repeatable course.
Offered As needed

GEO 498. Directed Research. (1-3 Units)

Prerequisite: Consent of instructor. Research of a particular geographic or environmental problem under the direction of a Geography faculty member. CR/NC grading.
Offered Fall, Spring