

Geography

Degree

Associate in Arts: Degree Geography

Program Description

Geography is the science of space and place. Geographers study spatial distributions and relations within Earth's human-environment systems, incorporating historic and contemporary human activities within the context of the biophysical and cultural environments, and the emergence of humanity as one of the major agents of change on Earth. The geography program exposes students to many of the tools and technologies employed by earth science professionals, including Geographic Information Systems (GIS) and Global Positioning Systems (GPS).

The Geography Major

The Associate in Arts Degree in Geography provides for a liberal education and prepares one for positions in business, government, environmental consulting, resource management, teaching, and service in foreign areas.

Many geography courses satisfy GE requirements and appeal to the major and non-major alike. Coursework in geography, which includes Geographic Information Systems (GIS), prepares students for a wide range of jobs that employ computers to gather, manipulate, analyze and report spatial data. There is rapid growth in the use of GIS in natural resource management, urban planning, marketing, real estate, criminology, emergency services, public health, scientific research and many other areas. GIS courses are also useful for transfer students in geography and other environmental and natural science-oriented disciplines. GIS is an important tool for many other disciplines which use maps and spatially referenced data.

Program Student Learning Outcomes

1. Describe and assess Earth's physical processes and their impacts on human culture and activities.
2. Describe and assess human cultural and economic activities and their impacts on Earth's physical environment.
3. Identify and implement the methods and technologies used in geographic spatial analysis (ex. GIS, remote sensing, spatial statistics, cartography and map analysis).

Career Opportunities

Geographers are trained for a wide variety of exciting careers, including cartography, climatology,

demography, ecology, education earth and environmental science, land use planning, meteorology, realty, and regional and urban planning. Jobs include positions as field analysts, foreign area and intelligence analysts, Geographic Information System analysts, map librarians, marketing analysts, park rangers, research analysts, resource economists, surveyors, teachers, transportation analysts, and travel agents.

Trained geographers are involved in a diverse set of research areas including agriculture, atmospheric and oceanic studies, landforms and soils, vegetation, water resources, marketing, political and economic structures, and transportation and urban systems.

Faculty and Offices

Michael Robinson, *Chair* (EBS-113, ext. 3741)

Geordie Armstrong (EBS-124)

Michael Vergeer (EBS-124)

Elizabeth Gans, *Information/Assistance*
(EBS-114, ext. 2315)

AA Degree: Geography

Department Requirements (26 units)

GEOG 101+/ EARTH 141+ — Physical Geography	3
GEOG 101L/ERTH 141L — Physical Geography Lab	1
GEOG 102 — Human Geography	3
GEOG 104 — World Regional Geography	3
GEOG 152/ERTH 152 — Weather and Climate	3
GEOG 171/ EARTH 171 — Introduction to GIS and Maps.....	2
GEOG 172/ EARTH 172 — GIS: Software Applications.....	2

Controlled Electives (9 Units): ANTH 103, 121 122, 123, 124, 125, 126, BIOL 122+ **or** 144 **or** BOT 121, BIOL 124, EARTH 111+ **or** 111H+, 112+ **or** 115+ **or** ENVS 115+, EARTH 113 **or** 114, 116+ **or** ENVS 116+, EARTH 131 **or** 132 **or** 133, 151+, GEOG 105 **or** EARTH 142, GEOG 106, 175 **or** EARTH 175, ENVS 110+, GLST 101, 102, MATH 117 **or** 117H.

+Satisfies Area A of the SBCC General Education Requirements if both lecture and lab are completed.

Note: A course may not be used to satisfy more than one requirement (double-counting is not allowed).

Recommendation: Associate Degree students should take a broad background of electives in both the Earth Sciences and Social Sciences.

**Requirements for AA-T Degree—
Geography for Transfer**

The Geography Program at Santa Barbara City College provides a liberal education and prepares one for positions in business, government, environmental consulting, resource management, service in foreign areas and teaching. Many geography courses satisfy GE requirements and appeal to the major and non-major alike. Coursework in geography, which includes Geographic Information Systems (GIS), prepares students for a wide range of jobs that employ computers to gather, manipulate, analyze and report spatial data. There is rapid growth in the use of GIS in natural resource management, urban planning, marketing, real estate, criminology, emergency services, public health, scientific research and many other areas.

The Associate in Arts degree in Geography for Transfer will provide the foundational knowledge in Geography to students who want to earn a Baccalaureate Degree in Geography at any of the CSU campuses.

Degree Requirements

Complete 60 CSU-transferable units including general education, major requirements and CSU-transferable electives as follows:

I. General Education

Complete one of the following patterns:

- Intersegmental General Education Transfer Curriculum “IGETC” for CSU (38 semester units)
- California State University General Education Breadth pattern (40 semester units)

II. Major

Complete 19-24.5 units as outlined below with a “C” or better in each course. Pass/No Pass grading is not permitted in a course within a student’s major area of study. The courses completed for the major may also be used to fulfill General Education areas on the IGETC or the CSU GE Breadth.

Required Core (7 units)

ERTH 141* — Physical Geography or	3
GEOG 101* — Physical Geography.....	3
ERTH 141L* — Physical Geography Laboratory or ...	3
GEOG 101L — Physical Geography Laboratory.....	1
GEOG 102* — Human Geography	3

List A. Select two courses from the following (6-7 units)

GEOG 104* — World Regional Geography	3
ERTH 171* — Introduction to GIS and Maps and	2
ERTH 172* — GIS: Software Applications or	2
GEOG 171* — Introduction to GIS and Maps and ..	2
GEOG 172* — GIS Software Applications*	2
ERTH 152* — Weather and Climate or	3
GEOG 152* — Weather and Climate	3

List B. Select two courses from the following (6-10.5 units)

Any List A course not selected above or

ANTH 101* — Physical Anthropology or	3
ANTH 101H — Physical Anthropology, Honors.....	4
ANTH 102* — Introduction to Archaeology or	3
ANTH 102H — Introduction to Archaeology, Honors..	4
ANTH 103* — Introduction to Cultural Anthropology.....	3
BIOL 100* — Concepts of Biology or	3
BIOL 140* — Principles of Biology and	3
BIOL 141* — Biology Laboratory.....	2
BIOL 101* — Plant Biology	5
BIOL 102* — Animal Biology.....	5
BIOL 103* — Cell Biology	5.5
BOT 121 — Plant Diversity.....	4
CHEM 101* — Introductory Chemistry.....	4
CHEM 155* — General Chemistry I	5
CHEM 156* — General Chemistry II	5
COMM 235 — Argumentation and Debate	3
CS 105 — Theory and Practice.....	3
CS 106 — Theory and Practice II.....	3
CS 140 — Object-Oriented Programming, Using C++	3
ECON 101* — Microeconomics	3
ECON 102* — Macroeconomics.....	3
EH 102 — Soils and Plant Nutrients	3
ENG 111* — Critical Think. & Comp through Lit or ...	3
ENG 111H* — Crit. Thk. & Comp Thru Lit, Honors..	3
ENVS 110* — Humans and the Biological Environment	3

ENVS 115* — Environmental Geology or	3
ERTH 115* — Environmental Geology.....	3
ERTH 111* — Dynamic Earth-Physical Geology or ..	3
ERTH 111H* — Dynamic Earth-Physical Geology, Honors	4
ERTH 114* — The Geology of California	3
ERTH 126* — Petrology and Rock-Forming Minerals..	5
ERTH 142* — Economic Geography or	3
GEOG 105 — Economic Geography.....	3
ERTH 151 — Introductory Physical Oceanography ...	3
ERTH 175 — Raster GIS Applications or	2
GEOG 175 — Raster GIS Applications	2
MATH 130*— Calculus for Biol. Sci, Social Science and BUS I	5
MATH 131* — Calculus for Biol. Sci, Social Science and BUS II	5
MATH 137* — Precalculus I, College Algebra and Functions	5
MATH 138* — Precalculus II, College Algebra and Trigonometry.....	4
MATH 150* — Calculus with Analytic Geometry	5
PHIL 111* — Critical Thinking and Writing in Philosophy	3
PHYS 102* — Introductory Physics for Science Majors	4
PHYS 105* — General Physics or	4
PHYS 110* — Introductory Physics.....	4
PHYS 106* — General Physics.....	4
POLS 101*— American Government and Politics.....	3
POLS 121* — International Politics.....	3
PSY 150* — Statistics for Behavioral Science or	4
MATH 117* — Elementary Statistics or	4
MATH 117H* — Elementary Statistics, Honors	4
ZOOL 122*— Animal Diversity	3

**These courses fulfill an IGETC and/or CSU GE Breadth pattern requirement. Visit www.assist.org or <http://articulation.sbcc.edu> for a complete list of IGETC and CSU GE Breadth requirements.*

Spanish 101*, 102*, 103*, 104*, 146*, 147*, 132*, 133*, 134*, 150*, 160*

Theatre Arts 103*, 107*, 108*

**These courses fulfill an IGETC and/ or a CSU GE Breadth pattern requirement. Visit www.assist.org or <http://articulation.sbcc.edu> for a completed list of IGETC and CSU GE Breadth requirements.*

College Requirements

For complete information, see “Graduation Requirements” in the *Catalog* Index.

Planning a Program of Study

In order to plan the best possible program of study to meet individual needs, students are encouraged to contact the Geography Department chairperson, faculty adviser, or counselor assigned to the Sciences Division. These persons are eager to assist students—and they welcome the opportunity to be helpful.

Preparation for Transfer

Course requirements for transfer vary depending upon the college or university a student wishes to attend. Therefore, it is *most important* for a student to consult with his/her counselor and departmental adviser before planning an academic program for transfer. Information sheets for majors, outlining transfer requirements, are available in the Counseling/Transfer Centers.

Honors and Awards

The Geography faculty selects one student each year to be honored as “Outstanding Geography Student.” Students are nominated by members of the faculty and selections are made on the basis of academic scholarship and a student’s contribution to our community’s understanding of geographic events.

Special Programs and Courses

Geography Club

Students who are interested in exploring geography with their peers are invited to join the Geography Club. See Dr. Robinson or Ms. Armstrong for further information.

Advising

Our faculty is eager to provide counseling to students seeking to explore career opportunities which relate to Geography as a major or who simply need further information about any of our course offerings.

Student Participation

We invite student input at any time about needed changes in curriculum or additions to our program. Our course offerings are constantly under review and we welcome student perspective.

Geography Courses

GEOG 101/ EARTH 141 — Physical Geography (3) — CSU, UC

Skills Advisories: MATH 1 and ENG 103

Course Advisories: Concurrent enrollment in

ERTH 141L/GEOG 101L

Hours: 54 lecture

Spatial study of Earth's dynamic physical systems and processes. Interrelationships between the basic elements of the physical and human environments are examined, including geology (plate tectonics; volcanoes and earthquakes), geomorphology (formation and modification of landforms; river, coastal, and glacial processes), meteorology (Earth's atmosphere; weather and climate), and hydrology (water on Earth).

GEOG 101L/ERTH 141L — Physical Geography Laboratory (1) — CSU, UC

Corequisites: GEOG 101/ERTH 141

Skills Advisories: MATH 1 and ENG 103

Hours: 54 lab

Laboratory approach to a combination of earth science disciplines, including cartography, geology, geomorphology, meteorology and oceanography. Remote sensing techniques are utilized in 75% of laboratory activities.

GEOG 102 — Human Geography (3) — CSU, UC

Skills Advisories: Eligibility for ENG 110 or 110H

Hours: 54 lecture

Interpretation of the cultural elements of the geographic landscape and the study of human's changing relationship with the environment. Investigates culture and human processes as seen in global patterns of population and migration patterns, language, religion, political and economic systems, urbanization, and human impact on the physical world.

GEOG 104 — World Regional Geography (3) — CSU, UC

Skills Advisories: Eligibility for ENG 103

Hours: 54 lecture

Global survey of cultural regions, people and environments. Geographic methodologies are employed to evaluate people, resources, landscapes, livelihoods and economies across eight major geographic regions. The gap between developed and undeveloped economies, the global roles and interconnections of countries and regions, and the conflicting pressures between cultural diversity and globalization are analyzed.

GEOG 105/ERTH 142 — Economic Geography (3) — CSU, UC

Skills Advisories: MATH 1 and ENG 103

Hours: 54 lecture

Designed for students majoring in Geography. Addresses regional patterns of principal economic activities of the world, with an emphasis on economic development and the problems of urbanization, transportation and the environment.

GEOG 106 — Geography of California (3) — CSU, UC

Skills Advisories: Eligibility for ENG 110 or 110H

Hours: 54 lecture

Non-technical survey of the wide variety of natural and human environments found in California. It includes a regional study of physical landscapes, economic activities, characteristics of population, cities and rural areas, and current environmental problems. California's interaction with other parts of the U.S. and world is also covered.

GEOG 152/ERTH 152 — Weather and Climate (3) — CSU, UC

Skills Advisories: MATH 1 and ENG 103

Course Advisories: Concurrent enrollment in EARTH 152L/GEOG 152L

Hours: 54 lecture

Fundamentals of meteorology, including the nature of the atmosphere, solar radiation and energy balances, circulation of the atmosphere, air masses and fronts, atmospheric moisture, clouds and fog, precipitation, cyclones, weather analysis and forecasting, climate and climate change.

GEOG 152L/ERTH 152L — Weather and Climate Laboratory

(1) — CSU, UC

Corequisites: GEOG 152/ERTH 152

Skills Advisories: Eligibility for ENG 103 and proficiency in MATH 100

Hours: 54 lab

Laboratory approach to topics covered in the Weather and Climate lecture (ERTH 152/GEOG 152). Exercises introduce fundamentals of meteorology, including the nature of the atmosphere, circulation of the atmosphere, air temperature and humidity, and weather analysis and forecasting. Students collect and analyze a variety of environmental data.

GEOG 171/ERTH 171 — Introduction to Geographic Information Systems and Maps

(2) — CSU, UC

Corequisites: GEOG 172/ERTH 172

Skills Advisories: MATH 4 and ENG 103

Hours: 36 lecture

Techniques, tools and theories used to examine geographic information. Includes the structure, uses, and basic operations of a Geographic Information System (GIS). Cartography and cartographic design are incorporated, as well as overviews of aerial photography, remote sensing, and global positioning systems. Includes uses of GIS software in business, urban planning, resource management and scientific research.

GEOG 172/ERTH 172 — Geographic Information Systems: Software Applications

(2) — CSU, UC

Corequisites: EARTH 171/GEOG 171 (taken concurrently)

Skills Advisories: ENG 103

Hours: 54 (27 lecture, 27 lab)

Extensive practice with a GIS package, accompanied by exploration of the range of applications in which GIS is used (e.g., resource management, public works, business, planning, scientific research). Covers the key skills for operating GIS software packages, including geographical data acquisition, creation, management, analysis and output.

GEOG 175/ERTH 175 — Raster GIS Applications (2) — CSU

Prerequisites: EARTH 172 or GEOG 172 with a minimum grade of "C"

Skills Advisories: Eligibility for ENG 103; MATH 4

Hours: 36 lecture

Hands-on introduction to basic Raster concepts, using ArcGIS Spatial Analyst extension within the Arc Map environment. The underlying methodology required to solve real world problems is explored through a series of extensive course projects. Key skills in data acquisition, surface creation techniques, map algebra, database design and results reporting are covered.

GEOG 299 — Independent Study in Geography (1-3) — CSU

Limitation on Enrollment: Six units of Geography with a 3.0 or above GPA; minimum 12 units of course work completed at SBCC with GPA of at least 2.5.

Hours: 48-144 lab

For complete information, see "Independent Study" in the *Catalog Index*. (*UC transfer limit: 299 computed as *Independent Study*; see counselor)