

Geography

School of Mathematics, Science, and Engineering

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General Description

Geography is a science that seeks to analyze the physical environment as well as study human influences to and interactions with the environment. Thus, this discipline examines the various physical forces that help shape the landscape and the role that humans play in the alteration of the landscape. Geography is a spatial and temporal science. A geographer will study the spatial and temporal distribution of vegetation across the globe, the physical forces leading to earthquakes and volcanoes, the historical and future arrangements of human societies across the planet, and the reasons behind differing climates from one part of the world to the next—presently, historically, and predicatively. The field is strongly interdisciplinary with roots in the physical and cultural sciences.

Career Options

Below is a sample of the career options available for the geography major. A few of these require an associate in science degree, most require a bachelor's degree, and some require a graduate-level degree: geographer, high school or college instructor, cartographer, weather observer, demographer, land use planner, geographic analyst, aerial photo interpreter, remote sensing specialist, land economist, climatologist, environmental scientist, geographic information system specialist, site researcher, urban planner, and soil conservationist.

Degree/Certificate Options

Associate in Arts Degree: Transfer Preparation

	Major Code
Geography	01770

Certificates of Proficiency:

Geographic Information Science—Continuing Students and Working Professionals	01771
Geospatial Technology Technician	A1772

Consult with a counselor to develop a Student Education Plan (SEP), which lists the courses necessary to achieve your academic goal.

ASSOCIATE IN ARTS DEGREE



Geography

Transfer Preparation * (Major Code: 01770)

Designed to introduce students to the department through the study of physical elements and cultural aspects of geography. Physical geography examines forces shaping the landscape including weather, soil, water bodies, and the Earth's interior. Cultural geography studies and compares location and distribution of human values such as cultures, religion, political ideologies, economics, languages, technology, population, and recreation combined to produce a cultural landscape. Regional geography concentrates on specific regions of the world, for example, California.

GEOG 100	Introduction to Geography—Physical Elements	3
GEOG 101	Physical Geography Laboratory	1
GEOG 120	Introduction to Geography: Cultural Elements	3
	Foreign Language	12–15
Total units		19–22

In addition, it is recommended that each student take courses listed under one of the following areas of specialization.

Methods of Geographical Analysis: MATH 119, 130.

Natural Resources Environmental Analysis: BIOL 100, 101; MATH 121 or 250; CHEM 100; PS 102.

Natural Resources Environmental Policy: BIOL 100, 101; ECON 101 or 102; PS 102.

Physical Geography: CHEM 200; MATH 121 or 250.

Urban and Regional Analysis: ECON 102.

To earn an associate degree, additional general education and graduation requirements must be completed. See page 51.

* Students planning to transfer to a four-year college or university should complete courses specific to the transfer institution of choice. University requirements vary from institution to institution and are subject to change. Therefore, it is important to verify transfer major preparation and general education requirements through consultation with a counselor in either the Counseling Center or Transfer Center. **See catalog TRANSFER COURSES INFORMATION section on page 33 for further information.**

CERTIFICATES

Geographic Information Science— Continuing Students and Working Professionals

Certificate of Proficiency

Career/Technical (Major Code: 01771)

The following certificate track is designed for 1) continuing students seeking training in Geographic Information Science (GIS) for their specific discipline, and 2) working professionals seeking GIS training for their present job. The program introduces both GIS concepts and applications. Special emphasis is on hands-on experience with the hardware, software, and techniques employed in science, industry, and academia.

GIS integrates innovative tools and techniques that enables users to view and analyze temporal and spatial information in an exciting, dynamic, and productive fashion. Ultimately, a GIS helps you solve problems by looking at data in a way that is readily understood and easily shared. The ability of GIS to manage, correlate, predict, model, and share spatial information, visually and dynamically, makes GIS an essential component for any spatial discipline, including (but not limited to) geography, geology, environmental science, biology, political science, anthropology, humanities, criminal justice, health, history, education, economics, real estate, and military science.

GEOG 145	Introduction to Mapping and Geographic Information Science (GIS)	
OR		
GEOG 150	Geographic Information Science and Spatial Reasoning	3
GEOG 151	Intermediate GIS—Techniques and Analysis	3
GEOG 152	Advanced GIS—Project Design and Applications	3
Total units		9

Geospatial Technology Technician

Certificate of Achievement

Career/Technical (Major Code: A1772)

The following certificate track is designed for students seeking an entry-level position as a Geospatial Technology Technician. The program introduces both geospatial concepts and applications (including Geographic Information Systems (GIS), remote sensing, and image analysis). Special emphasis is on hands-on experience with the hardware, software, and techniques employed in science, industry, and academia. All of the core courses in this certificate track are short-track (8-weeks in length) and 100% online; the internship course (GEOG 153) will take place on campus or at a private or public entity.

Geospatial Technology integrates innovative tools and techniques that enables users to view and analyze temporal and spatial information in an exciting, dynamic, and productive fashion. Ultimately, geospatial technology (including GIS, remote sensing, and image analysis) helps one solve problems by looking at data in a way that is readily understood and easily shared. Today, a significant need exists within the workforce for personnel trained as Geospatial Technology Technicians. For further information visit <http://www.swccd.edu/~gis> or contact Professor Ken Yanow (kyanow@swccd.edu).

GEOG 145	Introduction to Mapping and Geographic Information Science (GIS)	
OR		
GEOG 150	Geographic Information Science and Spatial Reasoning	3
GEOG 151	Intermediate GIS—Techniques and Analysis	3
GEOG 152	Advanced GIS—Project Design and Applications	3
GEOG 154	Introduction to Remote Sensing	
OR		
PHS 154	Introduction to Remote Sensing	3
GEOG 155	Introduction to Image Analysis	
OR		
PHS 155	Introduction to Image Analysis	3
GEOG 153	GIS Internship	2–4
Total units		15–17



Some courses within this program may require additional coursework that must be completed prior to enrollment in those courses. Please consult the individual course listings for prerequisites and any other limitations on enrollment.