

GEOGRAPHY

The Department of Geography offers degrees in Global Studies, Geospatial Information Science as well as Geography. If you are seeking a flexible major, want to help solve social and environmental challenges, enjoy traveling, like maps, or are curious about different ways of life, our degree options might be a great fit for you.

Our students share interests in global perspectives and environmental issues, enjoy exploring new places, and want to learn more about making and using maps to inform public policy, for example. Majoring in Geography, Global Studies, or Geospatial Information Science can open doors to a wide variety of career options. Undergraduates also have the opportunity to conduct in research with a faculty mentor, gain work experience through an internship, or participate in a study abroad.

Geography brings together the study of people, the environment, and the interactions between them in order to understand and improve our world.

- Human geographers tend to focus on local, national, and global flows of ideas and practices. They may emphasize the study of migration, voting patterns, travel behavior within cities, or how the use of social media varies from one region to another, for example.
- Physical geographers seek to understand environmental processes that affect air and water quality, biodiversity, or contribute to natural disasters.
- Human-environment geographers work at the intersection of social and natural dynamics to study the climate impacts of human activities, to understand vulnerability to drought or other natural hazards, or to design and plan sustainable cities, for example.
- Through the use of Global Positioning System (GPS) data, drone- and satellite-based imagery, and geographic information systems (GIS), geographers map, monitor, and analyze environmental change in order to understand how our world is changing, where, and who is affected.
- Geography spans the sciences, social sciences, and humanities. Much of the work that geographers do is inherently interdisciplinary in scope.

Many careers are available to the geography major. Recent graduates have been employed in the public and private sector in jobs involving urban and regional planning, GIS mapping and analysis for oil and gas projects, community development, locational analysis for business and industry, resource planning and management, the Foreign Service, cartography, and teaching. Geography provides an excellent foundation for a career in business, industry, or government.

The department specializes in three areas:

- nature-society dynamics, including resource management,
- cultural and historical geography, and
- geographic information science, including unmanned aerial systems.

The department also manages Cartography Services, the Center for Applications of Remote Sensing, three GIS labs, a palynology/paleoecology laboratory, field mapping equipment such as Global Positioning System receivers, and an interactive weather analysis system with satellite data feed.

The Department of Geography offers flexible degree options and certificates, including the following:

- BA/BS in Geography (with Business Essentials, Pre-Law, and Pre-Ministry options)
- BA in Global Studies (with Business Essentials, Pre-Law, and Pre-Ministry options)
- BS in Geospatial Information Science
- Certificate in GIS (undergraduate and graduate)
- Certificate in Environmental Studies (undergraduate)

Undergraduates also have the opportunity to participate in an accelerated master's program ("4+1" degree) in which they can earn the BA in Global Studies in four years and the MS in Global Studies in their fifth year. An advanced program leading to the MS and PhD degrees is also available. The department also sponsors students in the interdisciplinary MS and PhD programs in environmental science.

Global Studies

Global Studies combines the study of world regions with cultural, environmental, economic, political and other facets of globalization and global change. Global studies offers practical and vital knowledge about the world, how it works and why it is changing. Faculty in Geography who teach in the Global Studies program have extensive experience with research, teaching, and study abroad in the Americas, Europe, Africa, Australia, Central Asia, and the Middle East.

A Global Studies degree prepares students for both international and domestic careers with the federal government and a wide variety of NGOs, charitable organizations, and other agencies involved in different aspects of regional and global development. The ongoing growth and global expansion of Christian missions, many of which originate and are coordinated by Oklahoma-based churches and charities, will benefit from students with a degree in Global Studies. It is also an ideal second major for many other degree programs both within and beyond A&S (e.g. Foreign Languages, Political Science, International Business, International Agriculture). Students with a Global Studies degree can serve the needs of Oklahoma, the nation and the world by joining a workforce of globally minded people who can easily function in a world that is increasingly interconnected.

Geospatial Information Science

Driven by technological innovations and an explosion in the availability of spatial information, geospatial technologies including geographic information systems (GIS), the Global Positioning System (GPS) and remote sensing have introduced revolutionary ways to utilize spatial information. The BS degree in geospatial information science (GISci) provides students with a theoretical and applied foundation in the rapidly growing field of GISci. The program is especially relevant to students interested in cultural and natural resource management, agriculture, planning and the environment.

The importance of GISci is underscored by a growing number of jobs emphasizing or entirely focused on the storage, analysis and visualization of geospatial data. A student who earns the BS in Geospatial Information Science at OSU will be well-versed in general GISci knowledge and will have competency utilizing GISci hardware and software for the planning, development and maintenance of spatial and nonspatial databases. Most important, students who complete the BS will have higher order skills involving the analysis of geospatial data and will be capable of communicating findings with larger audiences. Requirements for the proposed BS have been designed to parallel skills needed by GISci professionals. Upon earning the BS, a student will be proficient in spatial data capture, data representation,

spatial data analysis, GISci theory, and GISci project development and implementation. Students can expect to find occupations in a variety of fields in private industry, government, education and agriculture.

Since the early 1990s the OSU Geography Department has distinguished itself in GISci instruction and research. In 1996 the Department launched the state's first Certificate in Geographic Information Systems and in subsequent years has expanded GISci course offerings to address growing student interest and demand. The Department is well-known nationally and internationally for research involving the integration of GISci within farm-level decision-making, for scholarship involving human patterns and processes tied to cultural and historical landscapes and for research involving communications and transportation systems. Faculty in the Department have been highly successful in obtaining extramural support for GISci research and extension activities from organizations ranging from the National Science Foundation to the National Park Service, U.S. Department of State, Oklahoma Historical Society, and Oklahoma Department of Transportation. Faculty in the Department have also worked to improve STEM education in Oklahoma schools through projects such as a \$1.2 million grant from the National Science Foundation that introduced GISci activities in 6th through 12th grade science classrooms. The Department's international outreach efforts tied to geospatial technologies include a training partnership involving faculty and students in Vietnam and a multi-year project aimed at building Iraq's GISci infrastructure.

- hardware and software used in GIS and spatial data collection,
- design and management of spatial and non-spatial databases,
- spatial analysis and/or GIS programming, and
- representation of data in both mapped and tabular form.

The certificate program is offered at both the undergraduate (GIS, CRT) and graduate (GIS, GCRT) levels. Admission into the undergraduate certificate program is open to any undergraduate or special (non-degree seeking) students at OSU, while admission into the graduate certificate program is open to any graduate students. To receive a certificate in GIS, a student must complete a set of coursework in GIS and related topics and hold a bachelor's or more advanced degree from OSU or an accredited college. Students may work toward a certificate while completing their bachelor's or graduate degrees.

For more information about the Department of Geography, its programs or certificates, please visit <https://geog.okstate.edu/> or contact us at 405-744-6250.

Certificate in Environmental Studies (EVST)

Environmental Studies is an interdisciplinary field that emphasizes human-environment interactions and spans the humanities, social sciences, and sciences. The certificate is open to all undergraduate majors and is designed to fit within most four-year degree plans without the need for additional credit hours. The certificate is awarded upon completion of the bachelor's degree and requires the completion of 17 credit hours. Lower-division requirements include ENVR 1113 and either GEOG/GEO 1022 (N) or GEOG/GLST 2002 (N). Upper-division requirements include a single core course, GEOG 4233 Human Dimensions of Global Environmental Change, plus three others (nine credit hours) from a wide variety of courses.

Completion of the certificate indicates that a student has developed a knowledge base about environmental processes combined with the study of human cultural interactions with the natural world from the perspectives of history, political science, art, psychology, philosophy, literature, economics, and other disciplines. The certificate is ideal for students whose interests span the humanities, social sciences, and natural sciences. The undergraduate Certificate in Environmental Studies recognizes students who complete their degrees with a notable share of courses emphasizing the study of the natural environment and how societies interact with nature.

Certificate in Geographic Information Systems (GIS)

The Certificate in GIS provides students with broad exposure to principles and applications of GIS. Requirements for the certificate are designed to parallel skills needed by GIS professionals. Student earning the certificate are proficient in general GIS theory and have knowledge and practical exposure to the following: