

Geospatial Information Science

Curriculum

The Department of Geography offers a Bachelor of Science in Geospatial Information Science (GISci) designed for students with interest in developing analytical skills with geospatial tools and techniques. The GISci degree is particularly suited for those who enjoy computing and mathematics. The program objectives are: (i) to provide a formal program and specialized course of study to persons interested in a career involving geospatial technologies such as geographic information systems (GIS), the global positioning system (GPS), and/or remote sensing, and, (ii) to recognize students who undertake a rigorous plan of study involving theory and applications of GISci.

GIS majors

develop the following skills:

Project-based:

- Plan long term projects
- Develop project designs
- Maintain records
- Evaluate project results

Technical:

- GIS data ethics and standards
- GPS data collection techniques
- GISci foundational knowledge
- GIS hardware and software
- GIS Programming
- Develop and maintain spatial and non-spatial databases

Research and Analysis:

- Collect, examine, and organize data
- Model geospatial phenomena
- Utilize statistical applications
- Read/construct maps and graphs
- Conduct field studies
- Undertake environmental and location analyses

Communication:

- Share findings with larger audiences
- Scientific writing and publication

Job and Internship Websites

- AAAS- Careers in Geoscience and Remote Sensing
<http://www.sciencemag.org/careers/2005/08/careers-geo-science-and-remote-sensing>
- American Urban and Regional Informational Systems Association
<http://giscorps.org/>
- Association of American Geographers
http://www.aag.org/cs/salary_data_and_trends/public_administration/15-1099.06
- ESRI
<http://www.esri.com/careers>
- Geography Jobs
<http://www.geographyjobs.com/>
- Geo Search Inc.
<http://jobs.geosearch.com/JobSeeker/JobList.aspx?stats=y>
- Geological Society
<http://www.usgs.gov/ohr/>
- GIS Careers
<http://www.giscareers.com/>
- GIS Jobs
<http://www.gisjobs.com/>
<http://www.mygisjobs.com/Category/gis-internships>
- GIS Jobs Clearinghouse
<http://www.gjc.org/>
- Indeed.com
<http://www.indeed.com/jobs?q=GIS&l=>
- USA Jobs
<https://www.usajobs.gov/JobSearch/Search/GetResults?keyword=gisUS>

Get Involved

Geography Club

<https://campuslink.okstate.edu>

College of Arts & Sciences Career Services

213 Life Science East
Tel: 405 744 5658

For appointments and resources:
<http://cascareers.okstate.edu>

Geospacial Information Science Career Paths...

Imagery/Remote Sensing Analyst: Specialize in analysis of aerial and/or satellite-collected imagery of the earth including unmanned aerial system (or drone)-based imagery. Imagery Analysts utilize imagery to generate new geospatial datasets, identify land cover types and environmental change, assess vegetative extent or performance of agricultural crops (e.g., precision agriculture) using remote sensing analytical software and methods.

Mapping Specialist: Collect and work with geographic data to create maps, undertake geospatial analyses, and produce desired output products. They typically work with Field Technicians, Civil Engineers, and other Mapping and GIS Professionals.

Urban and Regional Planner: Work on zoning, land use, and new development projects for municipalities and/or consulting firms. They work with individual property owners, developers, and government officials. Planners use GIS to query geospatial datasets to aid in decision-making and generate maps for presentation to the general public to invoke greater discussion.

GIS Project Manager: Direct the entirety of the GIS efforts at a firm or governmental agency. This includes supervising a team of GIS Professionals to effectively and thoroughly complete the project(s) goals as outlined.

Geospatial Consultant: Perform a variety of duties across a range of topical areas. They are often self-employed or work for consulting firms. Using geospatial skills and knowledge, Geospatial Consultants provide guidance to individuals, companies, and/or governments concerning environmental, social, or economic topics (e.g., population growth patterns, traffic patterns and congestion, pollution, recreation, water and waste materials, available resources)

Field Technician: Collect, measure, and interpret geographic information in order to create and update geospatial databases for education, emergency response, and other purposes. Field Technicians frequently utilize GPS equipment for data collection and integrate collected GPS location data into GIS databases.

GIS Web Administrator: Manage the web-based GIS components for a company, firm, or governmental entity. Duties include working with geospatial data, preparing data for web-based integration, uploading data, web programming, working with web-GIS users, providing web training, etc.

Environmental Scientist: Many environmental assessment, cleanup, and management companies and consulting firms employ Environmental Scientists with excellent written and oral communication abilities, analytical skills (geospatial and statistical), project management experience, and more. Environmental Scientists conduct applied research and develop publications such as environmental impact/assessment reports.

GIS Programmer: Create custom GIS applications for a company or firm by writing computer code. Work with other GIS Professionals to evaluate needs and create action plans to address those needs.

Job Titles

Geospatial Analyst
Field Technician
Remote Sensing Application Specialist
Geospatial Consultant
Mapping Specialist
GIS Programmer
IT/GIS Technician
Environmental Scientist/
Technician
GIS Web Administrator
GIS Project Manager
Imagery Analyst
(incl. unmanned systems)
Urban and Regional Planner
Geospatial Engineer
Location Expert/Analyst
Geoscience Technician
Geographer

Types of Employers

Governmental/Planning:

- County Assessor's Offices
- Chickasaw Nation
- Assoc. of Central Oklahoma Governments
- U.S. Military

Intelligence:

- National Geospatial Intelligence Agency
- Central Intelligence Agency
- Federal Bureau of Investigation

Natural Resource Management:

- Okla. Tourism and Recreation Dept.
- U.S. Forest Service
- Natural Resource Conservation Service
- U.S. Fish and Wildlife Service
- U.S. Geological Service
- Okla. Dept. of Environmental Quality

Energy Resources:

- Oklahoma Gas and Electric
- Chesapeake Energy

Transportation:

- Oklahoma Department of Transportation
- Federal Aviation Administration

Health and Safety:

- National Weather Service
- Center for Disease Control
- Federal Emergency Management Agency

Miscellaneous:

- Retail: Walmart, Target, Best Buy
- BAE Systems
- Google