

GEOGRAPHIC INFORMATION SCIENCE, MINOR

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

What is Geographic Information Science?

Geographic Information Science (GIScience) is one of four key sub-disciplines within Geography (along with human geography, physical geography, and environment-society geography). Its primary areas of study include cartography (map making), remote sensing, and geographic information systems. Students who study GIScience learn how to use the latest tools and techniques to visually represent and analyze spatial data in order to understand and address real-world environmental and social problems. Applications of geographic information science range from emergency response to natural resource management to social policy analysis to location intelligence for business.

You Might Like This Program If...

- You like computers and maps, and want to acquire skills to differentiate yourself in the workforce after graduation.
- You would like to obtain a well-balanced portfolio of skills for geospatial problem solving.
- You would like to gain competence in geospatial techniques that enhance the knowledge, skills, and abilities developed through your major program of study.

Program Requirements

Requirement	Credits
Requirements for the Minor	18

Requirements for the Minor

A grade of C or better is required for all courses in the minor, as specified by Senate Policy 59-10 (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/59-00-minors-and-certificates/#59-10>). In addition, at least six credits of the minor must be unique from the prescribed courses required by a student's major(s).

Code	Title	Credits
Prescribed Courses		
<i>Prescribed Courses: Require a grade of C or better</i>		
GEOG 160	Mapping Our Changing World	3
Additional Courses		
<i>Additional Courses: Require a grade of C or better</i>		
Select 6 credits of the following:		6
GEOG 361	Cartography—Maps and Map Construction	
GEOG 362	Image Analysis	
GEOG 363	Geographic Information Systems	
Select 9 credits (at least 6 credits at the 400-level) of the following:		9
GEOG 323		
GEOG 417	Satellite Climatology	
GEOG 461W	Dynamic Cartographic Representation	
GEOG 463	Geospatial Information Management	

GEOG 467	Applied Cartographic Design
GEOG 468	Geographic Information Systems Design and Evaluation
GEOG 485	GIS Programming and Software Development

Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/>)

University Park

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Career Paths

There are many potential careers for graduates with GIScience backgrounds. Students earning the Geographic Information Science minor learn a wide range of technological, research, and analytical skills that are highly valued by employers. Competence in GIS, mapping, remote sensing, spatial analysis, and geovisualization techniques gives graduates geospatial skills that can help solve real-world problems in fields ranging from business to environmental services to emergency preparedness to policy analysis.

Careers

Students earning the minor in Geographic Information Science are well positioned to find employment with diverse organizations spanning business, government, and nonprofit sectors. Such organizations may include (but are not limited to): American Red Cross; Amnesty International; BAE Systems; Boeing; Esri; Federal Emergency Management Agency; NASA; National Geographic; National Park Service; United Nations; U.S. Army Corps of Engineers; U.S. Census Bureau; U.S. Environmental Protection Agency; local, regional, and state planning agencies; environmental and engineering consulting firms; State Department; and humanitarian organizations.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES WITH A MINOR IN GEOGRAPHIC INFORMATION SCIENCE (<https://www.geog.psu.edu>)

Opportunities for Graduate Studies

A minor in Geographic Information Science is useful for students who are interested in pursuing graduate degrees in the computational, environmental, and social sciences. Alumni enter graduate and

professional studies in a variety of programs, including (but not limited to) geography, planning, urban studies, environmental sciences, ecology, geographic information sciences, information technology, environmental informatics, geodesign, business administration, supply chain management, emergency management, and law. They sometimes begin graduate or professional programs directly after finishing undergraduate studies, but often get several years' work experience before returning to school, either full or part-time.

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES
(<https://www.geog.psu.edu>)

Contact

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