

GEOGRAPHIC INFORMATION SYSTEMS MINOR

Banner Code: GIS

Academic Advising

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The Geographic Information Systems Minor is designed to prepare students with the basic training necessary to enter the rapidly expanding field of geographic information science. The curriculum in the minor is multidisciplinary in content and interdisciplinary in approach, drawing on a variety of geographic and computational science components. A Geographic Information System (GIS) is an integrative approach to help solving complex spatial problems in most professional fields and at different scales. GIS has irrevocably altered the way we capture, store, analyze, and visualize spatial information. Although it has its roots in cartography and the graphical display of information, its breadth spans from geographic data acquisition, geospatial database construction and management, spatial analysis, and geovisualization. Public and private sector organizations work with an overwhelming amount of spatial data in their day-to-day operations. With so much spatial information, GIS has become essential to the effective operation of both public and private organizations.

Employment opportunities are limitless for students who are proficient in this interdisciplinary field. GIS professionals work in places like government agencies, utility companies, marketing firms, non-profit organizations, and publishing companies. Federal government agencies such as NGA, FEMA, USGS, DOD, EPA, and NASA routinely recruit individuals with strong GIS backgrounds.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP5.3.4 Minors.

Requirements

Minor Requirements

Total credits: 18-20

Students should refer to the Admissions & Policies tab for specific policies related to this program.

All coursework must be completed with a minimum GPA of 2.00.

Required Courses

Code	Title	Credits
GGS 110	Introduction to Geoinformation Technologies	3

GGS 300	Quantitative Methods for Geographical Analysis	3
GGS 311	Introduction to Geographic Information Systems	3
GGS 463	Applied Geographic Information Systems	3
Total Credits		12

Electives

Code	Title	Credits
Select 6-8 credits from the following: ¹		
GGS 308	Field Mapping Techniques	3
GGS 310	Introduction to Digital Cartography	3
GGS 354	Data Analysis and Global Change Detection Techniques	3
GGS 379	Remote Sensing	3
GGS 410	Introduction to Hyperspectral Imaging	3
GGS 411	Advanced Digital Cartography	3
GGS 412	Air Photography Interpretation	3
GGS 416	Satellite Image Analysis	3
GGS 462	Web Mapping	3
GGS 470	Special Topics in Geographic Techniques	3
GGS 480	GGS Internship	3
CS 112	Introduction to Computer Programming (Mason Core)	3
CDS 130	Computing for Scientists (Mason Core)	3
Total Credits		6-8

¹ With departmental permission, one course with significant geographic information systems (GIS) content may be used as an elective.