

# 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.

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

## Electives

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

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

## 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
GGG 110	Introduction to Geoinformation Technologies	3