

# GEOGRAPHIC INFORMATION SYSTEMS, GRADUATE CERTIFICATE

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The Graduate Certificate in Geographic Information Systems offers current graduate and post-baccalaureate students an intensive, interdisciplinary course of study in the field of Geographic Information Systems (GIS) technology and theory. All certificate students complete four required courses that introduce GIS concepts and applications, database formats, mapping, and spatial analysis. Based on area of specialization, students then elect to pursue GIS applications in either the environmental sciences or the social sciences. All students are required to participate in a “real world” GIS project in order to complete the certificate. The graduate certificate is open to all current graduate students and to post-degree continuing education students. No prior background in GIS is required.

## Required Core

GEOG 528	GEOGRAPHIC INFORMATION SYSTEMS I	5
GEOG 538	GEOGRAPHIC INFORMATION SYSTEMS II	5
GEOG 548	GEOGRAPHIC INFORMATION SYSTEMS III	5
GEOG 549	GIS PORTFOLIO	2

## Elective Concentrations

### Application Area Concentration

GEOG 521	GIS FOR SOCIAL SCIENCES	3-5
or GEOG 523	GIS FOR ENVIRONMENTAL SCIENCE	

### Programming and Geospatial Database Concentration

GEOG 536	GIS PROGRAMMING	5
or GEOG 599	DIRECTED STUDY	

### Visualization Techniques Concentration

GEOG 527	DESKTOP MAPPING	3-5
or GEOG 599	DIRECTED STUDY	

Note: Current graduate students in programs other than this certificate program will be required to demonstrate use of GIS analysis in their master’s research project. Current post-baccalaureate students will be required to complete an internship with a designated community partner as part of their GEOG 548 course.

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Total Credits	28
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## Student Learning Outcomes—students will

- demonstrate mastery of foundational concepts of geographic information science;
- demonstrate knowledge of the history of the technologies, methodologies, and philosophies of geographic information science;
- critically evaluate research in the field of geographic information science;
- critically evaluate the quality and accuracy of spatial data;
- demonstrate proficiency with geographic information system software and related programming languages;
- design and implement methods and communicate results using geographic information system software as part of critical spatial analysis research.