

# GRADUATE CERTIFICATE: GEOGRAPHIC INFORMATION SYSTEMS (GIS)

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## Student Learning Outcomes

- Students will be able to identify geospatial issues and technical needs in problem-solving in relation to relevant academic disciplines, industrial production, or public services
- Students will be able to design geospatial technical approaches for problem-solving
- Students will be able to analyze geospatial data and produce maps using relevant GIS software
- Students will be able to present geospatial study findings with oral presentation and written reports

Geographic Information Systems (GIS) and related geospatial techniques are fast-growing and increasingly applied to almost all sectors of our society. Examples include environmental mapping, urban planning, and public resource management. This Missouri State-approved, transcribed graduate certificate program offers GIS-related multidisciplinary courses through several academic programs of the College of Arts & Sciences, such as Geosciences, Urban Planning and Design, Sociology, Economics, and Criminal Justice and Criminology. The curriculum is designed to prepare students for a variety of careers in the rapidly growing job market.

This graduate certificate program is open to any students with a bachelor's or a graduate degree and appropriate academic backgrounds, such as degree-seeking graduate students and working professionals.

For completion of the certificate program, the student is required to finish the coursework of 17-20 credit hours with a 3.0 GPA or higher.

Code	Title	Credits
<b>Required Core Courses</b>		
GEOG 450	Gis Fundamentals for Research Applications	4
GEOG 5507	Advanced Geographic Information Science	4
<b>Electives</b>		
Select three of the following:		9-12
GEOG 5502	Environmental Remote Sensing and Digital Image Analysis	4
GEOG 5504	Biogeography and Landscape Ecology	3
GEOG 5544	Advanced Spatial Data Analysis	4
GEOG 5548	Satellite Climatology	4
GEOG 5598D	Special Topics in Advanced GIS and Remote Sensing	3
CJC 5592	Advanced GIS For Crime Analysis	3
ECON 5511	Geographic Information Systems (GIS) for Urban Economic Development	3
UPD 5740	Advanced GIS for Urban Planning	3
SOCIOL 5534	Spatial Thinking in Social Science	3