

# UNDERGRADUATE CERTIFICATE: GEOGRAPHIC INFORMATION SYSTEMS (GIS)

## Student Learning Outcomes

Students graduating from this program will:

- Identify geospatial issues and technical needs in problem-solving in relation to relevant academic disciplines, industrial production, or public services.
- Design geospatial technical approaches for problem-solving.
- analyze geospatial data and produce maps using relevant GIS software.
- 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 undergraduate 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 undergraduate certificate program is open to any degree-seeking undergraduate students at UMKC with appropriate academic backgrounds.

For completion of the certificate program, the student is required to finish the coursework of 17-18 credit hours with a 3.0 GPA or higher.

Code	Title	Credits
GEOG 203	Introduction to Geographic Information Systems	4
GEOG 401	Advanced Geographic Information Science	4
<b>Electives</b>		
<b>Select three of the following:</b>		<b>9-10</b>
ECON 411	Geographic Information Systems (GIS) for Urban Economic Development	
GEOG 402	Environmental Remote Sensing and Digital Image Analysis	
GEOG 404	Biogeography and Landscape Ecology	
GEOG 417	Special Topics	
GEOG 444	Spatial Data Analysis	
GEOG 448	Satellite Climatology	
GEOLOGY 456	Field Methods in 3D Imaging of the Environment	
SOCIOL 434	Spatial Thinking in Social Science	
UPD 300	Quantitative Planning Methods And Techniques	
UPD 400	Advanced GIS For Urban Planning	
Total Credits		17-18