

GEOGRAPHIC INFORMATION SYSTEMS (GIS) CERTIFICATE

Geographic information systems are compilations of sophisticated software and tools used to capture, store, analyze, manage, and present geospatial data. The GIS certificate program provides training in the use of contemporary geographic mapping technology to solve complex geospatial problems commonly encountered in environmental sciences, urban planning, social sciences, public health, business, and engineering.

Related Programs

Master's

- Environmental Science and Sustainability (MS) (<https://catalog.luc.edu/graduate-professional/environmental-sustainability/environmental-science-sustainability-ms/>)

Certificate

- Environmental Law and Policy Certificate (<https://catalog.luc.edu/graduate-professional/environmental-sustainability/environmental-law-policy-certificate/>)
- Sustainability Assessment and Planning Certificate (<https://catalog.luc.edu/graduate-professional/environmental-sustainability/sustainability-assessment-planning-certificate/>)

Curriculum

Code	Title	Hours
ENVS 479	Python Programming for GIS	3
ENVS 480	Introduction to Geographic Information Systems	3
ENVS 481	Advanced GIS Applications	3
ENVS 482	Remote Sensing	3
Total Hours		12

Suggested Sequence of Courses

Course	Title	Hours
Year 1		
Fall		
ENVS 480	Introduction to Geographic Information Systems	3
ENVS 482	Remote Sensing	3
Hours		6
Total Hours		6

Course	Title	Hours
Year 1		
Spring		
ENVS 481	Advanced GIS Applications	3
Hours		3
Total Hours		3

Graduate & Professional Standards and Regulations

Students in graduate and professional programs can find their Academic Policies in Graduate and Professional Academic Standards and

Regulations (<https://catalog.luc.edu/academic-standards-regulations/graduate-professional/>) under their school. Any additional University Policies supersede school policies.

Learning Outcomes

- Understand the practical, conceptual, and technological application of GIS, including ethical issues germane to GIS; research through the use of GIS data; and use of GIS in community-service projects.
- Understand various spatial relationship concepts and their applications, including identifying methodological challenges and understanding the use of spatial data to make sound arguments in spatial problem solving and planning and policy.
- Understand the fundamental principles of remote sensing theory, including understanding the properties of light and platforms used to analyze it; understanding the concepts of landscape patterns; producing thematic maps; and becoming proficient in using ERDAS Imagine to analyze digital satellite images and scanned aerial photographs.