GEOGRAPHIC INFORMATION SYSTEMS CERTIFICATE

Tourism, Environment, and Sustainable Societies

Course	Title	Credits
GE 2050	GIS I: Introduction to Geographic Information Systems (QRCO,TECO)	4
GE 3050	GIS II: Advanced Geographic Information Systems	4
Upper-Level Electives		8
GE 4010	Remote Sensing and Digital Image Processing	
GE 4050	Geospatial Technology Applications	
GE 4060	GIS Programming	
GE 4100	Geographic Information Systems Internship	
Total Credits		**16**

Learning Outcomes:

The certificate program will give in-depth knowledge of how to capture, store, manage, manipulate, and analyze geographic information and remotely sensed image data.

- Demonstrate the operational characteristics of GIS.
- Perform geoprocessing and spatial analysis using GIS tools.
- Visually analyze geographic data using 3-D technology.
- Demonstrate and analyze spatial patterns of geographic data using spatial statistics.
- Construct and apply Web GIS tools to GIS projects.
- Demonstrate how to apply GIS to solve real-world issues and problems.
- Design and implement GIS solutions in Python to automate geoprocessing tasks.
- Apply GIS programming skills to analyze and automate tasks of spatial data.
- Perform image enhancement, image interpretation, and automated analysis using digital imagery.
- Perform spatial analysis of remotely sensed image data using GIS and RS tools.

Career Pathways:

- Urban and Regional Planning
- Environmental Science
- Geospatial Information Analysis
- Market Analysis
- Policy Analysis
- Natural Resource Management
- Public Health and Epidemiology
- Military Intelligence, Emergency, and Public Safety
- Real Estate Analysis