



# Geographic Information Science *cert*

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Required Credits: 12

Required GPA: 3.00

## I REQUIRED COURSES

Note: It is advised that students not having previously taken a GIS course include GEOG 5231, Introduction to Geographic Information Systems, as one of their courses

Select 4 courses from the following list:

- GEOG 5150 Applications of Machine Learning (3 credits)
- GEOG 5226 Cartography (3 credits)
- GEOG 5231 Introduction to Geographic Information Systems (3 credits)
- GEOG 5232 Intermediate Geographic Information Systems (3 credits)
- GEOG 5255 Introduction to Remote Sensing (3 credits)
- GEOG 5265 Spatial Analysis (3 credits)
- GEOG 5275 Advanced Geographic Information Systems (3 credits)
- GEOG 5285 Drone Applications (3 credits)
- GEOG 5910 Directed Independent Study (3 credits)  
*or*GEOG 5970 Internship (3 credits)  
*or*GEOG 5980 Research (3 credits)

## Program Learning Outcomes | Geographic Information Science

1. Comprehend the fundamental concepts and practices of Geographic Information Systems (GIS).
2. Collect, manage, analyze, and visualize geospatial data using GIS software.
3. Employ cartographic and map design principles to produce maps and visualizations.
4. Select and apply appropriate geoprocessing tools and spatial analysis techniques to solve real-world problems.
5. Effectively communicate spatial information through maps and visualizations.