

CERTIFICATE OF UNDERGRADUATE STUDY  
IN  
GEOGRAPHIC INFORMATION SYSTEMS FOUNDATIONS

**Program Guide**

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Geospatial and mapping technologies are integral to many modern scientific, commercial, and academic activities and draw on the long history of cartographic and data visualization. This CUGS in Geographic Information Systems [GIS] Foundations provides an introduction to how information becomes data that can be presented visually in the form of a map, to communicate to an audience, yield new analytical insights, or present patterns and relationships unavailable in other forms. This Certificate of Undergraduate Study (CUGS) in GIS Foundations is intended to expose students in disciplines such as engineering, disaster management and emergency preparedness, public health, business, social sciences, communication, the natural and environmental sciences, and education to key concepts, practices, and techniques in GIS and their application to geospatial/environmental problems. With three required courses, students can demonstrate their competence and familiarity with key spatial data preparation, analysis, and visualization techniques that may complement and enhance preparedness for a wide variety of occupations and disciplines.

**Certificate of Undergraduate Study in GIS 13 s.h.**

Requirements

	Course Number	Course Title	Semester Taken	S.H.
1	GEOG16.160	Digital Earth: Mapping and Geographic Information Science <i>(formerly Introduction to Mapping and Geographic Information Science)</i>		3 s.h.
2	GEOG16.260	Fundamentals of Geographic Information Systems		4 s.h.
3	<i>Geospatial Bank</i> <b>Foundational Course</b>			3 s.h.
4	<i>Geography, Planning, and Sustainability</i> <b>Foundational Course</b>			3 s.h.

In consultation with an advisor, students choose **one** of the courses in the **Foundational** section of the Department of Geography, Planning, and Environment Geospatial Bank courses (3 s.h.), for example:

- GEOG16.261 (Cartography)
- GEOG16.350 (Quantitative Methods in Geography)
- GEOG16.361 (Geovisualization)
- GEOG16.370 (Drones, Planes, and Satellites)
- GEOG16.462 (Web Mapping and GIS Services)

And choose **one** of the Geospatial, Planning, and Sustainability Foundational Course

- GEOG16.100 (Earth, People, and Environment)
- GEOG16.110 (Cultural Geography)
- GEOG16.140 (World Regional Geography)
- PLAN31.280 (Foundations of Planning and Environmental Design)

To be awarded the CUGS in GIS, students must complete all courses required for the CUGS in GIS with at least a 2.0 average. This CUGS is restricted to students not enrolled in the BS GIS and GIS Minor programs.