

GRADUATE CERTIFICATE IN GEOGRAPHIC INFORMATION SYSTEMS

The Department of Geography and Geology at SHSU offers a GIS Graduate Certificate Program developed to provide students with GIS skills required in today's job market. The GIS certificate curriculum is developed with the objective of providing a solid foundation in GIS theories and applications. Students enrolled in the GIS Certificate program at SHSU will learn to use technological tools and skills in their areas of expertise and in several major application areas. This includes use of GIS in infrastructure management, the oil and gas industry, public health, planning, and business applications. The curriculum will provide students with hands-on experience in major GIS and remote sensing vendor-specific and open source software packages, such as ArcGIS, ERDAS IMAGINE, Geoda, and Fusion. Students will learn:

- different spatial data structures and their essential properties;
- principles and methods for collecting spatial data;
- principles of map design and effective cartographic communication;
- methods of spatial analysis, ways spatial data can be used to investigate complex problems; and
- how to customize GIS software to meet organizational needs.

The program is intended to serve:

- recent graduates who wish to acquire technical expertise to support the knowledge gained in their undergraduate major;
- returning students who wish to acquire specialized training to meet current or future job requirements; and
- students at the graduate level who wish to demonstrate a level of mastery of the subject area by obtaining a certificate.

Applicants seeking admission to the graduate certificate program in Geographic Information Systems must submit the following directly to the Office of Graduate Admissions:

1. Graduate Application (<http://www.shsu.edu/admissions/apply-texas.html>)
2. Application fee (<http://www.shsu.edu/dept/graduate-studies/application-fee.html>)
3. Official transcript from the baccalaureate degree granting institution
4. Resume

The **graduate** certificate program consists of three core courses and a minimum of two electives.

Students will need to complete a minimum of 15 credits while in the program.

Code	Title	Hours
Graduate Certificate in Geographic Information Systems		
Core Courses		
GEOG 5361	Geographic Information	3
GEOG 5362	GIS Principles and Application	3
GEOG 5364	Spatial Analysis	3
Electives		
Select two of the following:		6
GEOG 5310	GIS Project Management	
GEOG 5311	GIS in Law Enforcement	
GEOG 5312	GIS ModelBuilder	
GEOG 5363	Internet GIS	
GEOG 5365	Digital Image Processing	
GEOG 5366	Cartography And Visualization	
GEOG 5367	GIS Programming	
GEOG 5368	GIS Program Use and Applicatns	
GEOG 5371	Geographic Information Systems in Enenergy-Related Fields	
GEOG 5373	Introduction to LiDAR & Radar	
GEOG 5374	Advanced GIS Analysis	
Total Hours		15

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The GIS graduate certificate is also offered in coordination with the MS in Geographic Information Systems (<http://www.shsu.edu/programs/master-of-science-in-geographic-information-systems>).