GRADUATE CERTIFICATE IN GEOGRAPHIC INFORMATION SYSTEMS

The Department of Environmental and Geosciences 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.

This Graduate Certificate is eligible to receive Title IV funding – Direct Unsubsidized Loans and Graduate PLUS loans by request. To be considered for aid, students need to submit a Free Application for Federal Student Aid (FAFSA).

Applicants seeking admission to the graduate certificate program in Geographic Information Systems must submit the following directly to the Office of Graduate Admissions (https://www.shsu.edu/dept/graduate-admissions/prospective-students.html):

1. Graduate Application (http://www.shsu.edu/dept/graduate-admissions/prospective-students.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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 5361</td>
<td>Geographic Information</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 5362</td>
<td>GIS Principles and Application</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 5364</td>
<td>Spatial Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

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 Applications
- GEOG 5371 Geographic Information Systems in Energy-Related Fields
- GEOG 5373 Introduction to LiDAR & Radar
<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>GEOG 5374</td>
<td>Advanced GIS Analysis</td>
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</table>

**Total Hours**: 15

**Note**: 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/](http://www.shsu.edu/programs/master-of-science-in-geographic-information-systems/)).