Graduate Certificate in Geospatial Information Science and Technology

This Graduate Certificate program will provide training for students to gain knowledge and skills necessary to employ Geospatial Information Science and Technology (GIST) in their field of expertise. GIST is a collective term used to describe geographic information systems, remote sensing, global positioning, internet mapping, and other approaches for collecting, managing, analyzing, and visualizing data with spatial attributes. The program combines training in core GIST concepts with exposure to how GIST is being applied in different disciplines. Students will become experienced using the leading industry system ESRI’s ArcGIS Pro, as well as other proprietary and open source systems such as ERDAS, ENVI, and QGIS. This program is appropriate for students from many disciplines and is especially relevant to students from geology, environmental science, social science, criminal justice, intelligence and national security studies, and civil or mechanical engineering.

Admission Requirements

Admission to the program requires an application to the program through the graduate school. This can occur through the graduate school at the same time students apply to another graduate program. Students who have previously been admitted to another graduate program may submit a form indicating their intention to complete this certificate directly to the program. There are no prerequisite courses, although knowledge of some programming, statistics, and/or mathematics is helpful. A minimum undergraduate GPA of 3.0 is required for admission into the program. Students with prior coursework or experience in GIS may have the introduction to GIST requirement waived by the program but must substitute another three credit hour course.

Degree Plan

Credit hours: 15

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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>GEOL 5321</td>
<td>Introduction to GIST</td>
<td>3</td>
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<tr>
<td>or GEOL 6331</td>
<td>Introduction to GIST</td>
<td></td>
</tr>
<tr>
<td>GEOL 5322</td>
<td>Advanced GIST</td>
<td>3</td>
</tr>
<tr>
<td>or GEOL 6322</td>
<td>Advanced GIST</td>
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Electives

Select three courses from the list below:

- EE 5372  Image Processing
- EE 5373  Intro to Remote Sensing Syst
- GEOL 5323  Spat Analysis Earth/Env Sci
- or GEOL 6333  Spat Analysis Earth/Env Sci
- GEOL 5324  Geocomputation
- or GEOL 6324  Geocomputation
- GEOP 5335  Intro to Remote Sensing
- or GEOP 6335  Intro to Remote Sensing
- GEOP 5336  Digital Image Processing
- or GEOP 6336  Digital Image Processing
- GEOL 5375  Quantit Techniq Geological Sci
- INSS 5312  Commercial Imagery
- INSS 5355  Geospatial Intelligence
- SOCI 5363  Environmental Justice
- SOCI 5381  Cartography & Visualization

The following topics courses Directed Study or Independent Study must be GIST - related and approved in advance by the program. Other relevant courses may be applied with permission from the program.

- BIOL 5301  Select Adv Topics Biol Science
- EE 5390  Special Topics Electrical Engr
- ESCI 5315  Topics in Environmental Sci.
- GEOL 5315  Selected Topics-Geological Sci
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<tr>
<th>Course Code</th>
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<tr>
<td>GEOL 6315</td>
<td>Adv Topics in Geological Scien</td>
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*Total Hours: 15*