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 and exposure to how GIST is being applied in different disciplines. Students will become experienced using the leading industry system ESRI’s ArcGIS, as well as other proprietary and open source systems such as ENVI and QGIS. This program is appropriate for students from many disciplines and is especially relevant to students from geology, environmental science, social science, 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 at the same time students apply to another graduate program. Students who have already been admitted to another graduate program must separately apply to this program. There are no prerequisite courses, although knowledge of some programming, statistics, and/or mathematics is helpful.

Degree Plan

Credit hours: 15

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOL 5321</td>
<td>Introduction to GIST</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 5322</td>
<td>Advanced GIST</td>
<td>3</td>
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**Technical Electives**

Select one course from the list below:

- EE 5360 Computer Vision
- EE 5372 Image Processing
- EE 5373 Intro to Remote Sensing Syst
- GEOL 5323 Spat Analysis Earth/Env Sci
- GEOL 5324 Geocomputation
- GEOL 5362 Directed Study in Geology
- GEOP 5335 Intro to Remote Sensing
- GEOP 5336 Digital Image Processing
- SOCI 5381 Cartography & Visualization

**Applied Courses**

Select one course from the list below:

- BIOL 5301 Select Adv Topics Biol Science
- GEOL 5303 Computer Appl in Earth Sci
- GEOL 5323 Spat Analysis Earth/Env Sci
- GEOL 5362 Directed Study in Geology
- INSS 5355 Geospatial Intelligence

**Elective**

Select one additional course from Technical Electives or Applied Courses

**Total Hours** 15