

# Graduate Certificate in Geospatial Information Science and Technology

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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

Code	Title	Hours
<b>Required courses</b>		
GEOL 5321 or GEOL 6331	Introduction to GIST	3
GEOL 5322 or GEOL 6322	Advanced GIST	3
<b>Electives</b>		<b>9</b>
Select three courses from the list below:		
EE 5372	Image Processing	
EE 5373	Intro to Remote Sensing Syst	
GEOL 5323 or GEOL 6333	Spat Analysis Earth/Env Sci	
GEOL 5324 or GEOL 6324	Machine Learning in Geoscience	
GEOP 5335 or GEOP 6335	Intro to Remote Sensing	
GEOP 5336 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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or GEOL 6315

Adv Topics in Geological Scien

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**Total Hours**

**15**