

Graduate Certificate in Geospatial Information Science and Technology

Program Director:

Dr. Deana D. Pennington
College of Geological Sciences
ddpennington@utep.edu
(915) 747-5867

Program Description:

The Graduate Certificate in Geospatial Information Science and Technology (GIST) provides training for students to gain knowledge, skills, and attitudes 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, spatial reasoning, 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 engineering.

Admission Requirements:

Admission to the program requires admission to the graduate school. There are no prerequisite courses, although knowledge of some programming, statistics, and/or mathematics is helpful.

Degree Requirements:

The GIST Graduate Certificate Program requires completion of 5 courses for a total of 15 credits. Two courses are required: GEOL 5321 Introduction to Geospatial Information Science, and GEOL 5322 Advanced Geospatial Information Science and Technology. One elective must be selected from technical core courses, including GEOP 5335 Introduction to Remote Sensing, GEOP 5336 Digital Image Processing, EE 5372 Image Processing, EE 5373 Introduction to Remote Sensing Systems, EE 5360 Computer Vision, GEOL 5362 Directed Study using ESRI online (or other) training modules, SOCI 5341 Thematic Cartography and Map Design, and GEOL 5315 Geocomputation. One elective must be chosen from courses focused on disciplinary applications of GIST developed in departments across campus, including GEOL 5323 Spatial Analysis in Earth and Environmental Sciences, BIOL 5301 Ecological Modeling with Rasters, INSS 5355 Geospatial Intelligence, GEOL 5303 Computer Applications in Earth Sciences, GEOL 5362 Directed Study using application-focused ESRI online (or other) training modules, and other courses under development that are approved by the program. The final elective may be taken from either the technical core or the applied courses. The program is intentionally flexible to meet the needs of students from any college or department.