



## Geographic Information Science and Technology (GIST) Graduate Certificate Program

The 15 credit hour GIST Graduate Certificate Program provides an educational pathway for UTEP students from any discipline to gain knowledge and skills necessary for employing GIST in their field of expertise. The program is intentionally flexible to meet the needs of students from any college or department, or for non-degree seeking students who would like to add this Certificate to their resume. The program combines training in core GIST concepts with exposure to how GIST is being applied in their discipline. To accomplish this, students need to complete two required courses, one technical elective, and two applied elective courses. More information on the GIST Certificate program is available here: <https://science.utep.edu/gist/>.

### REQUIRED COURSES

- **GEOL 5321 Introduction to GIST (3 hours)**
- **GEOL 5322 Advanced GIST (3 hours)**

### Sociology Courses for the GIST Graduate Certificate

#### TECHNICAL CORE ELECTIVE

##### **SOCI 5381 Cartography and Visualization: Mapping Social Data with GIST (3 hours)**

This course provides: (1) an introduction to the principles and techniques of cartography, with a specific focus on mapping socio-demographic data; and (2) hands-on experience with thematic map design and production using GIS software.

NOTE: No prior GIS coursework or knowledge is necessary. Currently offered only in the Maymester.

#### APPLIED ELECTIVES

##### **SOCI 5390 Individual Studies: Analyzing Social Data with GIST (3 hours)**

The purpose of this course is to build on the basic principles covered in introductory GIST and/or cartography courses and gain experience with analytic approaches emphasizing various demographic and socioeconomic applications of GIST. Several GIS-based analysis and modeling techniques relevant to the specific applications are covered.

NOTE: Prior GIST coursework is required (GEOL 5321: *Introduction to GIST* or SOCI 5381: *Cartography and Visualization*). Currently offered as a Directed Study course in Sociology.

**SOCI 5363/SOCI 5341 Environmental Justice: Theories, Methods, and Policy (3 hours)**

This course examines concepts, theories, debates, methodologies, analytic tools, policies, and case studies that contribute to our understanding of environmental justice (EJ) and sustainability. It explores the use of qualitative, quantitative, and mixed methods approaches, including GIST and internet-based tools, for environmental risk assessment and EJ analysis.

NOTE: Students wishing to use this course for the GIST Graduate Certificate must complete a final project where they apply GIS-based methodologies for EJ analysis in a particular study area (case study paper). Students who select this option must notify the instructor at the time of enrollment. Prior GIST coursework is required (GEOL 5321: *Introduction to GIST* or SOCI 5381: *Cartography and Visualization*).