

Master of Science in Geospatial Information Sciences

<http://www.gis.utdallas.edu>

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Objectives

The Master of Science in Geospatial Information Sciences is a professional program that is offered jointly by the School of Economic, Political and Policy Sciences and the School of Natural Sciences and Mathematics. The program focuses on the use of Geographic Information Systems (GIS) and associated technologies such as remote sensing and global positioning systems for acquiring, managing and analyzing spatially-referenced information. Students are provided with the concepts underlying GIS, the skills for implementing GIS projects in public or private sector organizations, and the ability to use GIS in pure or applied research in substantive areas.

Graduates of the program can apply their skills in a variety of areas such as public administration and policy analysis; public safety, criminology, and emergency preparedness management; environmental management; urban, regional, social service and transportation planning and analysis; private sector business, especially marketing, site selection, logistics and real estate; and resource exploration, including petroleum.

Facilities

Classes are offered through state-of-the-art GIS computing facilities housed at the Bruton Center in the School of Economic, Political and Policy Sciences and the NASA Center for Excellence in Remote Sensing in the Department of Geosciences. The University's extensive instructional computing facilities are also available. Facilities are open extended hours including evenings and weekends. Enrollment in hands-on courses is controlled to ensure that a station is available for every student. All industry-standard GIS and remote sensing software is available. The University is an Oracle Center of

Excellence for Spatial Data Management and a member of the University Consortium for Geographic Information Science (UCGIS)

Admission Requirements

The University's general admission requirements are discussed [here](#).

For the Masters in Geospatial Information Sciences, a baccalaureate degree from an accredited university or college is required and Graduate Record Examination (GRE) or Graduate Management Aptitude Test (GMAT) scores must be presented. A 3.0 undergraduate grade point average (on a 4.0 scale), and a combined verbal and quantitative score of at least 1000 on the GRE, or equivalent score on the GMAT, are desirable. Students must also submit transcripts from all higher education institutions attended, three letters of recommendation, and a one page essay outlining their background, education and professional objectives.

Prerequisites

For the Masters in Geospatial Information Sciences, beginning students must have the equivalent of GISC 6381 GIS Fundamentals and GISC 6382 Applied GIS or they must take these courses at UTD in addition to the 30 credit hours required for the Masters. Additionally, beginning students are expected to have completed college mathematics through calculus and at least one programming or computer applications course, or have equivalent knowledge.

Transfer Policies

With permission, up to six hours of credit equivalent to courses at UTD may be transferred from another institution. Students desiring to transfer graduate courses thought to be equivalent to core courses may be required to demonstrate competency through examination. The award of such transfer credit must be consistent with the University's "Transfer of Credit" policy. Up to 15 hours of courses taken as a non-degree student at UTD can be applied to the masters degree. Hours taken for the Graduate Certificate in Geographic Information Systems meet the prerequisites for, and provide credit toward, the Masters in Geographic Information Sciences. All courses required for the masters degree, including those transferred, must be taken within a single 6-year period.

Degree Requirements

The University's general degree requirements are discussed [here](#).

To earn the Masters in Geospatial Information Sciences, students must complete a minimum of 30 semester credit hours of work in the program. The program consists of a base requirement of 9 hours (three courses), a core requirement of 9 hours, a research project requirement of 3 hours, and prescribed electives for 9 hours. Students must

achieve at least a 3.0 grade point average in the core requirement and an overall grade point average of 3.0 to graduate.

Base Requirement (9 credit hours):

GEOS 5303 Computing for Geoscientists
GEOS 5306 Data Analysis for Geoscientists
POEC 5313 Descriptive and Inferential Statistics for the Economic, Political and Policy Sciences
POEC 5317 Computer Techniques in Policy Analysis
GISC 5317 Computer Programming for GIS

Core Requirement (9 credit hours):

GISC 6383 Geographic Information Systems (GIS) Management and Implementation
GISC 6384 Spatial Analysis and Modeling or GEOS 5423 GIS Applications in Geosciences
GISC 6387 Geographic Information Systems Workshop (GEOS 5308 Special Topics may substitute with advisor consent.)

Research Project Requirement (3 hours):

GEOS 8000-level research course or GISC 6389 Master's Project in GIS or GISC 7389 GI Sciences Ph.D. Research Project Qualifier

Elective Courses (at least 9 credit hours from the following, not duplicated elsewhere)

GISC 6380 Spatial Concepts and Organization
GISC 6385 Geographic Information Systems (GIS) Theories, Models, and Issues
GISC 6386 Urban and Environmental Applications for Geographic Information Systems (GIS)/Remote Sensing
GISC 6388 GIS Application Development
GISC 7360 GIS Pattern Analysis
GISC 7361 Spatial Statistics
GISC 7362 GIS Network Modeling
GISC 7363 Internet Mapping and Information Processing
GISC 7364 Demographic Analysis and Modeling
GISC 7365 Remote Sensing Digital Image Processing
GISC 7366 Applied Remote Sensing
GISC 7368 Spatial Epidemiology
GISC 7387 Research Design in GIS
GISC 7384 Advanced Raster Modeling
GISC 8320 Seminar in Spatial Analysis
GEOS 5322 Global Positioning System (GPS) Surveying and Mapping Techniques
GEOS 5423 GIS Applications to Geosciences
GEOS 5324 3-D GIS Data Acquisition

GEOS 5325 Introduction to Remote Sensing
GEOS 5326/GISC 7365 Remote Sensing Digital Image Processing
GEOS 5328 Radar Remote Sensing
GEOS 5329/GISC 7366 Applied Remote Sensing
CS 6359 Object Oriented Analysis and Design
CS 6360 Database Design
CS 6366 Computer Graphics
CS 6384 Computer Vision
MIS 6308 Systems Analysis and Project Management
MIS 6324 Decision Support Systems
MIS 6326 Database Management Systems
MIS 6328 Information Strategy Planning
PA 5318 Information Systems in Policy Environments
POEC 5316 Advanced Regression Analysis