

# GEOGRAPHIC INFORMATION SCIENCE AND TECHNOLOGY - MASTER OF SCIENCE (ONLINE)

## Overview

The Master of Science in Geographic Information Science & Technology (GIS&T) at New Mexico State University is New Mexico's only fully online master's program in GIS&T. Designed for working professionals and recent graduates, this flexible and applied program equips students with the technical expertise and analytical skills needed to succeed in today's geospatial workforce.

The 100% asynchronous online format allows students to complete their degree from anywhere while maintaining access to NMSU's expert faculty, research resources, and professional network. With a flexible time frame and an emphasis on applied learning, the program enables students to develop specialized expertise while balancing work, education, and other commitments.

## A Practical and Industry-Focused Curriculum

The M.S. in GIS&T program provides students with a comprehensive foundation in GIS&T theory, methods, and applications, while allowing them to tailor their studies to their interests and career goals.

The 30-31 credit curriculum includes:

- **Core Courses (20 credits):** Establishes a solid foundation in cartography, GIS, remote sensing, spatial analysis, spatial modeling, programming, and professional ethics.
- **Elective Course (3-4 credits):** Allows students to develop specialized skills in specific methods (e.g., remote sensing) or application areas (e.g., water resources).
- **Capstone Project (6 credits):** A hands-on, applied project where students work with an external partner to solve a real-world problem, culminating in a technical report and presentation at the Digital Symposium.
- **Professional Portfolio (1 credit):** A digital showcase of the student's expertise, professional experience, and GIS&T accomplishments.

Students may substitute certain core courses with faculty approval, ensuring the curriculum meets their professional background and career objectives.

## Real-World Experience & Industry Connections

A hallmark of the M.S. in GIS&T program is its strong connection to government agencies, private industry, and nonprofits. Students engage in applied GIS&T projects with external partners, including:

- City, county, state, and federal agencies (e.g., City of Las Cruces, Doña Ana County, U.S. Geological Survey, U.S. Department of Agriculture, New Mexico Department of Health).

- Private-sector firms (e.g., ESRI, SWCA Environmental Consultants, Bohannon Huston Inc.).
- Nonprofit organizations (e.g., Nature Conservancy, Gila Conservation Coalition, Friends of Organ Mountains Desert Peaks).

These collaborations allow students to gain hands-on experience, build their professional network, and apply GIS&T methods to real-world environmental, social, and technological challenges.

## Who Should Apply?

The M.S. in GIS&T is ideal for:

- Working professionals seeking to advance their careers in geospatial careers.
- Recent graduates looking to enter the GIS&T workforce with a strong applied skill set.
- Professionals from other fields (e.g., environmental science, urban planning, engineering, public health) who want to integrate GIS&T into their work.

A background in geography or GIS&T is not required, though students without prior geospatial coursework may need to take foundational courses. Prospective students are encouraged to consult with the Graduate Program Director for guidance on program preparation.

## Career Pathways

Graduates of the M.S. in GIS&T program find job opportunities in diverse fields, including urban and regional planning, environmental consulting and sustainability, natural resource management, emergency and disaster management, geospatial intelligence and defense, public health and epidemiology, data science, surveying and engineering, and geospatial analytics.

With expertise in spatial data acquisition, programming, analysis, modeling, and visualization, students are well-prepared for high-demand careers in both the public and private sectors.

## Program Learning Outcomes

Upon completion of the M.S. in GIS&T, students will be able to:

1. Evaluate basic and advanced concepts, methods, and applications in geographic information science and technology.
2. Solve real-world problems by acquiring, analyzing, interpreting, evaluating, and visualizing spatial data.
3. Conduct all stages of an independent research project, including conceptualization, planning, implementation, management, and communication.

## More Information

See the Requirements tab for details on course and credit expectations for earning the M.S. in GIS&T, and the Roadmap tab for a suggested course sequence.