GEOGRAPHIC INFORMATION SYSTEMS, MASTER OF SCIENCE

MS in Geographic Information Systems (https://advanced.jhu.edu/academics/graduate/ms-geographic-information-systems/)

Geographic Information Systems is a dynamic and versatile technology that enables visualization, analytics, and data management capabilities for an increasingly wide spectrum of industries. GIS has come to play a key role in empowering decision-makers, helping them understand various processes and make well-informed decisions. It is used in diverse fields, such as environmental planning, law enforcement, defense and intelligence, business, utilities, telecommunications, economic development, transportation, public health, and many others.

The MS in Geographic Information Systems program is fully online and provides a strong foundational education that delves into the principles and real-world applications of geospatial technology, allowing students to build their credentials and capitalize on a marketplace that continues to grow in its demand for skilled employees. The program is designed to prepare the next generation of geospatial professionals and data scientists, skilled in all facets of geospatial technology, including programming and application development, geospatial data science, spatial and predictive analytics, visualization, big data technologies, enterprise GIS administration, and project management.

Designed for students who have little or no knowledge of the GIS field, as well as students with prior experience, the program introduces students to the most widely used commercial software, as well as open-source software, often utilizing cloud computing infrastructure. Hands-on experience is emphasized, and students in the program can expect to work on real-world geospatial scenarios.

MS in Geographic Information Systems students can choose to follow one of three focus areas or customize the degree to suit career goals. The focus areas are general recommendations of logical course groupings that can be pursued. The goal is to maintain flexibility for the GIS program and allow students to choose courses that best fulfill their own interests. Focus areas are:

- Advanced Geospatial Technology
- GIS Programming and Application Development
- Geospatial Data Science and Predictive Analytics

Admissions Criteria for All Advanced Academic Programs (https://e-catalogue.jhu.edu/arts-sciences/advanced-academic-programs/Admission/#admissionrequirementstext)

PROGRAM-SPECIFIC REQUIREMENTS

In addition to the materials and credentials required for all programs, MS in Geographic Information Systems program applicant requirements are:

- **Resume**
- **Statement of Purpose:** Please provide a statement, up to one page in length, describing your personal background and/or a part of your life experience that has shaped you or your goals. Feel free to elaborate on personal challenges and opportunities that have influenced your decision to pursue a graduate degree at Johns Hopkins.
- **Two Letters of Recommendation**
- **Prerequisite Course:**
  - One semester of statistics or quantitative methods

Program Requirements

Students in the MS in Geographic Information Systems program must complete:

- One required core course
- Three customizable core courses
- Six electives

Code	Title	Credits
Core Course - Required:		
AS.430.800	Capstone for Geographic Information Systems	3
Core Courses - Customizable		
Select three of the following:		9-11
AS.430.600	Web GIS	
AS.430.601	Geographic Information Systems (GIS)	
AS.430.603	Geospatial Statistics	
AS.430.604	Spatial Analytics	
AS.430.606	Programming in GIS	
Electives		
Select six of the following:		18
AS.430.602	Remote Sensing: Systems and Applications	
AS.430.607	Spatial Databases and Data Interoperability	
AS.430.609	Spatial Data Management: Quality and Control	
AS.430.610	GIS for Infrastructure Management	
AS.430.612	Cartographic Design and Visualization	
AS.430.615	Big Data Analytics: Tools and Techniques	
AS.430.617	Census Data Mining: Visualization and Analytics	
AS.430.619	Web Application Development	
AS.430.621	GIS for Emergency Management	
AS.430.627	Artificial Intelligence and Machine Learning in Geospatial Technology	
AS.430.629	Drones in Geospatial Decision Making	
AS.430.631	Spatial Algorithms and Data Structures	

AS.430.635	Urban Analytics	
AS.430.637	Statistical Computation and R Programming in Spatial Sciences	
Total Credits		**30-32**