

# GEOSPATIAL ANALYSIS AND MAPPING

The Geospatial Analysis and Mapping (GAM) Program at the University of Michigan-Dearborn supports and promotes the application of geospatial technologies in education, research, and community service.

Place-based technologies are ubiquitous, from location services on Smartphones to spatial-decision support systems that guide applications in business, government, utilities & communication, natural resources, public safety, transportation, education, health & human services, and even digital humanities. It is not hard to see how place influences your particular area of study or practice! Because of the broad array of geospatial technology across a variety of disciplines and fields, people from diverse backgrounds and interests can benefit from gaining experience in GIS and Remote Sensing.

The courses required for the program are "hands-on", balancing the development of skill and confidence with the knowledge to solve complex spatial and temporal problems. Most of the courses are project-based, where students use GIS, or develop tools, to solve real world problems; thus, when finished, students have a portfolio of deliverables that reflect newly acquired technical and critical thinking skills.

The GAM Certificate provides students with the experience and knowledge in the theory and application of GIS and remote sensing. Students learn the basic components of GIS and spatial data, understand problems that arise in the data acquisition and analysis and develop a sound background in cartographic principles. Many students could increase their marketability with a GAM certificate. This includes (but is not limited to) careers in public health, criminal justice, sociology, economics, social and natural science education, computer engineering, Earth and environmental science or studies, urban and regional studies, and anthropology/archaeology.

Most courses are offered in the evening, such that non-degree seeking students can attend; several are also hybrid in design with online lecture and laboratory sessions on campus.

Students of any UM-Dearborn major with a GPA of 2.5 or higher can apply for this program. Non-degree seeking postgraduates must apply through the CASL Campus Option Program.

## Our Alumni

Students who have participated in this program have received internships/employment at Michigan Department of Transportation (MDOT), Michigan Tech Research Institute, numerous consulting firms (i.e. FTC&H), municipalities (i.e. Livonia, Novi), and private organizations.

Additionally, several graduates have continued their GIS education in reputable postgraduate programs throughout the U.S.

## Contact us

Please visit the GAM webpage or contact the GAM Program Director with any questions:

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## Certificate Requirements

Code	Title	Credit Hours
<b>Core Courses (10 credit hours):</b>		
GEOL/ESCI/ GEOG 305	Intro to GIS (Tier I)	4
GEOL 440	Advanced GIS Applications (Tier II)	3
Independent Study/Research/Internship - 3 credit hours of 498/499 Independent Study or Directed Research or Geospatial Internship with Program Director approval required by Petition.(Tier III) <sup>1,2</sup>		3
<b>Electives (6 credit hours):</b>		
Choose from any of the following:		6
GEOL 303	Geodesy & Cartog. Principles (Tier I)	
GEOL/ENST 340	Remote Sensing (Tier I)	
ESCI 485	Spatial Analysis (Tier II)	
GEOL 470	Geodatabase Design & Mgmt (Tier II)	
Total Credit Hours		16

<sup>1</sup> 498 (Independent Study) credits can be taken in any discipline but to count toward the certificate, it must be approved by GAM Program Director by Petition.

<sup>2</sup> 499 (Laboratory and Field Research) credits can be taken in any discipline but to count toward the certificate, it must be approved by GAM Program Director by Petition.

### NOTES:

1. A minimum of 2.5 cumulative GPA and sophomore standing are required for admission to the program.
2. A maximum of four credit hours of transfer coursework may be counted toward the minimum 16 credit hours required for the program by Petition to the Program Director.
3. A maximum of 6 credit hours of Independent Study, Directed Research or Geospatial Internship may be counted toward the program and must be approved by the Program Director, by Petition, prior to completion.
4. A minimum 2.0 GPA in the UM-Dearborn courses counting toward the GAM certificate is required at the time of graduation and/or posting of the certificate.