

## Geographic Information Science and Technology (GIST) Concentration Master of Science, Geography

The Geographic Information Science and Technology (GIST) concentration within the MS-Geography at the University of Massachusetts Amherst is an accelerated, one-year master's program designed to provide a solid foundation and applicable knowledge, skills, and practices in the field of geospatial technologies. Through rigorous coursework in Geographic Information Systems (GIS), remote sensing (RS), and spatial analysis, highly-motivated students and professionals who complete this degree will emerge from the program with applied experience and a broad GIS skillset applicable towards diverse professional opportunities. This MS concentration will provide students with a background in the science, techniques, and application of geospatial skills that will enable them to embark on public and private sector careers, or to undertake further studies in geography, planning, public policy, ecology, environmental science and other fields.

In this one-year concentration, students will take courses in both the Fall and Spring semesters and complete a summer internship after coursework is complete. More details about program requirements are in the 'Curriculum Overview' on the reverse of this sheet.

**Application Requirements:** The deadline for applications is February 1<sup>st</sup>, 2020. Interested applicants should complete the application form on the University of Massachusetts Amherst graduate school webpage: <http://www.umass.edu/gradschool/admissions>.

Students applying for this degree must hold a baccalaureate degree earned in the United States or a comparable non-U.S. degree/diploma, and include with their application:

- A personal statement;
- All college/university transcripts;
- Two letters of recommendation;
- An application fee of \$75 (waived for undergraduates currently enrolled at UMass)

Students applying from outside of the United States may be required to submit TOEFL scores as well. GRE scores are optional for this degree track.

**Credit Transfers:** Up to six credits from previous coursework at UMass and/or six credits from another accredited institution, may be transferred and applied to this degree, as long as those credits (1) were not used for any previous degree, (2) are appropriate to fulfill the MS degree requirements, and (3) conform to the Graduate School's regulations (see <http://www.umass.edu/gradschool/current-students/graduate-student-handbook/2-educational-records#Transfer%20Credit>).

**Financial Details:** The approximate tuition cost of the year-long program for Massachusetts' residents<sup>1</sup> is approximately \$18,000 for 30 credit hours (~\$17,000) plus mandatory fees (~\$1,000). Students without health insurance would need to pay an additional ~\$2,900 for health coverage. See the Graduate Student Fee Schedule: <http://www.umass.edu/gradschool/funding-support/graduate-assistantship-office>. Students in this one-year, intensive program are not eligible for department teaching assistantships, but are eligible for other campus support.

**Contact Information:** For more information, please contact **Forrest J. Bowlick** at [fbowlick@umass.edu](mailto:fbowlick@umass.edu)

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<sup>1</sup> For credit hours and mandatory fees, out-of-state residents pay ~\$36,000.

## **GIST Concentration in MS Geography Curriculum Overview**

The coursework in the GIST concentration in MS Geography is structured with four areas of emphasis. To fulfill the course requirements, you will complete 30 hours of credits while satisfying all requirements listed below. Please refer to the UMass catalog for more details on these courses.

### **I. Required Core Courses (4 courses required, 12 credits)**

These courses establish fundamental concepts, theory, and practice in GIS. These core courses are all required in this concentration.

<b>Course Number</b>	<b>Course Title and Description</b>	<b>Term</b>	<b>Credits</b>
GEOGRAPH 604	Geographic Theory and Analysis – Module 1	Fall	1
GEOGRAPH 593G	Introduction to GIS	Fall	4
GEOGRAPH 626	Remote Sensing and Image Interpretation	Fall	4
GEOGRAPH 668	GIS and Spatial Analysis	Spring	3

### **II. Core Course Electives (2 courses required, 6 credits)**

These courses explore technical aspects of GIS, with focuses on growing areas of emphasis in GIS practice. Two of the following three core course electives are required in this concentration.

<b>Course Number</b>	<b>Course Title and Description</b>	<b>Term</b>	<b>Credits</b>
GEOGRAPH 693W	Web-Based GIS	Spring	3
ECO 697DD	Spatial Database Management	Fall	3
ECO 697K	Programming in GIS	Spring	3

### **III. GIST Applications Electives (2 courses required, 6 credits)**

These courses allow topical explorations of GIS concepts with a focus on application. Two courses of applications electives are required in this concentration. Other courses may be used in this section with permission of the program director.

<b>Course Number</b>	<b>Course Title and Description</b>	<b>Term</b>	<b>Credits</b>
ECO 690A	Cartographic Design	Fall	2
ECO 602/634	Analysis of Environmental Data (+ optional lab)	Fall	3+2
SPP 597T	Information Technology for Public and Nonprofits	Fall (planned)	3
GEOGRAPH 693A	Cartography and Geovisualization	Spring	3
GEOGRAPH 693S	Spatial Decision Making and Support	Spring	3
SPP 597B	Unmanned Aircraft Systems	Spring	3
ECO 697DR	Spatial Statistics and Data Analysis in R	Spring	3

### **IV. Practicum/Internship (1 course required, 6 credits)**

This concentration expects students to secure and complete a 180-hour practicum or internship. Most students will enroll in the course in the spring and complete the practicum or internship in the summer.