CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS, M.S.


Information about facilities, supporting faculty and staff, and program requirements for all graduate programs in the department can be found in the Geography (http://guide.wisc.edu/graduate/geography) listing in this catalog.

The M.S. in cartography and geographic information systems provides a broad foundation in the theory and application of mapping and geographic information sciences. Students who earn the M.S. degree are prepared to continue on for the Ph.D. in geography (thesis students), or for positions as GIS analysts in government agencies, planning organizations, environmental agencies, nongovernmental organizations, and private industry.

ADMISSIONS

The Graduate School sets minimum requirements for admissions (https://grad.wisc.edu/admissions/requirements). Academic program admission requirements are often more rigorous than those set by the Graduate School.

Please check the program’s website (https://geography.wisc.edu/graduate-application-process) for details on how to apply. The application deadline is December 15. Note: there are no spring/summer admissions.

GRADUATE SCHOOL ADMISSIONS

Graduate admissions is a two-step process between academic degree programs and the Graduate School. Applicants must meet requirements of both the program(s) and the Graduate School. Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/admissions).

FUNDING

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding) is available from the Graduate School. Be sure to check with your program for individual policies and processes related to funding.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

MAJOR REQUIREMENTS

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Mode of Instruction</th>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

**Evening/Weekend:** These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

**Online:** These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules. Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

**Hybrid:** These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

**Accelerated:** These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

CURRICULAR REQUIREMENTS

Minimum Credit Requirement 30 credits

Minimum Residence Credit Requirement 16 credits

Minimum Graduate Coursework Requirement Half of degree coursework (15 credits out of 30 total credits) must be completed graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university’s Course Guide.

Overall Graduate GPA Requirement 3.00 GPA required.
Other Grade Requirements: The Graduate School requires an average grade of B or better in all coursework (300 or above, not including research credits) taken as a graduate student unless conditions for probationary status require higher grades. Grades of Incomplete are considered to be unsatisfactory if they are not removed during the next enrolled semester.

Assessments and Examinations: A formal thesis is required.

Language Requirements: No language requirement.

REQUIRED COURSES

Most students complete the coursework for breadth requirements prior to entering the program. Students who begin the program lacking one or more of the breadth courses are expected to complete such coursework during the master’s program. One course taken for breadth can also be used to fulfill degree requirements. Typically, these courses are not seminars. Students must complete the equivalent of one under graduate-level course in quantitative methods, two courses in mathematics, and two intermediate or advanced geography courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 765 &amp; GEOG 766</td>
<td>Geographical Inquiry and Analysis: An Introduction and Geographical Inquiry and Analysis: Techniques</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 370</td>
<td>Introduction to Cartography</td>
<td>4</td>
</tr>
<tr>
<td>GEOG/CIV ENGR/ENVIR ST 377</td>
<td>An Introduction to Geographic Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 378</td>
<td>Introduction to Geocomputing</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 970</td>
<td>Seminar in Geographic Information Science</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Select two of the following: 6-8

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 572</td>
<td>Graphic Design in Cartography</td>
<td></td>
</tr>
<tr>
<td>GEOG 574</td>
<td>Geospatial Database Design and Development</td>
<td></td>
</tr>
<tr>
<td>GEOG 575</td>
<td>Interactive Cartography &amp; Geovisualization</td>
<td></td>
</tr>
<tr>
<td>GEOG 576</td>
<td>Geospatial Web and Mobile Programming</td>
<td></td>
</tr>
<tr>
<td>GEOG 577</td>
<td>Environmental Modeling with GIS</td>
<td></td>
</tr>
<tr>
<td>GEOG 578</td>
<td>GIS Applications</td>
<td></td>
</tr>
<tr>
<td>GEOG 579</td>
<td>GIS and Spatial Analysis</td>
<td></td>
</tr>
</tbody>
</table>

NAMED OPTIONS (SUB-MAJORS)

A named option is a formally documented sub-major within an academic major program. Named options appear on the transcript with degree conferral.


GRADUATE SCHOOL POLICIES

The Graduate School’s Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

MAJOR-SPECIFIC POLICIES

GRADUATE PROGRAM HANDBOOK


PRIOR COURSEWORK

Graduate Work from Other Institutions

With program approval, students are allowed to count no more than 6 credits of graduate coursework from other institutions. Coursework earned five or more years prior to admission to a master’s degree or earned ten years or more prior to admission to a doctoral degree is not allowed to satisfy requirements.

UW–Madison Undergraduate

No credits from a UW–Madison undergraduate degree are allowed to count toward the degree.

UW–Madison University Special

With program approval, students are allowed to count no more than 6 credits of graduate coursework as defined above taken as a UW–Madison Special student. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.

PROBATION

The Department of Geography expects graduate students to progress through a sequence of benchmarks within prescribed time periods. These benchmarks constitute a reasonable rate of accomplishment for full-time students holding teaching or research appointments. The department recognizes that individual circumstances vary, and not all students progressing toward their academic goals will hit the benchmarks exactly. Thus a student’s progress is considered unsatisfactory only after a period of time elapses following an unmet benchmark. A student not making satisfactory progress is placed on probation. For detailed information about these benchmarks and triggers for probationary status, please see the department’s Criteria for Satisfactory Progress (https://geography.wisc.edu/wp-content/uploads/2018/09/Graduate-Student-Handbook-Version-18-19-August-2018.pdf).

ADVISOR / COMMITTEE

The chair (or co-chair) of a Masters student’s Committee is the student’s Advisor. This individual must be graduate faculty in
Geography or affiliated with Geography. The committee must have at least 3 members, two of whom must be graduate faculty (or former graduate faculty up to one year after resignation/retirement). Two of the three members must be affiliated with the Geography Department. The third member may be a qualified individual from within or outside UW-Madison. Inclusion of committee members who are not UW-Madison graduate faculty must be approved by the student’s Advisor.

CREDITS PER TERM ALLOWED
15 credits

TIME CONSTRAINTS
For program-specific time constraints, please see Probation Policy above.

OTHER
We consider all applicants to the M.S. for multi-year guaranteed funding packages. This funding, however, is not plentiful and it is competitive. Decisions about funding are typically made by late February. Students in the GIS Development and Accelerated/Non-Thesis named options are not permitted to accept graduate assistantships or other appointments that would result in a tuition waiver and cannot enroll in other graduate programs nor take courses outside the prescribed curriculum.

PROFESSIONAL DEVELOPMENT

GRADUATE SCHOOL RESOURCES
Take advantage of the Graduate School’s professional development resources (https://grad.wisc.edu/pd) to build skills, thrive academically, and launch your career.

LEARNING OUTCOMES
1. Articulates, critiques, or elaborates the theories, research methods, and approaches to inquiry or schools of practice in cartography and GIScience.

2. Identifies sources and assembles evidence pertaining to questions or challenges in cartography/GIScience.

3. Demonstrates understanding of cartography/GIScience in a historical, social, or global context.

4. Selects and/or utilizes the most appropriate methodologies and practices.

5. Evaluates or synthesizes information pertaining to questions or challenges in cartography/GIScience.

6. Communicates clearly in ways appropriate to cartography/GIScience.

7. Recognizes and applies principles of ethical and professional conduct.

PEOPLE
Faculty: Professors Naughton (chair), Cadwallader, Cronon, Kaiser, Mason, Naughton, Olds, Turner, Williams, Zhu; Associate Professors: Baird, Gibbs, Marin-Spiotta, Robertson, Roth, Woodward; Assistant Professors: Gao, Huang, Keefover-Ring, Loyd, Moore, Young