

CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS: THESIS, M.S.

This is a named option within the Cartographic and Geographic Information Systems M.S. (<http://guide.wisc.edu/graduate/geography/cartography-geographic-information-systems-ms/>)

The Department of Geography offers a thesis-based master of science in Cartography and Geographic Information Systems, titled Thesis (p. 1). In addition, it offers two professional non-thesis options in the Cartography and Geographic Information Systems M.S. titled: GIS Development (<http://guide.wisc.edu/graduate/geography/cartography-geographic-information-systems-ms/cartography-geographic-information-systems-gis-development-ms/#text>) (online program) and Accelerated/ Non-Thesis ([http://guide.wisc.edu/graduate/geography/cartography-geographic-information-systems-accelerated-non-thesis-ms/#text](http://guide.wisc.edu/graduate/geography/cartography-geographic-information-systems-ms/cartography-geographic-information-systems-accelerated-non-thesis-ms/#text)) (in-residence program).

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. (Thesis) 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. (Thesis) degree are prepared to continue on for the Ph.D. in geography or for positions in government agencies, planning organizations, environmental agencies, nongovernmental organizations, and private industry.

ADMISSIONS

Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website. Graduate admissions is a two-step process between academic programs and the Graduate School. **Applicants must meet** the minimum requirements (<https://grad.wisc.edu/apply/requirements/>) **of the Graduate School as well as the program(s)**. Once you have researched the graduate program(s) you are interested in, apply online (<https://grad.wisc.edu/apply/>).

Requirements	Detail
Fall Deadline	December 15
Spring Deadline	The program does not admit in the spring.
Summer Deadline	The program does not admit in the summer.
GRE (Graduate Record Examinations)	Required.
English Proficiency Test	Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (https://grad.wisc.edu/apply/requirements/#english-proficiency).

Other Test(s) (e.g., GMAT, MCAT)	n/a
Letters of Recommendation Required	3

Please see the Geography Department website for admissions requirements: geography.wisc.edu.

FUNDING

GRADUATE SCHOOL RESOURCES

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 restrictions related to funding.

PROGRAM RESOURCES

The department tries to provide support to all incoming graduate students in the form of fellowships, teaching assistantships, or research assistantships. Most forms of financial assistance include eligibility for health insurance coverage and remission of tuition.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

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

NAMED OPTION REQUIREMENTS

MODE OF INSTRUCTION

Face to Face	Evening/Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	No

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

Requirements Detail	
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 undergraduate-level course in quantitative methods, two courses in mathematics, and two intermediate or advanced geography courses.

Code	Title	Credits
Required		
GEOG 765 & GEOG 766	Geographical Inquiry and Analysis: An Introduction and Geographical Inquiry and Analysis: Techniques	4
GEOG 370	Introduction to Cartography	4
GEOG/CIV ENGR/ ENVIR ST 377	An Introduction to Geographic Information Systems	4
GEOG 378	Introduction to Geocomputing	4
GEOG 970	Seminar in Geographic Information Science	1-3
Select two of the following:		6-8
GEOG 572	Graphic Design in Cartography	

GEOG 573	Advanced Geocomputing and Geospatial Big Data Analytics
GEOG 574	Geospatial Database Design and Development
GEOG 575	Interactive Cartography & Geovisualization
GEOG 576	Geospatial Web and Mobile Programming
GEOG 577	Environmental Modeling with GIS
GEOG 578	GIS Applications
GEOG 579	GIS and Spatial Analysis

POLICIES

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.

NAMED OPTION-SPECIFIC POLICIES

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 Master's 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 three 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.

GRIEVANCES AND APPEALS

These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (<https://doso.students.wisc.edu/bias-or-hate-reporting/>)
- Graduate Assistantship Policies and Procedures (<https://hr.wisc.edu/policies/gapp/#grievance-procedure>)
- Hostile and Intimidating Behavior Policies and Procedures (<https://hr.wisc.edu/hib/>)
 - Office of the Provost for Faculty and Staff Affairs (<https://facstaff.provost.wisc.edu/>)
- Dean of Students Office (<https://doso.students.wisc.edu/>) (for all students to seek grievance assistance and support)
- Employee Assistance (<http://www.eao.wisc.edu/>) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
- Employee Disability Resource Office (<https://employeedisabilities.wisc.edu/>) (for qualified employees or applicants with disabilities to have equal employment opportunities)
- Graduate School (<https://grad.wisc.edu/>) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
- Office of Compliance (<https://compliance.wisc.edu/>) (for class harassment and discrimination, including sexual harassment and sexual violence)
- Office of Student Conduct and Community Standards (<https://conduct.students.wisc.edu/>) (for conflicts involving students)
- Ombuds Office for Faculty and Staff (<http://www.ombuds.wisc.edu/>) (for employed graduate students and post-docs, as well as faculty and staff)
- Title IX (<https://compliance.wisc.edu/titleix/>) (for concerns about discrimination)

Students should contact the department chair or program director with questions about grievances.

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.

PEOPLE

Faculty:

Department Chair: Joseph Mason

Professors: William Cronon, Robert Kaiser, Erika Marin-Spiotta, Joseph Mason, Lisa Naughton, Kristopher Olds, Matthew Turner, John (Jack) Williams, A-Xing Zhu

Associate Professors: Ian Baird, Holly Gibbs, Asligül Göçmen, Qunying Huang, Sarah Moore, Morgan Robertson, Robert Roth, Keith Woodward, Stephen Young

Assistant Professors: Christian Andresen, Song Gao, Ken Keefover-Ring, Jenna Loyd, Almita Miranda