

CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS: THESIS, MS

This is a named option within the Cartographic and Geographic Information Systems MS (<https://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 MS titled: GIS Development (<https://guide.wisc.edu/graduate/geography/cartography-geographic-information-systems-gis-development-ms/#text>) (online program) and Accelerated/ Non-Thesis (<https://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 (<https://guide.wisc.edu/graduate/geography/>) listing in this catalog.

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

ADMISSIONS

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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)	Not required.

English Proficiency Test Refer to the Graduate School: Minimum Requirements for Admission policy: <https://policy.wisc.edu/library/UW-1241> (<https://policy.wisc.edu/library/UW-1241/>).

Other Test(s) (e.g., GMAT, MCAT) n/a

Letters of Recommendation Required 3

BREADTH REQUIREMENTS

This program requires students to have taken coursework in several areas of Cartography to show breadth of knowledge in the field. Most admitted applicants have completed the coursework for the breadth requirements prior to entering the program. Typically, these courses are not seminars. Applicants must have completed the equivalent of one undergraduate-level course in quantitative methods, two courses in mathematics, and two intermediate or advanced geography courses. Admitted applicants 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.

GRADUATE SCHOOL APPLICATION

If your primary sub-area specialization is Earth Systems Geography, Human Geography or People/Environment Geography, you will need to apply to the Geography MS.

Refer to the following links:

- Consult the Graduate School Admissions website (<https://grad.wisc.edu/apply/>) for information about applying to the UW-Madison Graduate School, including general admissions requirements (<https://grad.wisc.edu/apply/requirements/>).
- Consult the Geography Department website (<https://geography.wisc.edu/research-graduate-programs/prospective-graduate-students/>) for additional information about the program and the application process.

Materials

Upload the following to the online application:

- Three letters of recommendation (<https://grad.wisc.edu/apply/#FAQ>). Once you have entered the recommenders information in the application, each recommender will receive an electronic invitation to submit a letter through the application system. Be sure to contact each recommender ahead of time to let them know that they will be receiving a request for a letter of recommendation from the application system.
- Statement of purpose. For more information, check out our guidelines for writing a statement of purpose on our prospective student site (<https://geography.wisc.edu/research-graduate-programs/prospective-graduate-students/#admissions-and-application-information>).
- CV
- Unofficial transcripts
- International degree-seeking applicants will need to demonstrate English proficiency. See the Graduate School requirements (<https://grad.wisc.edu/apply/requirements/>) for specific information.
- The online application to the Cartography/GIS MS-Thesis program includes a "supplemental application" in which you are asked to identify faculty with whom you wish to work.

- Submit the online Graduate School Application for Admission (<https://grad.wisc.edu/apply/>) and pay the application fee.

FUNDING

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GRADUATE SCHOOL RESOURCES

The Bursar's Office provides information about tuition and fees associated with being a graduate student. Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information is available from the Graduate School.

Be sure to check with your program for individual policies and restrictions related to funding.

PROGRAM RESOURCES

See "How Does Funding Work?" at the Geography Master's FAQ (<https://geography.wisc.edu/graduate/graduate-programs-faq/>).

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum degree requirements (<https://guide.wisc.edu/graduate/#requirements-text>) and policies (<https://guide.wisc.edu/graduate/#policies-text>), 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

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

Evening/Weekend: Courses meet on the UW-Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

Face-to-Face: Courses typically meet during weekdays on the UW-Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirement Detail

Minimum 30 credits
Credit Requirement

Minimum Residence Credit Requirement	16 credits
Minimum Graduate Coursework Requirement	15 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement policy: https://policy.wisc.edu/library/UW-1244 (https://policy.wisc.edu/library/UW-1244/).
Overall Graduate GPA Requirement	3.00 GPA required. Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: https://policy.wisc.edu/library/UW-1203 (https://policy.wisc.edu/library/UW-1203/).
Other Grade Requirements	n/a
Assessments and Examinations	A formal thesis is required.
Language Requirements	No language requirement.

REQUIRED COURSES

Code	Title	Credits
Core		
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
Electives		
Select two of the following:		7
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 578	GIS Applications	
GEOG 579	GIS and Spatial Analysis	
Additional Coursework		
Students take courses numbered 300 and up in consultation with their advisor to meet the 30 credit minimum.		4
Total Credits		30

¹ GEOG 970 must be taken for 3 credits.

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (<https://grad.wisc.edu/acadpolicy/>) serve as the official document of record for Graduate School academic and administrative policies and procedures and are updated continuously. Note some policies redirect to entries in the official UW-Madison Policy Library (<https://policy.wisc.edu/>). Programs may set more stringent policies than the Graduate School. Policies set by the academic degree program can be found below.

NAMED OPTION-SPECIFIC POLICIES

PRIOR COURSEWORK

Graduate Credits Earned at Other Institutions

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

Undergraduate Credits Earned at Other Institutions or UW-Madison

No credits from an undergraduate degree are allowed to transfer toward the degree.

Credits Earned as a Professional Student at UW-Madison (Law, Medicine, Pharmacy, and Veterinary careers)

Refer to the Graduate School: Transfer Credits for Prior Coursework (<https://policy.wisc.edu/library/UW-1216/>) policy.

Credits Earned as a University Special Student at UW-Madison

With program approval, students are allowed to transfer no more than 6 credits of graduate coursework as defined above taken as a University Special student. Coursework earned ten 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/research-graduate-programs/current-graduate-students/>).

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 credit maximum. Refer to the Graduate School: Maximum Credit Loads and Overload Requests (<https://policy.wisc.edu/library/UW-1228/>) policy.

TIME LIMITS

Refer to the Graduate School: Time Limits (<https://policy.wisc.edu/library/UW-1221/>) policy.

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/>)
- 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://employeeabilities.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 Student Assistance and Support (OSAS) (<https://osas.wisc.edu/>) (for all students to seek grievance assistance and support)
- 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)

L&S POLICY FOR GRADUATE STUDENT ACADEMIC APPEALS

Graduate students have the right to appeal an academic decision related to an L&S graduate program if the student believes that the decision is inconsistent with published policy.

Academic decisions that may be appealed include:

- Dismissal from the graduate program
- Failure to pass a qualifying or preliminary examination
- Failure to achieve satisfactory academic progress

- Academic disciplinary action related to failure to meet professional conduct standards

Issues such as the following cannot be appealed using this process:

- A faculty member declining to serve as a graduate student's advisor.
- Decisions regarding the student's disciplinary knowledge, evaluation of the quality of work, or similar judgements. These are the domain of the department faculty.
- Course grades. These can be appealed instead using the L&S Policy for Grade Appeal (<https://kb.wisc.edu/lis/22258/>).
- Incidents of bias or hate, hostile and intimidating behavior (<https://hr.wisc.edu/hib/>), or discrimination (Title IX (<https://compliance.wisc.edu/titleix/>), Office of Compliance (<https://compliance.wisc.edu/eo-complaint/formal-investigations/>)). Direct these to the linked campus offices appropriate for the incident(s).

Appeal Process for Graduate Students

A graduate student wishing to appeal an academic decision must follow the process in the order listed below. Note time limits within each step.

1. The student should first seek informal resolution, if possible, by discussing the concern with their academic advisor, the department's Director of Graduate Studies, and/or the department chair.
2. If the program has an appeal policy listed in their graduate program handbook, the student should follow the policy as written, including adhering to any indicated deadlines. In the absence of a specific departmental process, the chair or designee will be the reviewer and decision maker, and the student should submit a written appeal to the chair within 15 business days of the academic decision. The chair or designee will notify the student in writing of their decision.
3. If the departmental process upholds the original decision, the graduate student may next initiate an appeal to L&S. To do so, the student must submit a written appeal to the L&S Assistant Dean for Graduate Student Academic Affairs within 15 business days of notification of the department's decision.
 - a. To the fullest extent possible, the written appeal should include, in a single document: a clear and concise statement of the academic decision being appealed, any relevant background on what led to the decision, the specific policies involved, the relief sought, any relevant documentation related to the departmental appeal, and the names and titles of any individuals contributing to or involved in the decision.
 - b. The Assistant Dean will work with the Academic Associate Dean of the appropriate division to consider the appeal. They may seek additional information and/or meetings related to the case.
 - c. The Assistant Dean and Academic Associate Dean will provide a written decision within 20 business days.
4. If L&S upholds the original decision, the graduate student may appeal to the Graduate School. More information can be found on their website: Grievances and Appeals (<https://grad.wisc.edu/documents/grievances-and-appeals/>) (see: Graduate School Appeal Process).

OTHER

n/a

PROFESSIONAL DEVELOPMENT

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.