Handbook for On-Campus, Research-based Master's and Doctoral Programs

August 2025

OVERVIEW

"The power and beauty of geography allow us to see, understand, and appreciate the web of relationships between people, places and environments."

Background

The University of Illinois at Urbana-Champaign is among the nation's most distinguished teaching and research institutions. The campus is the home of the second largest academic library in the United States and the largest map collection among public universities.

A national leader in the field of computer design and applications, the Urbana-Champaign campus also houses the National Center for Supercomputing Applications (NCSA) and is home to Blue Waters, a sustained-petaflop supercomputer. The campus serves approximately 43,000 students of whom about 10,000 are engaged in graduate work in more than 100 fields of study. An internationally recognized graduate faculty of approximately 3,000 members works closely with graduate students in their respective fields.

The Department of Geography and Geographic Information Science (GGIS), formerly the Department of Geography, has a long and distinguished history of world-class scholarship. For more than 50 years, the department has been consistently ranked one of the nation's top geography departments for its quality of research and instruction.

Research Areas

The department is currently organized around three core areas of specialization:

Space, Society, and the Built Environment
This program recognizes the dramatic growth in the size, number, and population of cities across the globe in the last ten years as the influence of cities across regions and nations deepens. This track examines the ever-evolving form, function, problems, and possibilities in these places. Empirical focus extends to cities and their relations as they operate in North America, the global north, and the global south.

Geographic Information Science
This area of specialization focuses on developing and utilizing geospatial data, methods and technologies for understanding a wide range of social and environmental issues. Areas of emphasis include Cyber-GIS, spatiotemporal GIS, satellite remote sensing, spatial analysis, qualitative GIS, and GIS and society.

River, Watershed, and Landscape Dynamics
Using state-of-the-art field and laboratory equipment, researchers tie together geomorphological, hydrological, and ecological processes and phenomena to advance understanding of rivers, watershed, and the landscapes affected by them.

Degree Programs

The Department of Geography & GIS offers three on-campus, research-based graduate programs:

- Master of Arts (MA)
- Master of Science (MS)
- Doctor of Philosophy (PhD)
  - For students entering with a bachelor's degree (Accelerated PhD)
  - For students entering with a master's degree

The Classification of Instructional Programs (CIP) Code for these degrees are:

MA: **45.0701 – Geography**
MS & PhD: **30.4401 – Geography and Environmental Studies**

The department also offers a non-thesis Professional Science Master's Degree (MS) and a fully online Master of Science in CyberGIS & Geospatial Data Science. This handbook **does not** cover or apply to these programs.

Financial Assistance

The department offers a wide range of financial support for graduate students in our Master's and PhD degree programs including teaching assistantships (TA), research assistantships (RA), and department and university fellowships, which are offered to admitted and continuing students based on the strength of their application, stated research or teaching interests, and continued positive performance.

Teaching Opportunities

Graduate students who specify college or university teaching as one of their primary career objectives are strongly encouraged to gain teaching experience by serving as a Teaching Assistant and/or by serving as course instructor. Before becoming a teaching assistant, all graduate students must complete the Center for Innovation in Teaching & Learning Graduate Academy, offered 1-2 weeks before each semester begins.

The department will make every effort to provide a primary teaching opportunity for doctoral students at least once during their program. Recommendations for teaching positions will be guided in part by the student's teaching record. In addition, the Center for Innovation in Teaching and Learning offers extensive workshops and seminars in professional development, as well as a teaching certificate.

Geography Graduate Student Association (GGSA)

All Geography & GIS graduate students are welcome to join and participate in this student-run organization responsible for planning several academic and social events, including a yearly invited colloquium speaker. Board elections are held each year. ggis.illinois.edu/geography-graduate-student-association

Graduate Student Policies

This **Geography & GIS handbook** outlines our department's degree programs, timelines, and expectations.

The ILLINOIS Graduate College Handbook contains policies, procedures, and rules that apply to **all graduate students** at the University of Illinois. Please refer to the Graduate College Handbook for rules and procedures for exams, registration, tuition waivers, expected graduation dates, petitions, and much more: grad.illinois.edu/handbooks-policies

Log into the Graduate Student portal to submit late registration forms, credit/no credit and in absentia requests, petitions, and other requests: go.grad.illinois.edu/student-portal

Academic Integrity

Responsible academic integrity and professional conduct are important for maintaining the high quality of research and education at the University of Illinois. The Illinois official statement on integrity in research and publication can be found at: vpaa.uillinois.edu/resources/integrity_in_research_and_publication

In addition, the School of Earth, Society, and Environment requires a Responsible Conduct of Research Training to be completed each year. Graduate students should also be aware of academic integrity and intellectual property policies: grad.illinois.edu/academics/thesis-dissertation/thesis-process/faq/copyright-faqs

Computer Policy

The Department of Geography & GIS **does not** provide graduate students with personal computers; however, graduate students can use the computer and connect to the shared printer in Room 1044 NHB. Computer hardware and software requirements for graduate research and coursework vary greatly across the discipline and by faculty advisors. Some faculty members may provide their advisees with computing resources. Please speak with your faculty advisor(s) about computing needs for your research.

SESE-GIS is a Windows Remote Desktop Host maintained by the School of Earth, Society, and Environment (SESE) IT group. All Geography & GIS faculty and graduate students are automatically eligible for an account on this machine, which can host large data sets and provides computational power and remote access to Windows software (MATLAB, ArcGIS, etc.). Please send software and IT help requests to sese-help@illinois.edu

Graduate students may keep personal computers in their departmental office but in general these personal computers will not be maintained or supported by our IT staff. Personal computers also are required to have up-to-date antivirus software and be compatible with existing university-wide computer networks. Computers with improperly licensed software are not permitted or supported. The department or university cannot be held responsible for any personal items.

Annual Review of Student Progress

Graduate student progress and accomplishments are reviewed annually to provide constructive feedback for students and their faculty advisors. Annual reviews of students will involve a two-step procedure. First, students will schedule a meeting with their advisor(s), discuss academic progress, and complete an online self-evaluation. The advisor will then respond by completing their portion of the online evaluation, available at my.atlas.illinois.edu/evaluations/

The student's advisor must inform the Director of Graduate Studies of any disagreement of opinion between the student and the advisor on the performance evaluation, proposed plan of action, or both. The Department Head or other faculty member will provide the second review if the student's advisor is the DGS. It is stressed that the primary purpose of this review is to provide positive feedback and discussion to assist the student in their progress towards graduation and other career goals. The review will also be used as the basis for appointment and funding decisions.

At the final faculty meeting of each academic year, Geography faculty will discuss their individual students' degree progress and share concerns about particular students, as needed.

Email Policy

Following the Graduate College policy, the @illinois.edu email address should be used for all University related correspondence. Department staff and the Director of Graduate Studies will only send e-mails to your **@illinois.edu** address once it is activated.

Deadlines

Students are responsible for their own registration and for ensuring the accuracy of their schedules. Students can check their registration online and print their schedules as needed. Students who find errors in their schedules should immediately correct these errors. Corrections must be completed before the deadline for adding or dropping a course as posted on the Graduate College website. Please bookmark the Graduate College Exam and Thesis Calendar in your browser: calendars.illinois.edu/list/3259

The Graduate College provides announcements concerning academic deadlines, fellowship opportunities, and workshops each week through GradLinks. These email announcements and departmental emails are sent to your Illinois email address.

Transfer of Credit

Please visit the Graduate College website for Transfer of Credit requirements: grad.illinois.edu/academics/curriculum-changes-and-transferring-credit

Master's Programs (Master of Arts / Master of Science)

The Department of Geography & Geographic Information Science awards the Master of Arts or Master of Science degree in Geography to those who successfully complete the Department's general MA/MS requirements and the requirements of one of the Department's areas of specialization-(Cities, Space, and Society; Geographic Information Science; River, Watershed, and Landscape Dynamics). In exceptional cases, a student may obtain a degree outside a normal program through separate agreement with an individual faculty member and approval of the Director of Graduate Studies.

The purpose of the Master's program is to provide a framework by which the candidate may obtain competence in at least one of the systematic branches of geography and support this with mastery of at least one primary research technique and a basic understanding of geographic information systems (GIS). Master's degree work incorporates formal class work, seminars, and research experience.

Admission to a Master's degree program is restricted to those applicants who have demonstrated high academic ability (a 'B' average is a generally accepted minimum requirement). A complete application requires: a completed online application; three letters of reference, official transcripts from each academic institution attended. Applicants are advised that the Admissions Committee carefully evaluates the student's statement of purpose.

Students whose native language is not English are required to meet the English Proficiency Requirements set by the Graduate College for admission. The policy for international teaching assistants can also be found on the Graduate College website at English Proficiency Requirement for International Teaching Assistants. Graduate College regulations preclude review of any application from a foreign student that does not include a TOEFL/IELTS score.

Geography Master's students who wish to continue in our PhD can either submit a Graduate College "Curriculum Change" petition; or prepare a new application if they wish to be eligible for Graduate College Illinois Distinguished or Equity Doctoral fellowships. Students must discuss these options with their advisor before proceeding.

Advising

Students enter the Master's program intending to work with a particular faculty member, and the faculty member serves as the student's advisor. The advisor, who must be a member of the Geography & Geographic Information Science graduate faculty, will aid the student in formulating a tentative degree program comprising the most appropriate courses according to the student's background, interests, and career objectives. The advisor and student should meet regularly to discuss progress and future plans. Effective communication between student and advisor are critical for Master's success. Either the student or the faculty advisor is free at any time to request a change in advising assignment.

At these meetings the student's career objectives and primary interests within the discipline and cognate fields will be reviewed, as well as any deficiencies and appropriate measures to overcome them. The advisor will assist the student in selecting courses for the first semester.

Master's Program Requirements

The Graduate College requires that at least 32 hours of course work be completed for a Master's degree. Twelve of the 32 hours must be in 500 level courses, and at least eight of these twelve must be in Geography

& Geographic Information Science. An overlapping requirement is that at least 16 400/500 level hours must be accumulated in Geography.

Master's Course Requirements:

1. GGIS 471: Modern Geographic Thought
   This course provides students with a review of the geographic methodologies and philosophies that have prevailed in recent decades, as well as those of the present. In addition, this course provides students with exposure to the research methodologies of a variety of departmental faculty members. It is strongly recommended that the student take this course in the first semester of study.

2. GGIS 491: Research Methods in Geography
   This course is designed to provide students with appropriate guidance in preparing and completing a research proposal in their area of interest, preferably one that they will then complete as part of their degree program. It is strongly recommended that the student take this course in the second semester of study.

3. GIS Requirement
   All Master's students are required to take at least one course on geographic information systems (GIS) and related geospatial techniques. Options include:

   - GGIS 439 Health Applications of GIS
   - GGIS 460 Aerial Photo Analysis
   - GGIS 473 Digital Cartography and Map Design
   - GGIS 476 Applied GIS to Environmental Studies
   - GGIS 477 Introduction to Remote Sensing
   - GGIS 478 Techniques of Remote Sensing
   - GGIS 479 Advanced Topics in GIS
   - GGIS 480 Principles of GIS
   - GGIS 489 Programming for GIS
   - Full course listing: catalog.illinois.edu/courses-of-instruction/GGIS/

Other graduate-level GIS courses may be applied to this requirement with the permission of the student's faculty advisor and the Director of Graduate Studies.

In addition to these formal requirements, the department holds a strong expectation that graduate students will attend the department and graduate student colloquium series on a regular basis. Such attendance is an important part of the student's professional development, and it is essential for maintaining the department as a vibrant intellectual community.

Each student must also fulfill the requirements specific to his/her specialty area (see statements beginning on Page 26). It is important to note that some areas of specialization (e.g., River, Watershed, and Landscape Dynamics) require a student to take the thesis option in completing their degree.

Independent Study

Once students are ready to begin independent research, they should discuss the specific research topic and number of credit hours with their faculty advisor and then complete a **GGIS 590: Independent Study** webform. After completing the webform, the student will forward the webform email confirmation to their advisor and register for their advisor's unique GGIS 590 CRN. Webform: go.illinois.edu/GGIS-590

The department requires all graduate students to maintain a 3.0 (B) average or better. All courses that are required, either by the department or by the student's area of specialization, must be passed with an A or B grade. For elective courses, the student's GPA must be at least 3.0.

Master's Research Paper Requirement:

Students are required to initiate and complete a research project and present the findings in a set of research papers or a thesis; completion is understood to mean production of an acceptable written thesis or papers. For students in the GIS and Cities, Space, and Society areas of specialization, this requirement may be fulfilled in one of the following ways:

a. Research Paper Option: Two (2) written research papers which address substantive research questions; these papers will be submitted formally to the examining committee prior to the oral examination. Such papers are typically derived from 500-level research seminars, independent study, planned summer field experience, or from an internship.

b. Thesis Option: Successful completion of a Master's thesis. A maximum of 8 semester hours of thesis research (GGIS 599) may be counted towards the Master's degree; the Master's thesis must be approved by a member of the Graduate Faculty.

The research papers or thesis must be presented in a style used by one of the major professional journals. Students in the River, Watershed, and Landscape Dynamics are required to submit a thesis. The student will be expected to answer questions about the research papers/thesis during the Master's examination.

Final Examination for Master's Degree

The student must have completed or must be enrolled in all courses needed for the degree and must have completed all other requirements before taking the Master's final examination.

The student and their advisor will select two additional faculty members to serve on the student's Advisory Committee. A majority of the committee must be GGIS faculty members.

The final examination for students taking the "Research Paper Option" (option a.) will consist of both oral and written segments, but it will be viewed as a single unit for purposes of evaluating the student's performance. The written portion will consist of approximately five questions assembled by the advisor: one on the student's research technique, one on geographic philosophy and methodology, and three on the student's area of specialization.

The methodology question will deal primarily with research approaches being used in the student's area of the discipline as illustrated by recent books and periodicals. Within two weeks after the written portion is completed, the oral portion will be given. The committee will examine the student to assess his/her ability in analytical thinking and general knowledge of the contemporary situation in the declared area of specialization. Students should not assume that their committee members will be willing to conduct an exam during the summer sessions or without adequate time to evaluate the thesis.

Students who complete a thesis (option b) are not required to undertake a final written examination. However, they are required to undertake an oral defense of their thesis. As a result of either final examination, the committee will award the student a grade of:

a. Pass; no major deficiencies. If taking the thesis option, the student is then responsible for meeting the Graduate College thesis deposit requirement.

b. Fail; remediable deficiencies. If there are remediable deficiencies the committee will identify them, specify the nature of the remedial work to be done, specify a deadline for its completion, and specify a set of criteria for its evaluation. Failure to meet these requirements will result in a "fail"; successful completion will result in a "pass."

c. Fail; major deficiencies. If deficiencies are serious enough that, in the committee's judgment, the student does not meet acceptable standards for a Master's degree from this department, a "fail" will result. In this case, the student may appeal through established procedures to the Department's Faculty Advisory Committee. The appeal will then be rejected or allowed. If allowed, the student will be re-examined orally by a new committee whose recommendation will be final.

NOTE: Whatever the outcome of the student's examination, the advisor is required to submit a written record of the examination result to the Graduate Contact, as well as copies of the examination questions and written answers if the research paper option was followed.

Elective Courses for Master's Program

Elective courses are selected with consent of the advisor. Note the following requirements and restrictions.

- You must complete at least 16 credit hours at the 400/500 level in geography. Usually this is met by GGIS 471, GGIS 491, a GIS course, and two 500 level GGIS courses.

- A maximum of 2 elective courses may be taken S/U or CR/NC (including a thesis).

- If you write a thesis, only 8 hours of GGIS 599 credit will apply towards the minimum 32 hours needed for the Master's degree. Additional GGIS 599 credit may be earned in the course of completing the thesis, but will not reduce the 400/500 level credit needed to complete the degree requirement below the minimum level of 24 hours. The Graduate College requires that the Master's thesis be approved by a member of the Graduate Faculty.

NOTE: This is an integration of university and departmental requirements and thus represents the minimum requirements. Students must meet the minimum requirements set by both the department and the Graduate College in order to obtain a degree.

The degree requirements for Master of Arts and Master of Science in Geography are available online at:

- catalog.illinois.edu/graduate/las/geography-MA/
- catalog.illinois.edu/graduate/las/geography-MS/

Summary of Master's degree requirements

Course requirements:

- GGIS 471: Modern Geographic Thought
- GGIS 491: Research in Geography
- One GIS class
- At least 12 credit hours at the 500 level, at least 8 of those hours in GGIS
- At least 32 total credit hours

Thesis option

- Prepare and defend a Master's thesis
- Independent research in your area
- Thesis committee: 3 faculty members, majority from GGIS

Exam option

- 2 research papers (may be seminar/class papers)
- Oral and written exams
- Exam committee: 3 faculty members, majority from GGIS

Master's Degree (MA or MS) Sample Timeline

Year 1	
Fall term	Coursework, including **GGIS 471 – Modern Geographic Thought**
	Meet regularly with advisor.
Spring term	Coursework, including **GGIS 491 -Research in Geography**
	Meet with faculty advisor to discuss Master's thesis or exam option.
	Thesis option: Identify topic and select thesis committee.

Year 2	
Fall	Coursework including **GGIS 590: Independent Study**
	Thesis option: • Conduct research and begin writing thesis. • Discuss deadlines and defense date with advisor.
	Exam option: • Identify two research papers for requirement. • Identify areas/topics for Master's exam. • Form exam committee.
Spring	Coursework, including **GGIS 590: Independent Study** Thesis option: Register for **GGIS 599: Thesis Research**
	Apply for graduation in Student Self-Service
	Register for Convocation and Commencement ceremonies as desired
	Thesis option: • Schedule thesis defense. • Defend thesis and make corrections as indicated by committee. • Submit thesis to department for format reviewer and make corrections as indicated. Current reviewer: Prof Tom Bassett, bassett@illinois.edu
	Exam option: • Discuss content of exam with advisor. • Schedule and take final exam.

*When planning courses, remember that you need:

- At least 32 credit hours
- One GIS class
- At least 12 hours at the 500 level, with at least 8 of those hours in Geography and Geographic Information Science (this can include GGIS 590 and 599)
- Satisfy any specific course requirements for your area of specialization.

Doctoral (PhD) Program

The PhD is a highly individualized degree program that emphasizes advanced training and research. Students develop and demonstrate both depth and breadth in geographical inquiry. They gain an understanding of the major epistemological and methodological questions that have shaped the development of geography as a discipline and master a set of research methods appropriate to their area of specialization.

Students acquire a detailed understanding of a particular sub-field of geography, conduct and disseminate independent research, and broaden their backgrounds through study in one or more allied disciplines. The program is intended to lead students into innovative research as demonstrated in research seminars, independent investigations, and the completion of a dissertation. The student's academic performance must be marked by initiative, intellectual integrity, a sense of problem identification, and critical acumen.

Admission to the PhD program is limited to those who have achieved distinction in previous undergraduate and graduate work (a 3.2 GPA on a 4-point scale is a generally accepted criterion) and who have demonstrated the determination and initiative required for doctoral success. Strong letters of recommendation are essential.

Students can enter the PhD program in two ways:
After earning a Bachelor's degree
After earning a Master's degree

Advising

Students enter the PhD program intending to work with a particular faculty member, and that faculty member serves as the student's faculty advisor. Students should meet with their faculty advisor at the time of arrival to review career objectives and primary interests within the discipline and cognate fields, as well as any deficiencies and appropriate measures to overcome them. The advisor will then assist with course selection for the first semester.

The advisor may be any member of the graduate faculty in the Department of Geography and Geographic Information Science (GGIS). Please see the Graduate College specifications for co-chair and co-research directors. The advisor and student should meet regularly to discuss progress and plans. Effective communications between student and advisor are critical for PhD success. Either the student or the faculty advisor is free at any time to request a change in advising assignment.

Late in the spring semester of the first year (third year for combined Master's + PhD students) the student and their advisor will select two additional faculty members to serve on the student's Departmental Exam Committee. The majority of the committee members must be faculty members of the Department of Geography and Geographic Information Science. The student, advisor, and other committee members will meet at the end of this semester and near the end of every semester thereafter (until the student graduates), each time discussing the student's progress with him/her and reporting that progress to the Graduate Committee through the advisor. Changes to the Departmental Exam Committee may be made at any time with approval of both the student and advisor.

All graduate students are required to maintain a 3.0 (B) or better G.P.A. and earn an A or B grade in all required courses. Although students consult regularly with their faculty advisor about progress and requirements, the primary responsibility for meeting Graduate College and departmental requirements, and for insuring good progress toward degree completion, lies with the student.

PhD Course Requirements

1. GGIS 471: Modern Geographic Thought
   Doctoral students are strongly recommended to take this course during their first semester, unless already taken as a Master's student.

2. GGIS 491: Research Methods in Geography
   This course examines geographic research design and methodology. It is designed to provide students with guidance in preparing and completing a research proposal in their area of interest, preferably one that they will then complete as part of their degree program. Students are strongly recommended to take this course in their second semester.

3. Methods Requirement
   All PhD students must take at least two graduate-level courses on analytical research methods from the following options:
   - GGIS 439 Health Applications of GIS
   - GGIS 460 Aerial Photo Analysis
   - GGIS 473 Digital Cartography & Map Design
   - GGIS 476 Applied GIS to Environmental Studies
   - GGIS 477 Introduction to Remote Sensing
   - GGIS 478 Techniques of Remote Sensing
   - GGIS 479 Advanced Topics in GIS
   - GGIS 480 Principles of GIS
   - GGIS 489 Programming for GIS
   - GGIS 570 Advanced Spatial Analysis
   - GGIS 587 Qualitative Research Methods
   - Full course listing: catalog.illinois.edu/courses-of-instruction/GGIS/

Other graduate-level methods courses offered in Geography & Geographic Information Science also count towards this requirement. Courses from other departments or taken in a Master's degree program may be applied to this requirement with the permission of the student's faculty advisor and the Director of Graduate Studies.

Building upon the methods requirement, doctoral students are required to demonstrate competence in a specific research technique. Techniques may include: a foreign language (to the level of passing the ETS reading examination); quantitative or qualitative methods; GIS; cartography or other alternatives from outside the department. The student's advisor is responsible for defining the appropriate level of competency required.

Independent Study

Once ready to begin independent research, students should discuss the specific research topic and number of credit hours with their faculty advisor and then complete a **GGIS 590: Independent Study** webform. After completing the webform, the student will forward the webform email confirmation to their advisor and register for their advisor's unique GGIS 590 CRN. Webform: go.illinois.edu/GGIS-590 (login required).

In addition to these formal requirements, the department requires that graduate students attend all department and graduate student colloquia. The department has a formal colloquium series with its talks regularly communicated to graduate students. Such attendance is an important part of the student's professional development, and it is essential in maintaining the department as a vibrant intellectual community.

PhD for Students Entering with a Bachelor's Degree

This degree program emphasizes academic, research and professional development tailored for the PhD degree so that students can move quickly into doctoral studies. A Master's degree, earned after completing certain requirements, is less emphasized than the PhD. The program is designed to take approximately 5 years, although the actual time to degree will vary. Alternatively, students with a Bachelor's Degree may wish to consider applying to the Master's program with a view to applying to the PhD program in their second year.

PhD Combined Requirements (General)

The Graduate College requires that at least 96 hours of graduate coursework be completed for the PhD. Graduate coursework is defined as courses at the 400-level or above. The program of study for the PhD for students entering the program with a Bachelor's degree has two distinct phases:

- The first two years are primarily devoted to coursework and completion of a research paper of publishable quality, which is reviewed by the student's Advisory Committee. Based on the research paper and the student's performance in the program, the committee decides whether the student is eligible to continue in the PhD program beyond the second year. At this stage, a student may be awarded a Master's Degree without being given permission to continue in the Geography PhD program.

- The second phase of the program involves completion of PhD requirements including additional course requirements, the Departmental Qualifying Evaluation, University Preliminary Exam, Final Examination (Dissertation Defense), and dissertation deposit.

Methods Requirement. All PhD students entering the program with a Bachelor's degree must take at least two graduate-level courses on analytical research methods from the options listed below. At least one of these courses must be in geographic information systems (GIS) or related geospatial techniques. Students may take a maximum of 8 credit hours of GGIS 590 for an S/U or CR/NC grade. Students are not permitted to take CR/NC or S/U grades within their declared program of specialization, or to use CR/NC or S/U grade courses to meet the minimum departmental requirement of two 500-level classes.

Doctoral Candidacy and Examinations

1. **Research Paper:** During the second year, the student will prepare, under the direction of his/her advisor, a research paper of publishable quality. The paper will be prepared in the format of a journal article and presented to the student's Advisory Committee for review and approval. The Advisory Committee will review the student's research paper and decide whether the student is eligible to continue in the PhD program. A copy of the research paper and a form signed by committee members describing the outcome of the research paper review will be submitted to the Graduate Contact and placed in the student's file. Students who successfully complete the research paper and have completed at least 32 credit hours of graduate coursework, including course requirements 1-4 above, will be awarded a Master's degree in Geography.

2. **Departmental Qualifying Evaluation:** After the successful completion of the research paper and permission to continue to the PhD program has been authorized by petition, the student, in consultation with their advisor, will form a Departmental Qualifying Evaluation Committee.

PhD Requirements continue on Page 20.

Summary and Timeline of Accelerated MA/MS + PhD degree requirements

Course requirements

- GGIS 471
- GGIS 491
- 2 methods classes, including one GIS class – see website for details
- At least 12 hours at the 500 level, at least 8 of those hours in Geography
- At least 96 total credit hours

Research Paper (4th semester)

- Research paper of publishable quality
- Present research paper to advisory committee
- Advisory committee consists of 3 faculty members, at least 2 from Geography.
    - Advisory committee decides if student is eligible to continue for PhD.

Departmental Qualifying Evaluation (6th semester)

- Oral and written components.
- Covers basic concepts, research methods, area of specialization.
- Evaluation committee: 3 faculty members, 2 from Geography

University Preliminary Exam (7th semester)

- Prepare dissertation proposal.
- Present proposal at departmental colloquium or graduate colloquium.
- Prelim exam involves a defense of the proposal.
- Request Prelim committee via Graduate College website:
    - https://grad.illinois.edu/thesis/submitting-doctoral-committee-requests
    - Committee: at least 4 members, 3 ILLINOIS Graduate Faculty, 2 tenured, and a majority from GGIS

Dissertation preparation and defense

- Original research and a substantial contribution to knowledge
- Well written and in an acceptable format

Final Examination

- Request Final Exam committee appointment via Graduate College: https://grad.illinois.edu/thesis/submitting-doctoral-committee-requests
- Students **must be registered** during the term they take the final exam (defense)
- Revise dissertation as indicated by committee during final defense.

Dissertation Deposit

- Students are **not required** to register during the term of deposit (if after the term of defense).
- Refer to Graduate College Thesis Format guidelines: https://grad.illinois.edu/thesis/format
- Upon approval of committee revisions, submit completed dissertation to Department Format Reviewer for final formatting check before depositing.

Official PhD requirements are also posted at: http://catalog.illinois.edu/graduate/las/geography-phd/#text

Accelerated Master's + PhD Program Sample Timeline

Year 1 -Accelerated PhD program	
Fall term	Coursework, including **GGIS 471 – Modern Geographic Thought**
Spring term	Coursework (discuss with advisor).
	Meet with advisor to discuss: • Research Paper • Departmental Qualifying Evaluation
	Form Departmental Advisory Committee: 3 faculty members, majority from GGIS

Year 2	
Fall	Coursework
	Research Paper: Conduct research and begin writing.
Spring	Coursework, incl. **GGIS 590 Independent Study**
	Research Paper: Complete and submit to Advisory Committee. • Upon approval, submit Graduate College petition to change program to PhD.
	Meet with advisor to discuss plans, reading lists, and departmental evaluation committee.

Year 3	
Fall	Coursework, incl. **GGIS 590 Independent Study**
	Discuss dissertation topics with advisor.
Spring	Coursework: **GGIS 491 – Research in Geography**
	Develop dissertation proposal in GGIS 491 and independently.
	Pass Qualifying Evaluation and form Dissertation Committee – 4 members, 3 tenured

Year 4	
Fall	Coursework, mainly **GGIS 590: Independent Study**
	Complete dissertation proposal.
	Present at GGIS Colloquium Series.
	Schedule Preliminary Exam and submit committee appointment request: grad.illinois.edu/academics/exams-committees
Spring	Register for **GGIS 599: Thesis Research** only
	Conduct dissertation research

Year 5 – Accelerated PhD program	
Fall	Register for **GGIS 599: Thesis Research** only.
	Dissertation research and writing.
	Meet regularly with advisor.
	Apply for jobs.
Spring	Register for **GGIS 599: Thesis Research** only
	Apply for graduation in Student Self-Service.
	Complete dissertation writing.
	Schedule Final Exam and submit committee appointment request: grad.illinois.edu/academics/exams-committees
	Revise dissertation as indicated by Final Exam committee.
	Submit dissertation to department format reviewer and make corrections as indicated Current reviewer: Prof. Tom Bassett, bassett@illinois.edu
	Register for Convocation and Commencement ceremonies as desired.
	Deposit dissertation.

*When planning courses, remember that you must:

- Earn at least 96 credit hours.
- Take two methods classes.
- Satisfy any specific course requirements for your area of specialization.

Professional development is also important:

- Gain teaching experience if you want to pursue a faculty job.
- Attend and present your research at conferences and around campus.
- Submit papers for publication.
- Network with colleagues in your field.

PhD for Students Entering with a Master's Degree

This program is designed to take approximately 3-4 years but actual time to degree will vary.

PhD Degree Requirements

The Graduate College requires that at least 64 hours of graduate coursework beyond the Master's degree be completed for the PhD degree. Graduate coursework is defined as courses at the 400-level or above.

Departmental Qualifying Evaluation

By the end of the third semester in residence (6th semester for combined Master's + PhD students), the student will complete a written and oral Departmental Qualifying Evaluation. This evaluation will be diagnostic and focus on the student's specific area(s) of research interest as well as their area of specialization within the program (e.g., GIScience; River, Watershed and Landscape Dynamics; Space, Society and the Built Environment). The written part of the evaluation will precede the oral part and a student must complete the GGIS Departmental Evaluation Request Form at least two weeks prior to engaging in the written part. The evaluation will cover the following areas of foci:

A. Basic concepts and literature in the area of specialization
B. Research methods currently used in the area of specialization
C. The student's area(s) of research interest within the area of specialization

The exact form of the written part of the evaluation will be determined by the student's advisor and may take the form of a traditional written exam with questions, a literature review, or other type of written product that addresses the areas of foci identified in a-c above. The advisor is responsible for gathering input from the student's PhD committee on the written form of the evaluation and for administering the written part of the evaluation. The written product will be circulated to the entire committee for review and specific components will be evaluated by appropriate committee members. After successful completion of the written part of the evaluation, an oral evaluation will be scheduled to further assess the student's abilities and progress. At least two faculty members must be physically present at the oral evaluation.

The possible outcomes of the evaluation are:

A. Pass; no deficiencies.

B. Pass, some remediable deficiencies. Committee will identify these deficiencies and specify the need for remedial work. The committee will specify the nature of remedial work to be done, the deadline for its completion, and the criteria for evaluation of this work. Successful evaluation of the remedial work must occur before the student can take the University Preliminary Exam.

C. Fail; major remediable deficiencies. Student will need to retake the evaluation to demonstrate that major deficiencies have been successfully addressed. If deficiencies are serious enough that, in the committee's judgment, the student has a low probability of succeeding in the PhD program, option D will be recommended.

D. Fail; serious deficiencies. Student will be dismissed from the PhD program but may appeal through established procedures.

Upon completion of the written and oral evaluations, the advisor must complete a GGIS Departmental Examination Results Form and place a copy of the written questions, written answers, and the committee's decision in the student's file. This requirement must be met for degree completion.

University Preliminary Exam and Dissertation Proposal

Upon completion of a successful departmental exam, a student in consultation with their advisor will form a Preliminary Exam Committee consisting of:

- At least 4 faculty members:
    - 3 must be Illinois Graduate Faculty members.
    - 2 must be tenured at Illinois.
    - A majority of the committee must be from GGIS.
    - Students may invite non-Illinois faculty members to their committee but must obtain their current CV and seek approval from the committee chair.

By the end of the fourth semester, the student will prepare a written dissertation proposal and distribute among committee members for comment.

Since exposure of one's ideas to the critical review of peers and faculty is an important learning experience, each PhD student is required to make a public presentation of his/her dissertation proposal at a graduate or departmental colloquium. One week in advance of the presentation, the title and abstract of the proposal will be submitted to the Graduate Contact and circulated to the GGIS community via email. A complete written version of the proposal will be given to the committee.

As soon as possible after the colloquium presentation, the student will take the oral *University Preliminary Examination*. The preliminary examination will be administered by a committee appointed by the Graduate College upon recommendation of the advisor and student with the concurrence of the Director of Graduate Studies or Department Head.

Students must be enrolled for the entire academic term in which the preliminary exam occurs and are responsible for requesting their Preliminary Exam committee requests. Please visit this page for full details and instructions: grad.illinois.edu/academics/exams-committees

The examination will focus primarily upon a defense of the dissertation proposal but may include questioning and discussion on the student's area of specialty. All voting members of the committee must be present in person or participate via teleconference or other electronic media during the examination, deliberation, and results determination of all oral components of the examination. Please visit the Graduate College Web site for acceptable exam format and procedures:
grad.illinois.edu/thesis/tips-conducting-exams-remotely

The exam outcome, determined by majority vote, may be:

- Admission to PhD candidacy;
- Admission to PhD candidacy denied pending removal of apparent deficiencies and re-examination; or
- Failure with a request that the student withdraw from the program.

Students who fail may retake the exam one additional time. The committee chair is responsible for convening the committee, conducting the examination, and obtaining the Preliminary Exam Result Form from the GGIS Graduate Contact, who will submit it to the Graduate College.

A student's failure to schedule the preliminary examination within five semesters of enrollment after entering the PhD program will subject his/her record to review by an evaluation committee. In this evaluation the committee may recommend actions to address deficiencies or withdrawal from the program.

Final Examination and Final Examination Committee

After the dissertation is provisionally accepted by the committee, the Final Examination (oral dissertation defense) is mandatory. Students must be enrolled for the entire academic term in which the Final Examination occurs and formally request their dissertation committee from the Graduate College. Committee membership rules are the same as for the Preliminary Committee (see top of Page 20) but the Dissertation Committee members do not necessarily have to be the same people as the Prelim Committee.

The defense result will be one of the following:

- Pass the candidate with no revisions required,
- Pass the candidate pending revision of the dissertation, or
- Fail the candidate.

If the student passes with one dissenting fail vote on the Final Examination Result form (FER), the dissenting member may, but is not required to sign the Thesis/Dissertation Approval. Students who fail may retake the exam one additional time.

The final examination committee is appointed by the Dean of the Graduate College, upon recommendation of the Head or DGS of GGIS. The student's thesis advisor (i.e. Director of Research) need not be the chair of the committee, but this individual must have an affiliate or adjunct appointment in GGIS and should maintain an active research program. The chair of the final examination committee *must* be a member of the Graduate Faculty and of GGIS.

As with the Preliminary Exam request, the student must submit a Final Exam Committee request directly to the Graduate College at least 2 weeks before the scheduled exam date.
grad.illinois.edu/academics/exams-committees

All voting members of the committee must be present in person or participate via teleconference or other electronic media during the final exam, deliberation, and results determination of all oral components of the examination. Please visit the Graduate College Web site for acceptable exam format and procedures:
grad.illinois.edu/thesis/tips-conducting-exams-remotely

In cases in which the student passed with one dissenting fail vote (excluding the Director of Research on the Final Examination Result (FER), the dissenting member may, but is not required to sign the Thesis/Dissertation Approval.

A copy of the completed dissertation must be submitted to the advisor at least four weeks prior to the scheduled oral defense of the document. The complete dissertation must also be submitted to the Committee at least two weeks in advance of the defense. In no case will a dissertation be accepted less than four weeks prior to the terminal date for PhD final examinations set by the Graduate College for each semester and summer session. The oral exam should be scheduled with close attention to the Graduate College deadlines. Students should not assume that their committee members will be willing to conduct an exam during the summer sessions or without adequate time to evaluate the dissertation.

Dissertation

The dissertation is based on original research and must be a substantial contribution to knowledge. The candidate is encouraged to review progress regularly with his/her committee (usually identical to the preliminary examination committee) and especially with his/her advisor. Candidates are encouraged to complete their dissertation in residence. It is the candidate's responsibility to comply with all Graduate College Thesis Format and Content Requirements at: grad.illinois.edu/thesis

Summary and Timeline of PhD Requirements (entering with a Master's degree)

Summary of Requirements

Course requirements

- GGIS 471: Modern Geographic Thought
- GGIS 491: Research in Geography
- 2 quantitative or qualitative methods classes. See course schedule for available options.
- At least 64 total credit hours

Departmental Qualifying Evaluation (3rd semester)

- Written and Oral components
- Covers basic concepts, research methods, area of specialization:
    - Exam committee: 3 faculty members, 2 from Geography & GIS

University Preliminary Exam (4th semester)

- Prepare dissertation proposal.
- Present proposal at a graduate or departmental colloquium.
- Prelim exam involves a defense of the proposal.
    - Committee: at least 4 faculty members, majority from GGIS, at least 2 tenured, chair must be Graduate Faculty

Dissertation preparation and defense

- Original research and a substantial contribution to knowledge
- Well-written and in an acceptable format

Final Examination

- Students must be registered during the term they take the final exam.
- Revise dissertation as indicated after exam.

Dissertation deposit

- Students are **not required to register** during the term they **deposit** (after completing final exam).
- Refer to Graduate College Thesis Format guidelines: grad.illinois.edu/thesis/format
- Upon approval of committee revisions, submit completed dissertation to Department Format Reviewer for final formatting check before depositing. (currently **Tom Bassett** – bassett6@gmail.com)

PhD Timeline for students entering with a Master's degree

(a very ambitious 3-year program)

Year 1 – PhD (entering with MA/MS)	
Fall term	Coursework, including **GGIS 471: Modern Geographic Thought**
	Meet regularly with faculty advisor.
Spring term	Coursework, including **GGIS 491 -Research in Geography** *Or take GGIS 491 later* if you need more time to develop a dissertation topic*
	Develop dissertation proposal.
	Meet with advisor to discuss departmental evaluation.
Year 2	
Fall	Coursework including **GGIS 590: Independent Study**
	Form departmental Qualifying evaluation committee.
	Refine dissertation proposal with advisor.
	Form Dissertation committee.
	Take departmental Qualifying Evaluation.
Spring	Coursework, incl. **GGIS 590 Independent Study (and GGIS 491*)**
	Present dissertation proposal at GGIS Colloquium.
	Schedule Preliminary Exam and Request Committee appointment: grad.illinois.edu/academics/exams-committees *You must be registered during the term you take the Preliminary Exam.*
Year 3	
Fall	Register for **GGIS 599: Thesis Research**
	Dissertation research and writing.
	Begin applying for jobs and attending conferences.
Spring	Register for **GGIS 599** only.
	Apply for graduation in Student Self-Service.
	Complete dissertation writing.
	Schedule defense and request Final Exam committee appointment: grad.illinois.edu/academics/exams-committees *You must be registered during the term you take the Final Exam.*
	Revise dissertation as indicated during final exam.
	Submit dissertation to department format reviewer and make corrections as indicated. Current reviewer: Prof. Tom Bassett, tombassett6@gmail.com
	Register for Convocation and Commencement ceremonies as desired
	Dissertation deposit: *You are **not** required to register for the term you deposit.* grad.illinois.edu/academics/thesis-dissertation/deposit-checklist

When planning coursework, remember that you need:

- At least 64 credit hours, including two methods classes.
- Satisfy any specific course requirements for your area of specialization.

Professional development is also very important:

- Gain teaching experience if you want to go into teaching.
- Attend and present your research at conferences and around campus.
- Submit papers for publication and network with colleagues in your field.

Department of Geography & Geographic Information Science
Areas of Research Specialization

Space, Society, and the Built Environment

ggis.illinois.edu/research/areas/space-society-built-environment

Statement

The Space, Society, and Built Environment program recognizes the dramatic growth in the size, number, and population of cities across the globe in the last ten years as the influence of cities across regions and nations deepens. This track examines the ever-evolving form, function, problems, and possibilities in these places. Empirical focus extends to cities and their relations as they operate in North America, the global north, and the global south. Scholarly work in this track rests on the belief that robust theory and incisive empiricism are equally important elements to deeply understanding the current nuances of cities, their processes, and their relations.

Research methods used in this track to advance understanding of cities and metropolitan regions embrace a diverse set of tools and techniques, centering around the synergistic strengths of qualitative, quantitative, and GIS applications. Qualitative techniques (including field observation, ethnographic analysis, open-ended interviewing, survey research, archival search, and discourse analysis), quantitative techniques (including descriptive and inferential statistics, spatial analysis, analytic modeling, social network analysis), and geographic information systems analysis are equally important approaches.

Faculty and students in this program also examine environmental and contextual effects on health, land use change, gender and environmental perceptions, politics of transportation infrastructure, and vulnerable urban populations.

Emphases

This specialization has five emphases, all of which are concerned with geographical change, conflict, and development in both historical and contemporary contexts:

Spatial access to health care

- Socio-spatial segregation and wellness
- Social justice and health care provision
- Neighborhoods and Health
- Environment and health

Urban Governance and Politics

- Regimes of power and city redevelopment
- Discourses of city growth and city redevelopment
- Urban economic development and politics
- City policing strategies and social justice
- New and emerging suburban socio-political trends
- Urban political ecology

Urban Physical and Social Transformation

- City spatial structure
- City gentrification
- Creative city making
- New patterns of segregation
- Race theory

Critical Studies of Urban Transportation and Mobilities

- New infrastructural provision
- Critical perspectives on infrastructure and economic development
- Mobilities of people and freight
- Accessibility for different social groups (by race, class, gender, ethnicity)

Globalization, Neoliberalism, and the City

- City-global economic relations
- Changing neoliberal political dynamics
- Politics of the local urban state
- Neoliberalism, ghettoization, and incarceration
- Cities and the global south

Master's Requirements

Students must meet all GGIS requirements for the Master's program, including GGIS 471, GGIS 491, and a GIS course. Students can pursue Thesis or Exam Option for the MA Degree. Thesis option may be required for entry into subsequent PhD programs.

PhD Requirements

Students must meet all GGIS requirements for the PhD in Geography including GGIS 471 and GGIS 491. Equivalent courses taken at previous institutions can meet this requirement. The dissertation must be within the advising competence of the faculty in the program and is expected to be an original contribution to the field and to involve the examination of geographic processes using appropriate research methodology.

Advanced Courses Offered in the Department

- GGIS 410: Green Development
- GGIS 412: Geospatial Technology and Society
- GGIS 438: Geography of Health Care
- GGIS 439: Health Applications of GIS
- GGIS 446: Sustainable Planning Seminar
- GGIS 465: Transportation and Sustainability
- GGIS 482: Challenges of Sustainability
- GGIS 483: Urban Geography
- GGIS 560: Spatial Epidemiology
- GGIS 570: Advanced Spatial Analysis
- GGIS 587: Qualitative Research Methods
- GGIS 594: Seminar in Social Geography: The Poststructuralist City
- GGIS 595: Seminar: Mobilities

Related Courses Offered in Other Departments

- AAS 479: Race, Medicine, and Society
- ANTH 557: Social Construction of Space
- ANTH 565: Race and Cultural Critique
- PS 415: Neighborhoods and Politics
- UP 406 : Urban Ecology
- UP 407: State and Local Public Finance
- UP 423: Introduction to International Planning
- UP 533: Community in American Society
- UP 535: Local Policy & Immigration
- UP 546: Land Use Policy and Planning
- UP 589: Research Design and Methods

Geographic Information Science (GIS)

ggis.illinois.edu/research/areas/geographic-information-science

Statement

Revolutionary changes are taking place in how we process, analyze, and model the enormous quantities of geographic information generated by satellites, mobile devices, sensor networks, and other geospatial technologies. The Geographic Information Science specialization examines the nature of digital geographic information, the geospatial tools and methods for analyzing and modeling such information, and the value of geographic information for understanding economic, environmental and social transformations at the local, regional, national and global scales.

We emphasize methodological training in GIScience as the foundation for using geographic information to understand these changes and for developing innovative new tools and technologies for analyzing and managing geospatial information in the decades to come. Students also gain a critical awareness of the roles of geographic information and GIScience in society and the strengths and limitations of GIScience tools and technologies.

Emphases

The Department of Geography and Geographic Information Science (GGIS) at the University of Illinois offers a graduate program leading to both the Master's and PhD degrees in Geography with a specialization in Geographic Information Science (GIScience). Students can focus on: (1) GIScience methods and theory in areas such as: geographic information systems, dynamic modeling, remote sensing, interregional modeling and spatial analysis; or (2) the application of GIScience methods in areas such as health, urban, physical, or environmental geography. Specific areas of emphasis include:

GIScience methods and development

a. space-time integration in GIScience
b. satellite remote sensing
c. CyberGIS
d. parallel and distributed computing
e. multi-scale and distributed GIS

Spatial Analysis

a. geospatial big data analytics
b. collection and analysis of GPS data
c. spatiotemporal modeling and analysis
d. agent-based modeling
e. geostatistical modeling and landscape analysis
f. spatial accessibility modeling

Environmental and socioeconomic applications

a. vegetation and climate change
b. dynamics of watersheds and fluvial systems
c. land cover disturbance and change
d. health and health care
e. urban travel and mobility
f. GIS and society

GIS Facilities

The Department of Geography & Geographic Information Science has a state-of-the-art laboratory for teaching in GIScience. The teaching laboratory consists of 30 workstations equipped with a wide variety of software for GIS, image processing, air photo interpretation, and spatial/statistical analysis. Students also have access to an array of input/output devices, including a large-format, color plotter Facilities for GIS research are distributed among the research laboratories listed below. Campus-wide computing resources include the National Center for Supercomputing Applications, a world-class facility for supercomputing.

CyberGIS Center for Advanced Digital and Spatial Studies

The *CyberGIS Center for Advanced Digital and Spatial Studies* is internationally renowned for research in GIScience. Its mission is to empower advanced digital and spatial studies through innovation of CyberGIS technologies and applications. Founded and directed by Prof. Shaowen Wang, and housed in GGIS, the center addresses diverse GIScience challenges including: computationally intensive spatial analysis and modelling, CyberGIS, cyberinfrastructure-based geospatial problem-solving environments, computing and data-intensive applications and sciences, and high-performance and collaborative GIS.
More information at: cybergis.illinois.edu

Prerequisites

Applicants to the Geography program with a specialization in GIScience are expected to have completed: 1) a course in GIS or cartography, 2) an introductory statistics course.

Master's Requirements

Students must meet all GGIS requirements for the Master's degree including GGIS 471 and GGIS 491. In addition, students must complete at least three courses from the GIScience core. With permission of the faculty advisor, students may substitute GIScience-related courses offered in other departments. GIScience students are strongly encouraged to pursue the Thesis option for the Master.

PhD Requirements

For admission to the doctoral program, with a specialization in Geographic Information Science, a completed Master's degree with thesis is required. Students must meet all Departmental requirements for the PhD degree including GGIS 471 (Modern Geographic Thought), and GGIS 491 Research in Geography), or their equivalents. The GIScience specialization also requires GGIS 479 Advanced Topics in GIS), or GGIS 480 (Principles of GIS), or the equivalent, and additional graduate coursework in one or more specialized areas of GIScience, including at least one 500-level course. Students are encouraged to take GIScience-related courses in fields such as computer science, agricultural economics, econometrics, and atmospheric sciences.

Core Courses

- GGIS 412: Geospatial Technologies and Society
- GGIS 439: Health Applications of GIS
- GGIS 460: Aerial Photo Analysis
- GGIS 473: Digital Cartography and Map Design
- GGIS 476: Applied GIS to Environmental Studies

- GGIS 477: Introduction to Remote Sensing
- GGIS 478: Techniques of Remote Sensing
- GGIS 479: Advanced Topics in GIS
- GGIS 480: Principles of Geographic Information Systems
- GGIS 489: Programming for GIS
- GGIS 570: Advanced Spatial Analysis

River, Watershed, and Landscape Dynamics

ggis.illinois.edu/research/areas/river-watershed-and-landscape-dynamics

Students wishing to enter this area of specialization are strongly urged to contact the participating faculty member most closely matching their prospective research interests. The program emphases are closely tied to current research interests of individual faculty members. Please visit the website link above for a current listing of participating faculty.

Statement

The **River, Watershed, and Landscape Dynamics** area of specialization builds upon the foundations of physical geography as an integrating science that examines the origins, contemporary development, and processes of the Earth's natural and human-modified surfaces. All participating faculty place strong emphasis on the theoretical underpinning of their research and teaching.

The principal research themes of this area of specialization reflect the specialties of the participating faculty. Each of the participating faculty has strong links to other departments and/or programs on campus and a high proportion of the research conducted in the specialization has a strong interdisciplinary flavor.

This specialization also maintains strong cross-campus connections with other water-related research programs in Geology, Civil and Environmental Engineering and Natural Resources and Environmental Sciences. Faculty in the program also maintain close working relationships with scientists in the Illinois State Geological Survey, Illinois State Water Survey, Illinois Natural History Survey and the Central Midwest Water Science Center of the U.S. Geological Survey, all of which are located on campus.

Faculty Collaborators on Campus (teach related courses and serve on graduate student committees)

Alison Anders, Geology
Marcelo Garcia, Civil and Environmental Engineering
Praveen Kumar, Civil and Environmental Engineering
Ximing Cai, Civil and Environmental Engineering
Mark David, Natural Resources and Environmental Sciences

Prerequisites

Students must already have completed or take immediately upon entry into the program: 1) an introductory college calculus course a one course minimum is required, but course work through calculus of several variables is recommended), 2) college physics.

MA/MS Requirements

The Geography Master's program, with a specialization in the **River, Watershed and Landscape Dynamics** follows the guidelines of the Graduate School and the Department of Geography and Geographic Information Science. Prospective students should appreciate that an important additional requirement is that the program requires master's candidates to undertake the thesis option.

Participating faculty consider the research experience to be an essential ingredient of graduate training in physical geography. Students should also appreciate that the participating faculty will usually supervise graduate research in areas that fall within their expertise.

PhD Requirements

The Geography doctoral program, with a specialization in **River, Watershed and Landscape Dynamics,** follows the guidelines of the Graduate School and the Department of Geography and Geographic Information Science. Although students in the doctoral program focus upon a specialized topic they are expected to develop a general familiarity with all aspects of contemporary thought related to river, watershed, and landscape dynamics. Complementary course work outside the department in the form of a minor see departmental requirements) is required.

Graduate Courses in the Department

- GGIS 401: Watershed Hydrology
- GGIS 406: Fluvial Geomorphology
- GGIS 408: Watershed Analysis
- GGIS 460: Aerial Photo Analysis
- GGIS 575: Alluvial Boundary Layer Dynamics

Related Graduate Courses in Other Departments

- CEE 432: Stream Ecology
- CEE 450: Surface Hydrology
- CEE 453: Urban Hydrology and Hydraulics
- CEE 551: Open Channel Hydraulics
- NRES 403: Watersheds and Water Quality
- NRES 490: Surface Water System Chemistry
- GEOL 440: Sedimentology and Stratigraphy
- UP 405: Watershed Ecology and Planning

Appendix

Director of Graduate Studies

Geography & GIS Mentoring Guidelines

Director of Graduate Studies (DGS)

The Director of Graduate Studies is a Geography & GIS faculty member designated by the department head who works with the Graduate Program contact to coordinate and regulate the department's Master's and Doctoral programs. DGS responsibilities include:

- Coordinate recruitment and application reviews of prospective graduate students, including fielding applicant inquiries (in cooperation with Graduate Program Contact).
- Consult with the chairs of the department's three research areas to determine total number of students to admit each academic year.
- Pursue external-to-department funding opportunities for prospective graduate students,
- Oversee the assignment of teaching assistants (TA) to introductory-level Geography courses.
- Oversee the distribution of departmental fellowships to new and continuing graduate students.
- Lead Fall Orientation for new graduate students.
- Provide current graduate students with information about degree requirements or their program of study.

Department of Geography & GIS Graduate Student Mentoring Guidelines

FACULTY	GRADUATE STUDENTS	GRADUATE PROGRAMS
POSITIVE & SUPPORTIVE ENVIRONMENT	**POSITIVE & SUPPORTIVE ENVIRONMENT**	**POSITIVE & SUPPORTIVE ENVIRONMENT**
• Foster students' overall wellbeing. • Provide a safe, supportive environment for students. • Interact ethically and professionally with other members of the university community. • Be responsive and receptive to students' requests for academic feedback and professional advice	• Interact ethically and professionally with other members of the university community. • Seek guidance when feedback is needed. • Communicate about needs and concerns regarding academic and professional progress.	• Foster student overall wellbeing. • Provide a safe, supportive environment for students. • Interact ethically and professionally with other members of the university community. • Connect students with appropriate university offices and resources. • Help resolve student problems and conflicts.
ACADEMIC SUCCESS	**ACADEMIC SUCCESS**	**ACADEMIC SUCCESS**
• Guide students in developing academic and research skills. • Convey clear academic and research expectations. • Provide timely, constructive feedback and periodic evaluations. • Evaluate students' performance fairly and objectively. • Promote students' timely academic and research progress. • Advise students on requirements for academic integrity, responsible conduct of research and other relevant policies.	• Be receptive to academic and research direction and feedback from advisers. • Take responsibility for knowing and fulfilling degree requirements. • Take responsibility for knowing and executing ethical, professional norms. • Understand and follow department, Graduate College and university policies, including academic integrity, student conduct and responsible conduct of research	• Provide information about degree requirements, academic policies and expectations. • Share information about fellowships, awards and other academic opportunities. • Monitor student academic progress, providing at least yearly evaluations and communicating them with students.
CAREER DEVELOPMENT	**CAREER DEVELOPMENT**	**CAREER DEVELOPMENT**
• Foster student professional development to prepare them for a wide range of future employment options. • Assist students in achieving their career goals. • Encourage engagement in professional communities and meetings to foster potential career opportunities. • Advise students regarding the ethics of their profession.	• Identify professional development needs and pursue appropriate opportunities. • Take initiative for career exploration and the job search.	• Promote student engagement in professional development programs. • Foster the professional development of students to prepare for a wide range of future employment options. • Direct students to resources that can help them pursue and succeed in their careers of choice.