

# CYBERGIS AND GEOSPATIAL DATA SCIENCE, MS

for the degree of Master of Science in CyberGIS and Geospatial Data Science (online)

CyberGIS – a new generation of geographic information science and systems (GIS) in the era of artificial intelligence and big data – represents the latest innovative development in the fast-growing field of geospatial data science. Combining advances in high-performance and data-intensive computing with developments in geospatial data analysis, management, processing, and visualization, cyberGIS has rapidly emerged as a major force in private and public organizations and in higher education for harnessing the rapid geospatial data revolution. The fully-online masters degree program in CyberGIS and Geospatial Data Science requires 32 credit hours (no thesis required). Students will work with their program advisor to individualize their program and the required capstone research project.

## Admission

Applicants must have a Bachelor's degree (BA or BS) from an accredited U.S. college or an approved institution of higher learning abroad, ideally in Geography, Computer and Information Sciences, or GIS but degrees in other fields will be considered; with a GPA of 3.0/4.0 or higher for the final 60 semester hours. Students who do not meet the GPA criterion may still be eligible to enroll if they have relevant experience outside of the classroom. Language test (IELTS or TOEFL) scores are required for applicants whose native language is not English.

## Facilities and Resources

The department hosts several state-of-the-art research laboratories maintained by individual faculty members. The CyberInfrastructure and Geospatial Information (CIGI) Lab (<https://cigi.illinois.edu/>) researches and develops cutting-edge cyberinfrastructure to advance geospatial science and technologies. The department also sponsors the CyberGIS Center for Advanced Digital & Spatial Studies (<https://cybergis.illinois.edu/>) whose mission is to empower advanced digital and spatial studies through innovation of CyberGIS technologies and applications. The lab utilizes several high performance computers and servers for performing computationally-intensive geographic analysis and problem solving in various research, education, and outreach contexts.

## Financial Aid

This online program is self-supporting and DOES NOT accept the following tuition and fee waivers (TFWs): Non-Academic waivers (including Illinois employees and employees of other state institutions); Academic waivers from Illinois, UIC and UIS employees; Related Agency waivers; waivers granted through fellowships/assistantships as governed by the Graduate College at Illinois; or Retiree waivers. Students in these programs are not eligible to hold a waiver-generating graduate appointment (assistantship or fellowship). Full-time employees may be admitted to these programs but their employee waiver is not eligible for use towards this program. This program does accept statutory waivers (veteran grants, etc.)

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Code	Title	Hours
Complete 2 of the following courses focusing on GIS:		6-7
GGIS 403	Geographic Information Science and Systems	
GGIS 477	Introduction to Remote Sensing	
GGIS 480	Principles of Geographic Information Science	
Complete 2 of the following courses focusing on core concepts of cyberGIS and geospatial data science topics:		8
GGIS 407	Foundations of CyberGIS & Geospatial Data Science	
GGIS 507	High-Performance Geospatial Computing	
GGIS 570	Advanced Spatial Analysis	
Complete the following 2 advanced courses in cyberGIS and geospatial data science:		8
GGIS 517	Geospatial Visualization & Visual Analytics	
GGIS 527	Geospatial Artificial Intelligence & Machine Learning	
Additional 400-500 level courses as needed to meet or exceed the minimum credit hour requirement of the program. Selected in consultation with the student's advisor; chosen from courses in the GIS and core concepts lists (if not taken to meet those requirements) or from a list of electives maintained by the department.		6
GGIS 598	Graduate Capstone Project	
<b>Total Hours</b>		<b>32</b>

### Other Requirements

Code	Title	Hours
Other requirements may overlap		
Minimum Hours Overall Required Within the Unit		16
Requires a written capstone report		
At least 12 of the 32 required hours must be in 500-level courses (8 in GGIS).		
Course substitutions are permitted with the consent of the program coordinator.		
A maximum of 2 elective courses may be taken CR/NC.		
All students must maintain a minimum grade point average (GPA) of 3.0 (A = 4.0). If the GPA falls below this minimum after 12 or more graduate hours of graded coursework, it must be raised to 3.0 or above after the completion of 12 additional graduate hours of graded coursework and must be maintained at or above the minimum thereafter.		

## Graduate Degree Programs in Geography:

- CyberGIS and Geospatial Data Science, MS (p. 1) (online)
- Geography, MA (<http://catalog.illinois.edu/graduate/las/geography-ma/>)

- Geography, MS (<http://catalog.illinois.edu/graduate/las/geography-ms/>)
  - **concentrations:**
    - Geographic Information Science - Professional Science Master's (<http://catalog.illinois.edu/graduate/las/geography-ms/geographic-information-science-professional-science-masters/>)
    - Computational Science & Engineering (<http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/>)
- Geography, PhD (<http://catalog.illinois.edu/graduate/las/geography-phd/>)
  - **concentration:**
    - Computational Science & Engineering (<http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/>)

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Urbana, IL 61801  
Department of Geography & GIS homepage (<https://ggis.illinois.edu/>)