The Department of Geography offers a one-year GIS certificate program intended to provide a mix of GIS theory and practical experience for many possible applications and fields such as: agriculture, archaeology, conservation, demography, economics, emergency management, law enforcement, marketing, natural resource management, public health, transportation, urban planning, wildlife ecology, and more.

Geographic information systems (GIS) is a discipline devoted to the acquisition, storage, management, analysis, and visualization of spatial data. GIS provides the ability to integrate and analyze spatial and non-spatial information for mapping, planning and decision-making.

The primary goal of the capstone certificate program is to ensure that students become sufficiently grounded in theoretical underpinnings of GIS to make informed use of existing GIS applications and gain skills needed to construct new applications in the physical or social realms. The full range of GIS capabilities is covered, including data capture, analysis, modeling and cartographic representation. Through hands-on exposure in the form of lab exercises, course projects, and an internship or independent project, experience will be acquired with major GIS software packages, including ArcGIS. By teaching concepts and hands-on use, the program differs from a typical short course designed for GIS training in a particular software package.

The program is intended to serve:

- recent graduates who wish to acquire technical expertise to support the topical knowledge gained in their undergraduate major
- returning students who wish to acquire specialized training to meet current (or future) job requirements calling for GIS knowledge

This program consists of 4 core courses, a minimum of 1 elective and an independent capstone project. Students must complete a minimum of 16 credits while in the program. It may be possible to transfer in 4 credits of required coursework taken previously (approval needed if taken at another institution).

The 2-credit capstone project is tailored to individual backgrounds and interests. The program welcomes work-related projects by students who are presently employed. The capstone project can be taken any semester but should be taken in conjunction with or after taking G578 (Applications of GIS).

Please note: Students entering in spring semesters may need three semesters to complete coursework since the Geog 578 is not offered in the fall and requires Geog 377 as a prerequisite.

No certificate courses are offered in the summer.

Further detail, including tuition and costs, is provided at the GIS Certificate Program (https://geography.wisc.edu/gis/giscertificateprogram/application-information) website.

### ADMISSION

Applyants must possess a baccalaureate degree. Applications are accepted for both fall and spring semesters. Deadlines for submitting applications to the GIS certificate program are April 15 for fall admission and October 15 for spring in order to be guaranteed full consideration.

Applications received after these dates may be considered if space allows. There are no summer admissions. (Students may not be enrolled in another undergraduate or graduate program while enrolled in this capstone certificate program.)

**Admission is competitive.** The minimum requirements are:

- a bachelor's degree (preferably in a physical or social science)
- a minimum undergraduate grade point average (GPA) of 3.00 on a 4.00 scale; Graduate Record Examination (GRE) scores are not required.
- completion of an introductory course in statistical methods, or take an intro statistics course prior to taking the Advanced Quantitative Methods class (GEOG 560)
- submission of official student transcripts, a one-page statement of interest, and three letters of recommendation
- non-native English speakers must also submit a Test of English as a Foreign Language (TOEFL) score

Adult Career and Special Student Services (ACSSS) is the admitting office for all University Special students. However, the department offering the capstone certificate program makes the final admission decision upon review of all applicant materials. Consult the GIS Program website (https://geography.wisc.edu/gis/giscertificateprogram) for further detail and assistance.

### Application steps

1. Submit an online application for admission (http://continuingstudies.wisc.edu/advising/apply.htm) as a University Special student, selecting UNCS Capstone Certificate and the program: Geographic Information Systems. This application is received and processed by ACSSS with final decision held for approval from the specific capstone certificate coordinator.

2. Submit required materials to the GIS Certificate Program.

Fill out their online supplemental application (https://uwmadison.co1.qualtrics.com/jfe/form/SV_3ICoVdXcZHPThVr). This includes submission of the names and email addresses of two people who will write you letters of recommendation and upload a letter of interest (one-page essay). The GIS program will contact referees for their recommendation letters, but applicants should ensure they will write you a letter prior to submitting their names. Referees will be asked to submit letters of recommendation electronically.

3. Take steps to have official transcripts of all previous college work sent to: GIS Certificate Program, Department of Geography, 550 North Park Street, Science Hall, Madison, WI 53706

4. International students from non-English speaking countries must also submit TOEFL scores.

5. Deadlines for submitting applications to the GIS certificate program are April 15 for fall admission and October 15 for spring in order to be guaranteed full consideration. Applications received after these dates may be considered if space allows.
ENROLLMENT
Admitted students receive a formal letter of admission to UW–Madison from Adult Career and Special Student Services along with general enrollment information.

The Department of Geography–GIS Capstone Certificate Program will send an email to admitted students with specific information pertaining to enrollment in courses and completion of the capstone program.

Additional detail is provided on the ACSSS enrollment page (http://continuingstudies.wisc.edu/advising/enroll-special.htm).

REQUIREMENTS

- Must have a minimum GPA of 3.000

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<th>Code</th>
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<th>Credits</th>
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<tr>
<td>GEOG 370</td>
<td>Introduction to Cartography</td>
<td>4</td>
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<tr>
<td>GEOG/CIV ENGR/ENVIR ST 377</td>
<td>An Introduction to Geographic Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 560</td>
<td>Advanced Quantitative Methods</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 578</td>
<td>GIS Applications</td>
<td>4</td>
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Required Elective Course

Select one of the following: 3-4

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<tr>
<td>GEOG/ENVIR ST/ F&amp;W ECOL/ G L E/GEOSCI/ LAND ARC 371</td>
<td>Introduction to Environmental Remote Sensing</td>
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<tr>
<td>GEOG 378</td>
<td>Introduction to Geocomputing</td>
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<tr>
<td>GEOG 572</td>
<td>Graphic Design in Cartography</td>
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<td>GEOG 575</td>
<td>Interactive Cartography &amp; Geovisualization</td>
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Internship/Capstone Course

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<tr>
<td>GEOG 602</td>
<td>Internship</td>
<td>2</td>
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</table>

Total Credits 20-21

LEARNING OUTCOMES

Students will

- Become grounded in the conceptual underpinnings of GIS technology in order to make informed use of current GIS applications
- Acquire the technological skills needed to construct new GIS applications in a wide variety of disciplines
- Use common GIS techniques to collect, analyze, process, and display geographic data
- Apply GIS to solve real-world problems
- Gain experience with common commercial and open-source GIS software