

Post-Baccalaureate Certificate in GIS Analysis: Ecological GIS or GIS Applications



The Western Illinois University departments of Biological Sciences and Earth, Atmospheric and Geographic Information Sciences offer this interdisciplinary, skill-based program (Geographic Information Systems (GIS)), designed to train students to become qualified GIS analysts in their specific specialty fields or disciplines. Students pursuing this certificate will gain development and confidence in GIS by learning how problems are interpreted, how to model scientifically the geospatial world, how to use GIS tools correctly, how to design and implement a GIS project and how to make high-quality maps and use maps wisely for GIS story-telling. Students will gain GIS expertise from three perspectives of GIS learning: (1) theoretical understanding, (2) skill development and (3) problem solving by use of cutting-edge ideas and tools.

Admission Requirements

Students applying for the Western Illinois University certificate must have a cumulative undergraduate grade point average of 2.75 or higher and an undergraduate degree in Biology, Geography, or a related field. Non-degree students seeking the certificate only must meet the admission requirements for the Graduate School; students seeking both a degree and the certificate must meet the admission requirements for their degree program.

Academic Requirements

Students must have a cumulative 3.0 GPA for all coursework required for completion of the certificate. A post-baccalaureate certificate will not be awarded to a student who earns more than 3 semester hours (SH) of "C," "D," "F," or "U" grades in the graduate-level courses required for the completion of the certificate. No course for which a student has received a grade of "D" or less may be used to satisfy certificate requirements. Transfer work or course substitutions are not allowed in the certificate programs. The work required for the certificate must be completed within three calendar years.

If approved by the specific academic department, courses taken to satisfy certificate requirements may be used to satisfy post-baccalaureate degree requirements at the University.

Certificate Requirements

The program requires completion of 18 SH broken into Sections I, II, and III. Section I requires completion of two core courses: GIS 405G and 509 (6 SH). Section II requires selection of one course: BIOL 452G, GIS 407G, GIS 408G, or GIS 609 (3 SH). Section III requires selection of

any three courses (9 SH) from Biology; Earth, Atmospheric, and Geographic Information Sciences; Political Science; Recreation, Park and Tourism Administration; and Sociology and Anthropology.

Career Opportunities

In the environmental field, there are few jobs beyond the technician level that do not require a background in Geography Information Systems (GIS). The Illinois Department of Natural Resources, Illinois Environmental Protection Agency, U.S. Army Corps of Engineers and U.S. Fish and Wildlife Service all require their mid-level employees to be familiar with the use and application of GIS to their particular missions. Potential career opportunities include the following:

- Resource development
- Environmental consulting
- Landscaping
- Working in state and federal agencies
- Urban planning
- Industrial or urban facility and site development
- Agricultural management
- Crime mapping
- Emergency management
- Climatology

Facilities

The GIS Analysis post-baccalaureate certificate utilizes modern remote sensing/GIS computer instructional labs at the Macomb (Waggoner Hall and Tillman Hall) and Moline (WIU-QC Complex) campuses. ESRI *ArcGIS* software is available for classroom and individual learning, and students are provided with *ArcGIS* student versions for their personal computers.

Program Location:
Macomb, Quad Cities

Contact Information

Questions about the program:

Department of Biological Sciences
Richard Musser,
department chairperson
(309) 298-1546
RO-Musser@wiu.edu
wiu.edu/biology

-or-

Department of Earth, Atmospheric,
and Geographic Information Sciences
Samuel Thompson,
department chairperson
(309) 298-1648
S-Thompson@wiu.edu
eagis@wiu.edu
wiu.edu/cas/eagis

General admission questions:

School of Graduate Studies
(309) 298-1806 or (877) WIU GRAD
Grad-Office@wiu.edu
wiu.edu/grad

*Higher Values in
Higher Education*

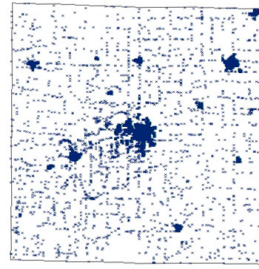
Academic Excellence
Educational Opportunity
Personal Growth
Social Responsibility



**WESTERN
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The WIU Department of Earth, Atmospheric, and Geographic Information Sciences houses the GIS Center on the third floor of Tillman Hall. The center is responsible for compiling, managing and storing GIS data layers. Other facilities include a Remote Sensing/GIS lab with more than 30 computers that are fully networked and use ERDAS *Imagine* software. Other software includes ESRI *GIS*, such as *ArcGIS*. Additionally, the department has three wired electronic classrooms plus wireless connectivity throughout Tillman Hall.

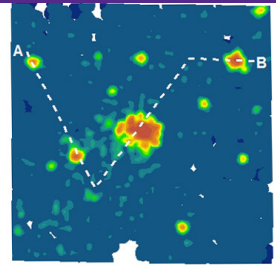
The Alice L. Kibbe Life Science Station is a biological reserve of more than 1,600 acres of islands, bluffs and upland areas in the Mississippi River Valley near Warsaw, IL. Its aquatic habitats, forests and prairies serve as an outdoor classroom for field studies and are used in environmental research. The Cedar Glen Eagle Roost, which is adjacent to the field station, is considered one of the Midwest's most outstanding natural areas and is nationally known as a major winter roosting area for bald eagles. The field station maintains research sites and equipment for sampling on the Mississippi River.



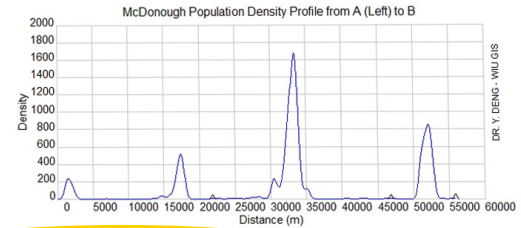
Locations of residential buildings in McDonough County



Location of McDonough County, IL



Population density of McDonough County



Distinctive Features

- Students will be taught correct use of GIS over a broad range of real-world problems, including both environmental (including ecological) and socioeconomic applications, many of which share similar GIS principles, methods and tools.
- There is an emphasis on a modeling-oriented GIS approach to guide students through a three-step procedure of (1) understanding and conceptualizing the problem in GIS, (2) representing the problem in GIS and (3) analyzing the problem using GIS techniques.
- Students are trained to use GIS wisely, based on a solid understanding of this science, including its principles, methodologies, tools and limitations.