

Master of Science in Biology



Biology is one of the most basic fields of science, with direct application to humans. Our continued existence on planet Earth will depend on how we resolve biological problems. Biology ranges in scale from biochemical processes inside individual cells, to complex multicellular organisms, to populations of organisms to ecosystems, to the entire planet. A Master of Science in Biology allows our graduates to pursue careers in health care, biotechnology, conservation, government agencies, education, and a wide range of other fields.

Admission Requirements

All candidates must meet the general admission requirements of the Western Illinois University School of Graduate Studies. Students selecting Biological Sciences as a graduate major must have received a bachelor's degree in Biology or an undergraduate degree in a related field, with coursework in Biological Sciences. Completion of the degree will be contingent upon the student completing any undergraduate deficiencies identified by the department. Acceptance into the Biology graduate program requires a minimum 3.0 grade point average, or a GPA of 3.0 or higher during the last two undergraduate years, three letters of recommendation and a student essay addressing their interests and career goals. The GRE is not required.

Degree Requirements

The MS in Biology degree can be earned by satisfying either the requirements of the thesis, project or coursework plan (outlined on the next page). The thesis plan is designed for students who are interested in research and/or wish to continue their education with a PhD program. The project plan is designed for students who want to focus on hands-on experiences, an internship or coursework, where a non-thesis project or portfolio is preferred. The coursework plan is recommended for students who want additional advanced training in the Biological Sciences.

Career Opportunities

The career opportunities available to our graduates are as varied as Biology itself. Potential careers open to our graduates include biotechnology industry, medicine, government conservation agencies, private conservation organizations, science education, museum curation and zoos and aquaria.

Faculty Expertise

The WIU Department of Biological Sciences has faculty members with advanced degrees in Plant Sciences, Microbiology, Zoology and Science Education. Faculty have specializations in fungi, virus, bacteria, forest and prairie ecology and taxonomy, algae, herpetology (frogs, snakes and lizards), mammalogy, parasitology, ornithology (birds), invertebrates (insects, snails), molecular biology, animal anatomy and physiology, biogeography and Geographic Information Systems (GIS).

Assistantship Opportunities

The Biological Sciences department awards 20 teaching assistantships and two graduate assistantships through an application and competitive interview process. All students with at least a 3.0 GPA, seeking, or completing a MS in Biology degree, are eligible to apply. All assistantships provide a tuition waiver and stipend.

Western Illinois University is an Affirmative Action and Equal Opportunity employer with a strong commitment to diversity. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including, but not limited to, minorities, women and individuals with disabilities. WIU has a non-discrimination policy that includes sex, race, color, sexual orientation, gender identity and gender expression, religion, age, marital status, national origin, disability and veteran status.

Facilities

The WIU Department of Biological Sciences has three facilities that support our signature programs: (1) the Macomb campus, (2) the Quad Cities campus, and (3) the Alice L. Kibbe Life Science Station. The Macomb campus houses many collections, including mammal, invertebrate, bird, fungi, reptiles and amphibians, fish and the R. M. Myers Herbarium and Greenhouse. Microbial and molecular teaching and research are supported by cutting-edge equipment and laboratories. Our highly respected Conservation

Program Location:
Macomb, Quad Cities

Contact Information

Questions about the program:
Department of Biological Sciences
Graduate Coordinator
(309) 298-1546
gradbio@wiu.edu
wiu.edu/biology

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

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Higher Education*

Academic Excellence
Educational Opportunity
Personal Growth
Social Responsibility



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and Organismal Biology programs are also provided by the Macomb campus, plus the Alice L. Kibbe Life Science Station in Warsaw, IL. Four-week field courses at the field station provide unique and unforgettable experiences along the beautiful Mississippi River. The Quad Cities campus facility, built in 2014, provides state-of-the-art laboratory and classrooms. Focus programs in Moline include the Ecological GIS and the Zoo and Aquarium Studies Post-Baccalaureate Certificate programs, often combined with the MS in Biology degree program, to provide graduate-level expertise in these topics.

Featured Alumni

“My time in the program (MS, 1996) was vital in my development as a young scientist and educator. The faculty, the multidisciplinary curriculum and the interaction with fellow graduate students fostered my own skills and provided me a better appreciation of all fields of biological sciences. The focus on a core curriculum at the graduate level is a central factor in consistently producing quality young scientists with diverse career opportunities. I believe strongly in the Biological Sciences program and am proud to have been able to continue my association with the program into my professional career.”

– Brian L. Sloss, PhD, USGS–Wisconsin Cooperative Fishery Research Unit, College of Natural Resources, University of Wisconsin–Stevens Point

M.S. Options

The MS in Biology can be earned by satisfying either the requirements of the Thesis Plan, Project Plan or Coursework Plan.

All graduate students must take the Graduate Core (9 SH):

- BIOL 501 Biometrics (3 SH)
- BIOL 502 Molecular Applications in Organismal Biology (3 SH) or BIOL 542 Molecular Biology of Genes (3 SH)
- BIOL 503 Biosystematics and Evolution (3 SH)

Students must complete their degree as outlined by one of the plans below:

I. Thesis Plan

- Electives (13 SH): Any 400G- or 500-level BIOL, BOT, MICR, ZOOL, or approved nondepartmental or transfer courses. The maximum number of semester hours allowed from the following is BIOL 570 Seminar (2 SH), approved nondepartmental graduate courses (6 SH), and approved transfer courses (9 SH)
- Thesis Related Courses (10 SH)
 - BIOL 576 Survey of Biological Literature (1 SH)
 - BIOL 600 Thesis Research (A minimum of 6 SH are required. Additional hours may be required depending on the research project used for the student’s program.)
 - BIOL 601 Thesis (3 SH)

Students must also file thesis proposal and complete coursework; complete independent research and thesis; and, when enrollment is on campus (Macomb), attend all departmental seminars, present seminar on thesis



and pass an oral examination on thesis, specialization in biology and general areas of biology (cell/molecular, organismal, population/community).

II. Project Plan

- Electives (18 SH): Any 400G- or 500-level BIOL, BOT, MICR, ZOOL, or approved nondepartmental or transfer courses. The maximum number of semester hours allowed from the following is BIOL 570 Seminar (2 SH), approved nondepartmental graduate courses (6 SH), and approved transfer courses (9 SH). BIOL 600 Thesis Research and BIOL 601 Thesis cannot be used.
- Advanced Project Related Courses (4 SH)
 - BIOL 576 Survey of Literature (1 SH)
 - BIOL 577 Research Problems (3 SH)
 - BIOL 599 Non-Thesis Exit Course (1 SH)

Students must also file a thesis proposal and complete coursework; complete project or portfolio; and, when enrollment is on campus (Macomb), attend all departmental seminars, present seminar on project, and pass an oral examination on thesis, specialization in biology and general areas of biology (cell/molecular, organismal, population/community).

III. Coursework Plan

- Electives (27 SH): Any 400G- or 500-level BIOL, BOT, MICR, ZOOL, or approved nondepartmental or transfer courses. The maximum number of semester hours allowed from the following is BIOL 570 Seminar (2 SH), approved nondepartmental graduate courses (6 SH), and approved transfer courses (9 SH). BIOL 600 Thesis Research and BIOL 601 Thesis cannot be used.
- Coursework Plan Related Course: BIOL 599 Non-Thesis Exit Course (1 SH)

Students must pass an oral examination on a specialization in biology and general areas of biology (cell/molecular, organismal, population/community), administered by three members of the Biology Graduate Committee.



“Western Illinois University’s Department of Biological Sciences provides a foundation of academic and professional experiences that equips the graduate student with foundational skills and knowledge for future success.”

– Brian L. Sloss, MS, 1996
University of Wisconsin–Stevens Point