

Interested in This Major?

Current Students: Visit us in Lapham Hall, Room S181 or email biosci@uwm.edu

Not a UWM Student yet? Contact our Admissions Counselor at let-sci@uwm.edu

web: uwm.edu/biology



What are Biological Sciences?

Biology is the study of life. Biologists study the living world including, animals, plants, microbes, and viruses at various levels ranging from molecules and cells to organisms and populations. They also study how organisms interact with each other and with their environment. These studies have applications across many areas, from agriculture to medicine, and criminal justice to zoology.

Career Opportunities

There is broad demand for biologists in both the private and public sectors in a variety of sectors such as research, development, education, public policy, healthcare, and pharmaceutical manufacturing and sales.

Is Biological Sciences Right For Me?

Biological Sciences is the most popular science major at UWM. It provides excellent preparation for professional schools in medicine, dentistry, pharmacy, and veterinary science, as well as graduate studies in any of the life sciences. It also appeals to students who think analytically and want opportunities to prepare for careers in a wide variety of sectors including healthcare, agriculture, natural resources and environmental sciences, food management, bioremediation, as well as the biomedical and biotechnology fields.

UWM's Programs

UWM's Department of Biological Sciences is home to the study of diverse aspects of Biology and Life Sciences. There are several ways students can tailor their major to specific interests and career goals. First, there are two majors - Biological Sciences and Microbiology. Within Biological Sciences, students can choose the General Biology option for a wide breadth of electives, or they

may choose to specialize with either the Cell and Molecular Biology (CMB) or Ecology, Evolution and Behavior (EEB) options.

The CMB option is a popular for students who intend to go on to a professional life sciences program such as medical school, veterinary school, or dental school, and for students interested in forensic science and biotechnology. It is also the choice of students wishing to double major in Neuroscience. The EEB option prepares students with the competitive skill sets they need to succeed in a wide variety of careers including biodiversity conservation, biotechnology, public health, natural resource management, environmental consulting, education (e.g., schools, museums, nature centers), government agencies, nonprofit programs, and graduate programs. The EEB option can be readily combined with a major in Conservation and Environmental Sciences. The General Biology option provides broad course choices for students who find all areas of Biology exciting and want to explore diverse interests in multiple areas of study.

Students can also choose a Microbiology major to be on the cutting edge of developments in public health, industrial production processes, biotechnology, and drug discovery. The Microbiology major prepares students for a variety of careers in the fields of microbiology, virology, molecular biology, biotechnology, and health related professions, for graduate studies in medical microbiology, industrial microbiology, environmental microbiology, microbial biotechnology, and molecular biology, and for professional studies in pharmacy, dentistry, and medicine.

BS or BA

Most Biological Sciences majors earn a Bachelor of Science degree with the intention of going into a science-based career, so requirements listed on this document address the more common BS. A Bachelor of Arts degree is also available that may be sufficient for science-related careers in education, marketing for a science-oriented organization, and program coordination.

Biological Sciences Requirements

A minimum of 34 credits in major courses are required for the BS. Twenty-six of the 34 credits must be at the 300-level or higher. Exemplary students may receive Honors in the major. Students interested in any of the majors in options offered in the Biological Sciences are encouraged to complete Bio Sci 150 in their freshman year so they may officially declare their major, meet with a departmental advisor, and make timely progress to completion of major requirements. A faculty advisor can help tailor elective choices based on student's short- and long-term education/career goals.

Required Courses, Biological Sciences

Course #	Course Title
Bio Sci 150, 152	Foundations of Biological Sciences I & II
Bio Sci 325	Genetics
Bio Sci 310 OR	General Ecology (Required for students in EEB option)
Bio Sci 315/316 OR	Cell Biology and Laboratory in Genetics and Cell Biology (Required for students in CMB option)
Bio Sci 383	General Microbiology (Required for students in Microbiology Major)
At least one additional lab course, usually at the 300-level or above	
At least 26 credits in 300-level courses or higher	
Capstone research class or hands-on research experience	

Biology students must also take these related classes:

Course #	Course Title
Chem 102 and 104	General Chemistry sequence
Chem 341 and 342 OR	Organic Chemistry (the two-semester sequence with one semester lab is recommended for pre-med students and required for the Microbiology major; either sequence fulfills the requirement for the CMB or Gen Bio options; neither sequence is required for the EEB option)
Chem 343, 344, and 345	
Math 211, 213, 221, or 231	Calculus
MthStat 215 OR	Statistics (choose one for the CMB or Gen Bio options; BioSci 465 is required for the EEB option)
BioSci 465	

Course #	Course Title
Physics 120, 121, and 122 or approved alternative*	General Physics (not required for the EEB option)
Choose one approved Geography, Geosciences, or Physics course*	General Physical Sciences (required for the EEB option)

* consult catalog for detailed lists of approved courses

Biological Sciences Minor

Many students combine a minor in Biological Sciences with a major in Psychology, Conservation and Environmental Sciences, Chemistry, Biochemistry, and Health Sciences.

Research Opportunities and Facilities

Research is central to our curriculum. Our research labs provide an opportunity for undergraduates to gain hands-on lab and field experience. As early as freshman year, students can work side-by-side with faculty members and grad students on a broad range of research projects. We work closely with the Office of Undergraduate Research to find opportunities for students. Exposure to research via a seminar or 'Independent Study' is an important part of our program.

UWM has state-of-the-art animal facilities and a modern research greenhouse, cutting-edge molecular biology equipment in our Biotechnology facility, and a microscopy facility with light, electron, and confocal microscopes. The UWM Field Station in Saukville, Wisc., provides field research sites including wetland, forests, and prairie communities. Aquatic research facilities for our students are in collaboration with School of Freshwater Sciences on the research vessel, the R/V Neeskay.

Some of our Research Areas

- Neurobiology
- Cancer Biology
- Developmental Biology
- Conservation Biology
- Genomics
- Plant Reproduction for Agriculture
- Drug Discovery
- Bacterial Pathogenesis
- Environmental Microbiology
- Ecophysiology
- Aquatic Ecology
- Global Change Biology
- Symbiosis and Host-Microbe Interactions
- Animal Behavior and Evolution
- Ecosystem Ecology
- Evolutionary Biology

Scholarships

The Department offers several competitive scholarships awarded annually to undergraduates. More information about each scholarship can be found on the Biological Sciences website (uwm.edu/biology) The Financial Aid office and the College of Letters and Science can provide information about additional campus and college-wide scholarships.

