

BIOLOGICAL SCIENCES, MS

The Department of Biological Sciences offers graduate programs in biology with areas of concentration in botany; microbiology; cellular and molecular biology; genetics; physiology and morphology of plants and animals; terrestrial and aquatic ecology; behavioral biology; conservation biology; and evolution.

Both a thesis and non-thesis track are offered within the MS degree. The thesis track is a research-based degree and is intended for students pursuing careers in formal research or planning to continue study towards the PhD degree. The non-thesis track is a coursework-intensive MS degree designed for students desiring a graduate education to enhance employment opportunities or prior to obtaining a professional degree. Students may switch from the non-thesis track to the thesis track if all requirements are met (e.g., GRE) and with written approval of the student's advisor and the Graduate Program Director.

Admission Requirements

Application Deadlines

Application deadlines vary by program, please review the application deadline chart (<http://uwm.edu/graduateschool/program-deadlines>) for specific programs. Other important dates and deadlines can be found by using the One Stop calendars (<https://uwm.edu/onestop/dates-and-deadlines>).

Fall Semester

- 12/01 - MS Thesis Track / PhD Thesis Track
- 05/01 - MS Non-Thesis Track

Spring Semester

- 10/01 - MS Non-Thesis Track

Thesis Track

Students are required to maintain full-time status and develop a formal thesis to earn the degree. Admission is during the fall semester only. When applying for admission, applicants should describe in their personal statement as completely as possible their specific research interests within biological sciences. Applicants are strongly encouraged to establish contact, before or during the application process, with Biological Sciences faculty members whose research interests are closest to their own, regarding the likelihood of one serving as the student's major professor. To assist the applicant in this process, a Biological Sciences Graduate Program brochure is available, which describes the research activities of the faculty. The brochure can be obtained by contacting the departmental office.

Non-Thesis Track

Students may enroll part-time and complete the degree at a slower pace or enroll full time to earn the degree faster. Students may be admitted during the fall or spring semesters. The accelerated degree is especially well suited for those students seeking to improve their academic record prior to applying to professional schools such as medical school, veterinary school, pharmacy school, dental school, etc. The course requirements for the program are highly adaptable to meet the student's goals such as completion of admission requirements, exploring a secondary area of interest, or gaining hands-on laboratory research experience. When applying for admission, applicants should describe their career goals in their personal statement as completely as possible to ensure assignment of the appropriate advisor.

Additional Admission Requirements

An applicant must meet Graduate School requirements (<http://uwm.edu/graduateschool/admission>) plus these departmental requirements to be considered for admission to the non-thesis track:

1. Undergraduate coursework equivalent to the Biological Sciences major at UWM, including coursework in the following areas of plant or animal science: cellular and molecular biology or genetics; organismal biology; ecology. Additional coursework in chemistry through organic or biochemistry; mathematical preparation including at least one course in calculus, statistics, or biometry; and a year of physics are strongly encouraged.
2. Submission of scores from one of the following exams: the General Test of the Graduate Record Examination (GRE) (<http://uwm.edu/graduateschool/admission/#gre>), Medical College Admission Test (MCAT), Dental Admission Test (DAT), Pharmacy College Admission Test (PCAT) or Praxis test.
3. At least two letters of recommendation from persons familiar with the applicant's scholarship.
4. International students must meet the minimum department requirements for English proficiency: completion of a baccalaureate or higher degree within the last two years from an institution where English is the sole language of instruction with a minimum of two years attendance; a minimum TOEFL score of 79 overall with a minimum score of 23 on the Speaking portion; a minimum IELTS score of 6.5 overall with a minimum score of 7.0 on the Speaking portion; or a minimum CAE score of C1 overall with a minimum of 185 on the Speaking portion.

Credits and Courses

Thesis Track

Minimum degree requirement is 30 graduate credits, at least 24 of which must be in biological sciences and up to 6 of which may be in related courses. Of the 24 credits, at least 12 must be course or seminar credits. The student must take at least two seminars during the course of the student's program up to a maximum of 4 credits counting toward the degree; and enroll in Biology Colloquium (BIO SCI 900) each semester with a maximum of 4 colloquium credits counting toward the degree. The student must enroll in a minimum of 12 credits in research (BIO SCI 990). The student plans a program of studies in consultation with the major professor. If desired, a special area of concentration (botany, microbiology, physiology) may be declared. A cumulative GPA of a 3.0 or higher on a 4.0 scale is required to receive the MS degree.

Non-Thesis Track

Minimum degree requirement is 30 graduate credits, at least 20 of which must be in courses offered by the Department of Biological Sciences.

Code	Title	Credits
Biological Science Requirements		
Select at least one laboratory course		
Select two of the following seminars that require a presentation (up to a maximum of 4 credits):		4
BIO SCI 925	Seminar: Molecular and Cell Biology:	
BIO SCI 929	Seminar: Behavioral Biology:	
BIO SCI 931	Seminar in Systematic Biology and Evolution:	
BIO SCI 933	Seminar in Neuroscience	
BIO SCI 934	Research Advances in Cell and Molecular Biology	

BIO SCI 935	Research Advances in Evolution, Ecology, and Behavior	
BIO SCI 936	Research Advances in Microbiology	
Select up to 4 credits of the following:		4
BIO SCI 899	Advanced Independent Studies	
Select up to 2 credits of the following:		2
BIO SCI 900	Biology Colloquium	
Required capstone course		
BIO SCI 800	Graduate Capstone in Biological Sciences:	2
Select additional BIO SCI credits to fulfill the required 20 credits		
Additional Requirements		
Select additional graduate credits to fulfill the required total of 30 credits ¹		
Total Credits		12

¹ Any remaining course work may be completed in other departments within UWM with the approval of the student's advisor and the Graduate Program Director.

A cumulative GPA of a 3.0 or higher on a 4.0 scale is required to receive the MS degree.

Capstone Requirements

All students in the non-thesis MS track must enroll once in BIO SCI 800. For successful completion of the capstone, students must demonstrate the ability to read and understand current scientific literature in the biological sciences, and apply acquired knowledge in biological sciences to a topic presentation.

In addition to BIO SCI 800, all students must submit a minimum of two examples of scientific writing that have been completed and graded during their graduate studies. At least one of these must be from a laboratory course or experience. These documents must be submitted to the Graduate Program Director and will be used as a portfolio to demonstrate the students' analytic and scientific writing abilities.

Program Requirements

Thesis Track

MS Graduate Advisory Committee

The MS Graduate Advisory Committee is selected by the major professor in consultation with the student, by the end of the first year of enrollment. The MS Advisory Committee consists of the major professor and two other graduate faculty members. The Committee must meet at least once a year to monitor and formally report on the student's academic and research progress.

Oral Examination

The student must pass an MS oral examination. The examination should be taken by the end of the first year of enrollment and must be taken no later than the end of the second year of enrollment. The student's MS Advisory Committee administers the oral examination.

Thesis

Students must prepare and defend a formal thesis reporting the results of their research. During the final year of study, students must present a seminar on their research, with prior public announcement. Submission of the final thesis to the Graduate School is required to complete the MS degree.

Major Professor as Advisor

The student must have a major professor to advise and supervise the student's studies as specified in Graduate School regulations. The Graduate Committee assigns a faculty advisor as a necessary prerequisite to admission.

Time Limit

Student must complete all degree requirements within five years of initial enrollment.

Non Thesis Track MS Graduate Advisor

Upon admission to the program, the student will be assigned an advisor whose research background is similar to the student's stated area of interest and career goals. Students may request a specific advisor from the faculty list; however, requesting an advisor does not guarantee availability. During the first semester of study the student and advisor must complete and submit a Plan of Study to the Graduate Program Director. The Plan of Study will detail the coursework to be taken for completion of the degree and can be modified at any time during the program.

Time Limit

Student must complete all degree requirements within three years of initial enrollment.