

M.S. IN BIOLOGY

Curriculum

Code	Title	Credits
Core Requirements		
BIO 510	Graduate Seminar in Biology	
BIO 511	Experimental Design and Analysis	3
BIO 520	Topics and Research Methods in Cellular, Microbial, and Molecular Biology	
BIO 521	Topics and Research Methods in Ecology, Evolution, and Organismal Biology	
Electives		15
Select 15 credits of electives from the following options:		
Any other 500-level biology course.		
Up to six credits of 400-level biology courses, where no 500-level course is available.		
Up to six credits of graduate course work from another department or university, pending prior departmental approval.		
Electives may not be repeats of courses unless the course topic changed significantly.		
Research and Capstone		
BIO 591	Directed Research in Biology	3
Total Minimum Credits Required		30

¹ To complete BIO 591 successfully, the student must present the results of the project in an open seminar. In addition, the student must pass a written comprehensive examination prepared by the student's advisory committee. Students who fail this examination will not receive a grade for this capstone course.

Thesis Option

Code	Title	Credits
Core Requirements		
BIO 510	Graduate Seminar in Biology	
BIO 511	Experimental Design and Analysis	3
BIO 520	Topics and Research Methods in Cellular, Microbial, and Molecular Biology	
BIO 521	Topics and Research Methods in Ecology, Evolution, and Organismal Biology	
Electives		9
Select nine credits of electives from the following options:		
Any other 500-level biology course, with the exception of BIO 591.		
Up to six credits of 400-level biology courses, where no 500-level course is available.		
Up to six credits of graduate course work from another department or university, pending prior departmental approval.		
Electives may not be repeats of courses unless the course topic changed significantly.		
Research and Capstone ¹		
BIO 608	Thesis Proposal ²	3
BIO 609	Thesis Research ³	3

BIO 610	Thesis and Defense ⁴	3
Total Minimum Credits Required		30

- ¹ Part-time students will be required to take the same group of courses as full-time students except they must complete BIO 608 by the end of their third year. As with the full-time students, part-time students cannot sign up for BIO 609 unless they have obtained a letter grade for BIO 608. In addition, they must sign up for BIO 610 by the start of their sixth year and complete it by the end of that year.
- ² A thesis committee must have been formed, met with the student to discuss course work and research ideas, and the "Committee Composition" form needs to have been completed and submitted to the graduate coordinator in Biology at least 1 week prior to the start of the semester, before the student may be enrolled in BIO 608.
- ³ A letter grade must be assigned for BIO 608 before the student may be enrolled in BIO 609. All paperwork must be filed at least 1 week prior to the start of the semester the student wants to conduct BIO 609 work.
- ⁴ A letter grade must be assigned for BIO 609 before the student may be enrolled in BIO 610. All paperwork must be filed at least 1 week prior to the start of the semester the student wants to conduct BIO 610 work. To complete BIO 610 successfully, the student must present the thesis research in an open seminar and also pass a final thesis defense before the thesis committee. The degree will not be awarded until the student's committee has accepted the thesis and signed by the dean of graduate studies.

Sample Course Plan

To track their individual degree progress, students are advised to access their Degree Audit via RamPortal and consult their Graduate Coordinator. For more information, visit the Degree Audit FAQ webpage (<https://www.wcupa.edu/academicEnterpriseSystems/student-system-modernization/degree-audit-faqs.aspx>).

The following is a sample suggested course sequence for this program; course offerings and availability are not guaranteed. Students should consult their academic advisor with any questions.

M.S. in Biology

Course	Title	Credits
Year One		
Fall		
BIO 510	Graduate Seminar in Biology	3
BIO 520	Topics and Research Methods in Cellular, Microbial, and Molecular Biology	3
Elective 1		3
Credits		9
Spring		
BIO 511	Experimental Design and Analysis	3
BIO 521	Topics and Research Methods in Ecology, Evolution, and Organismal Biology	3
Elective 2		3
Credits		9
Year Two		
Fall		
Elective 3		3
Elective 4		3
Elective 5		3
Credits		9

Spring		
BIO 591	Directed Research in Biology	3
Credits		3
Total Credits		30

M.S. in Biology (Thesis Option)

Course	Title	Credits
Year One		
Fall		
BIO 510	Graduate Seminar in Biology	3
BIO 520	Topics and Research Methods in Cellular, Microbial, and Molecular Biology	3
Elective 1		3
Credits		9
Spring		
BIO 511	Experimental Design and Analysis	3
BIO 521	Topics and Research Methods in Ecology, Evolution, and Organismal Biology	3
BIO 608	Thesis Proposal	3
Credits		9
Year Two		
Fall		
BIO 609	Thesis Research	3
Elective 2		3
Elective 3		3
Credits		9
Spring		
BIO 610	Thesis and Defense	3
Credits		3
Total Credits		30