

BIOLOGY - MASTER OF SCIENCE

The Master of Science degree can be obtained through either a thesis option or a non-thesis option. Both options require 30 credits of course work. The non-thesis option can be completed as an accelerated (one-year) program concentrating in biotechnology or through an individual degree plan in consultation with the student's Master of Science committee.

Master of Science Non-Thesis Option.

There are two formal course requirements for the MS non-thesis option as listed below.

Prefix	Title	Credits
Course Requirements		
BIOL 510	Current Topics in Biology	3
BIOL 540	Science and Ethics	1-3
Elective courses - courses with level from 450 - 598		24-26
At least 15 of the 30 credits should come from BIOL courses numbered 450 and above.		
Total Credits		30

Biotechnology Program

This is an accelerated (one year) non-thesis Master of Science degree in Biology that focuses on biotechnology. The program requires 30 hours of course work. The courses in this program are designed to prepare students for biotechnology-related careers in basic and applied research; in product development and testing; and in policy-making, regulation and law enforcement. The program of study includes practical training in molecular biology, genomics and bioinformatics, statistical analysis, business, bioethics and professional development skills. Additional graduate course work will provide students with further expertise in their individual areas of interest, including cell, molecular, and microbial biology; environmental, ecological and evolutionary biology; and general and integrative biology. Students who complete this training will be prepared for successful employment in academic, corporate, and government settings.

Prefix	Title	Credits
BIOL 510	Current Topics in Biology	3
BIOL 540	Science and Ethics	1-3
BIOL 541	Professional Development Seminar	1-3
MGMT 503	Organizational Behavior and Management Processes	3
A ST 505 or BIOL 455	Statistical Inference I Biometry	3-4
BIOL 509 or BIOL 550 Special Topics - Molecular Biology Techniques Lab	Guided Biological Research Lab	3
BIOL 566 or GENE 452 or BIOL 562	Advanced Bioinformatics and NCBI Database Applied Bioinformatics Advanced Genomics Technology	3
Biological Knowledge Electives		8-13
At least 15 of the 30 credits should come from BIOL courses numbered 450 and above.		
Optional Internship ¹		
Total Credits		30

Master of Science - Thesis Option. There are three formal course requirements for the MS thesis option as listed below

Prefix	Title	Credits
BIOL 510	Current Topics in Biology	3
BIOL 540	Science and Ethics	1-3
Master's Thesis (4-6 Hours)		4-6
BIOL 599	Master's Thesis	
Elective courses - courses with level 450-598		18-22
At least 15 of the 30 credits should come from BIOL courses numbered 450 and above.		
Total Credits		30

For research toward the Master of Science degree, students can choose among the Department's three areas of emphasis:

1. Behavioral, Ecological and Evolutionary Biology

The Behavioral, Ecological and Evolutionary Biology program is appropriate for graduate students who wish to specialize in areas of biology that study the various processes that encompass the behavior, ecology, and evolution of living and extinct taxa.

2. Cell and Organismal Biology

The Cell and Organismal Biology program is appropriate for all Graduate students who wish to emphasize those areas of biology that integrate function and structure in cells, tissues, and organisms. This emphasis focuses in faculty areas of expertise in cell and molecular biology, neurobiology, developmental biology, and physiology.

3. Microbiology

The Microbiology curriculum is appropriate for graduate students who wish to specialize in areas of biology that study the various processes that occur in microbes (bacteria, viruses, fungi, and protists) such as their physiology, ecology, development or evolution.

All graduate students should develop their curriculum plan in consultation with the faculty advisor and graduate committee. Details of sample course sequences within the different emphases are described in the Biology Graduate Handbook available for download from the Graduate Student section of the Biology website <https://bio.nmsu.edu/students/grads.html>.

Graduate students may also earn a minor in other graduate departments and programs.

¹ This may include a research internship in a biotechnology company or in a biological research laboratory at NMSU or other research institutions. From 1 to 6 credits earned as BIOL 598 during an internship may count towards the required elective credits.