Master of Science in Microbiology

Goals and Program Description

The M.S. in Microbiology program aims to provide students an advanced understanding in microbiology, to promote technical competence in the fundamentals of research, and to foster creative and independent thinking. This degree prepares students to enter into advanced degree programs in Microbiology or other health-related fields or to compete successfully for employment in academia, industry, or government.

Admission Requirements

In addition to the Graduate School Admission requirements for other programs, acceptance into the Microbiology M.S. program requires:

- A suitable faculty advisor
- GPA of 3.0 or above for all upper division course credits taken in the last degree-earning program
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The following course work is also recommended for applicants applying to the Microbiology M.S. program:

- 1 year of General Biology (+lab)
- 1 year of General Chemistry (+lab)
- 1 year of Organic Chemistry (+lab)
- 1 year of Physics (+lab)
- 1 semester of Calculus (Calculus through Multivariable Calculus recommended)
- 1 semester of Quantitative Analysis, Analytical Chemistry, or Inorganic Chemistry (+lab)
- 1 semester of Statistics
- General Microbiology (+lab)
- Genetics (lab recommended)

If the GPA requirement is not met, the Biological Sciences Graduate Programs Committee may choose to admit the candidate to "Classified (with performance requirements)" status. Applicants admitted as "Classified (with performance requirements)" status will be required to rectify any deficiencies as determined by the student's Advisory Committee.

General and Course Requirements

Incoming M.S. candidates are required to take a diagnostic assessment to evaluate the breadth of their knowledge within multiple biological science disciplines and to help plan their Program of Study. The diagnostic assessment must be completed in the candidate's first semester as part of BIOL 6690.

An advisory committee, selected by the candidate in the first semester, will further guide the student in establishing a Program of Study based on the candidate's diagnostic assessment report, educational background, and research interests.

A minimum of 30 credits in graduate coursework, including at least 15 credits earned at the 6600 level, is required for graduation.

Biology Core Course Requirements

Code	Title	Credits
BIOL 6690	Introduction to Graduate Studies (fall semester of first year)	1
BIOL 6605	Biometry (spring semester)	4
BIOL 6691	Seminar (second semester for M.S. students; third semester for doctoral students)	1

Microbiology Course Requirements

Code	Title	Credits
BIOL 6648	Graduate Problems	3
BIOL 6650	Thesis	3
BIOL 6695	Seminar in Microbiology	3
Other course work		15

*BIOL 6648 and BIOL 6650 may be repeated for a total of 9 and 6 credits, respectively.

Research Requirements

During the second semester, the candidate will submit and present a research proposal in a public forum as part of BIOL 6691. Immediately following the proposal seminar, the candidate will defend the research proposal in closed session with the Advisory Committee.

The M.S. in Microbiology degree will culminate when the candidate submits a written thesis embodying the results of original and creative research. The thesis must demonstrate the candidate's ability to understand and evaluate current literature within microbiology, to design experiments and conduct original research, and to interpret results and articulate them in a coherent manner. Following completion of the written thesis, the candidate will present her/his research findings in a public forum, followed by a satisfactory oral exam conducted by their Advisory Committee.