MICROBIOLOGY (M.S.)

https://colsa.unh.edu/molecular-cellular-biomedical-sciences/program/ms/microbiology

Description

The M.S. in Microbiology combines a dynamic curriculum in a broad range of areas with interdisciplinary research opportunities at the frontiers of microbiology, host-microbe interactions, and environmental microbiology. Graduates of the program are equipped for successful careers in biotechnology and pharmaceutical companies, academic and government research laboratories, and as preparation for doctoral programs, medical school, and health-related professional programs.

Distinctive Features of the Program

- Research opportunities are available in many cutting edge microbiology research areas
- Emphasis on interdisciplinary research training
- Well-equipped research laboratories and core facilities on the UNH campus
- Laboratory rotations upon entry to the program to become familiar with different research laboratories
- Weekly graduate student seminar presentations, as well as a departmental seminar series of invited speakers
- Opportunities to gain teaching experience as a Graduate Teaching Assistant

Research Opportunities

- Host-microbe interactions, parasitology, and immunology
- Environmental microbiology
- Signal transduction pathways
- Molecular microbiology
- Genomics and bioinformatics
- Microbial ecology and evolution
- Biotechnology

Financial Support

- Students admitted to the M.S. Program are typically supported by Research Assistantships or Teaching Assistantships
- Intramural summer and academic year fellowships are available to students on a competitive basis.

Career Prospects

- Research scientists in biotechnology and pharmaceutical industries
- Lab managers in academic research labs and research institutes, state and federal government agencies
- Academic preparation for doctoral programs and professional health programs (e.g., medical school)

Admission Requirements

- Completion of foundational courses in biology, chemistry (including organic chemistry), physics, and mathematics
- Otherwise well-qualified applicants can correct academic deficiencies with enrollment in appropriate courses or independent study during the first year of graduate studies
- Graduate Record Examination (GRE) scores (taken within the past five years)
- International applicants living outside the U.S.A. should first complete a free online application (http://gradschool.unh.edu/php/preapp.php)
- Applicants from non-English speaking countries must provide Test of English as a Foreign Language (TOEFL) scores
- Three letters of recommendation
- Personal statement, including research interests and names of two or three potential Microbiology faculty thesis advisors.

Requirements

A minimum of 30 credits, including 6-10 thesis credits (MCBS 899 Master’s Thesis), and a minimum of two other graduate level courses at the 800 or 900-level in the area of microbiology, are required. All M.S. students are required to enroll in and attend seminar (MCBS 997) every semester and present one seminar each year. A thesis and a formal defense are also required. In addition, the student must submit at least one manuscript for publication to a peer-reviewed journal.

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Recommended courses and subject areas to consider for 800/900 level coursework:

Biological Sciences

- BIOL 804 Plant-Microbe Interactions

Microbiology

- MICR 805 Immunology
- MICR #806 Virology
- MICR #808 Virology Laboratory
- MICR 815 Immunology Laboratory

Genetics

- GEN 804 Genetics of Prokaryotic Microbes
- GEN 812 Programming for Bioinformatics
- GEN 813 Microbial Ecology and Evolution
- GEN 817 Molecular Microbiology

Molecular, Cellular, and Biomedical Sciences

- MCBS 913 Applied Bioinformatics

Natural Resources

- NR 806 Soil Ecology