Microbiology, PhD

Requirements

The Doctor of Philosophy in microbiology requires a minimum of 72 s.h. of graduate credit, including at least 12 s.h. of graded coursework. Students must maintain a UI cumulative grade-point average of at least 3.00 to earn the degree. Qualified students interested in earning the Doctor of Medicine (MD) along with the PhD may apply to the Medical Scientist Training Program, which offers a combined MD/PhD program.

Students have the opportunity to tailor their curriculum with courses that enhance their educational goals. They take a combination of graduate-level courses that include seminar courses.

The PhD in microbiology requires the following coursework.

Core Curriculum

Course #	Title	Hours
MICR:6255	Graduate Experimental Approaches to Molecular Microbiology	2
MICR:6265	Introduction to Grant Writing	2
MICR:6267	Graduate Viruses and Human Disease	3
MICR:7263	Graduate Student Research Seminar	1
BMED:7270	Scholarly Integrity/ Responsible Conduct of Research I	0
BMED:7271	Scholarly Integrity/ Responsible Conduct of Research II	0
Additional courses offered by the Department of Microbiology and Immunology and other departments, as appropriate for each student		

Students enroll for a minimum of 8 additional s.h., which can be selected from the following.

Course #	Title	Hours
MICR:6201/ IMMU:6201	Graduate Immunology	3
MICR:6247/ IMMU:6247	Graduate Immunology and Human Disease	4
MICR:6259	Graduate Bacteria and Human Disease	4
MICR:6262	Graduate Bacterial Physiology and Cell Biology	3
MICR:6267	Graduate Viruses and Human Disease	3
MICR:6268	Biology and Pathogenesis of Viruses	2
MICR:6270	Graduate Bacterial Genetics	3
MICR:6282	Grad Applied Computational Biology	3
MICR:6310	Biology of Bacteria and Interactions With the Host	2
MICR:7265	Topics in Virology Literature	1

Examples of Elective Coursework

Course #	Title	Hours
BIOL:4386	Introduction to Scientific Computing for Biologists	3
BMED:5207	Principles of Molecular and Cellular Biology	3
MMED:6220/ ACB:6220/ MPB:6220	Mechanisms of Cellular Organization	3

Additional Requirements

Laboratory Rotations

Graduate students rotate through two to three different laboratories during their first academic year. The laboratory rotations are approximately ten weeks each. At the conclusion of each rotation, a student meets with the rotation mentor for an exit interview and an evaluation of the student's performance. This evaluation becomes part of the student's departmental record. The student is also required to present the research completed during the rotation in the graduate seminar course.

Teaching

Graduate students participate in the formal teaching activities of the department for at least two semesters. First-year students as well as students who are within a year of receiving the PhD typically are not asked to teach. Teaching may take a variety of forms, including tutoring, leading discussions and laboratory groups, correcting examinations, preparing teaching materials, and lecturing.

Comprehensive Examination

The comprehensive examination is designed to measure a student’s ability to write and defend a research proposal. The format of this proposal follows guidelines for R21 research proposals outlined by the National Institutes of Health (NIH). Guidance, in the design of these proposals, is provided by the director of graduate studies and the student’s comprehensive examination committee.

Written Examination

During the spring semester of the second year, a student prepares a detailed research proposal. The topic of the research proposal is determined in collaboration with the advisor and the comprehensive examination committee. A detailed guide can be found in the Graduate Program in Microbiology Graduate Student Handbook on the Department of Microbiology and Immunology website.

Oral Examination

Questions during the oral examination may come from the examination proposal, coursework, or other general areas of microbiology. In order to pass the comprehensive examination, a student must satisfactorily defend the written research proposal and answer questions of general microbiology that are germane to the proposal or that are important for a full understanding of the proposed experiments and their interpretation.

Final Examination

The PhD thesis committee serves as an advisory body for the preparation of the thesis. This committee meets with the student to review the material that is expected to be incorporated into the thesis. Although meetings of

the candidate with the committee should be yearly, the candidate, thesis advisor, or the committee can request a meeting at any time. A final draft of the thesis must be given to all members of the committee two weeks before the final examination. The final examination takes the form of a seminar presented to the department. This presentation is announced according to the Graduate College policy. Questions, comments, and discussion will follow. After the seminar, the candidate meets with the committee for the final thesis defense. The PhD is not awarded until the thesis is signed by the committee members and the department chair. In some cases, revisions may be required.