

MICROBIOLOGY AND MOLECULAR GENETICS M.S.

All students must meet the Requirement for the Master's Degree (<http://catalogue.uvm.edu/graduate/degree/requirements/requirementsforthemastersdegree/>)

OVERVIEW

The Department of Microbiology and Molecular Genetics offers a Master of Science degree. The M.S. degree is a thesis-based program. The program requires a minimum of 30 credits of research and coursework, a qualifying exam for candidacy, and the writing and defense of a thesis.

SPECIFIC REQUIREMENTS

Requirements for Admission to Graduate Studies for the Degree of Master of Science in Microbiology and Molecular Genetics

- A Bachelor's degree with a minimum cumulative grade point average of 3.00.
- Minimum course requirements: Completion of 2 semesters of undergraduate biology, general chemistry, organic chemistry and calculus; in addition, 1 course in genetics, one course in microbiology with a laboratory, and 1 course in cell biology.
- GRE/GMAT scores are NOT an admission requirement for the Master's Degree Program in Microbiology and Molecular Genetics program.
- Graduate student status will start 1 week prior to the start of fall classes and will be expected to be maintained full time including summers until completion of their Master's degree in Microbiology and Molecular Genetics.
- Students MUST be admitted through the Graduate College before taking any courses that will be applied to the Master's degree requirements.

APPLICATION PROCESS

- Completion of application to the Graduate College, meeting all Graduate College application requirements.
- Admission to the program will be contingent upon the capacity and interests of participating departmental laboratories.

Minimum Degree Requirements

A minimum of 30 credits are required for completion of the Master's Degree in Microbiology and Molecular Genetics. Of the 30 credits, 6 must be master's thesis research credits. Students must also meet the Graduate College requirements for the Master's Degree including maintaining a minimum GPA of 3.00.

Students must complete the following courses:		
BIOC 301	General Biochemistry (every fall*)	3
BIOC 302	General Biochemistry (every spring*)	3

MMG 231	Bioinformatics&Data Analysis (every fall)	3
MMG 393	Graduate Teaching Practicum	3
MMG 396	Advanced Special Topics (Biomedical Data Analysis, every fall)	2
Approved Graduate Ethics Course (1 credit)		
*Successful completion of BIOC 205 / BIOC 206 can substitute for the BIOC 301 / BIOC 302 requirement for previous UVM students only. However, these will NOT count towards the 30-graduate credit requirement for the degree.		
Students must complete at least 1 upper-level course in Molecular Genetics from the following selection of courses:		3-4
MMG 201	Molecular Cloning Lab (every fall)	
MMG 211	Prokaryotic Molecular Genetics (every fall)	
MMG 233	Genetics and Genomics (every fall)	
Students must complete at least 1 upper-level course in Microbiology from the following selection of courses:		3-4
MMG 220	Environmental Microbiology (spring, even years)	
MMG 222	Advanced Medical Microbiology (every spring)	
MMG 225	Eukaryotic Virology (fall, even years)	
MMG 320	Cellular Microbiology (spring, odd years)	
Remaining credits in the degree program should be selected from lists above or the following approved list of courses. Special topics or other graduate courses may be acceptable by prior approval from the student's Studies Committee.		3-4
CLBI 301	Cell Biology (every spring)	
MMG 223	Immunology (every spring)	
MMG 232	QR: Advanced Bioinformatics	
At least 6 (and up to 9) credits of Master's Thesis Research (MMG 391) are required. In Addition, a written thesis and defense of this thesis must occur according to the guidelines laid out by the Graduate College.		

Studies Committee:

The student's Studies Committee will consist of the student's research mentor, a member of the MMG graduate faculty, a faculty member from outside the Microbiology and Molecular Genetics Department to serve as the Chair of the Studies Committee, and a fourth member at the discretion of the student in consultation with their research mentor.

Thesis Writing and Defense:

Thesis writing cannot begin until a student has become a Candidate for the Degree of Master of Science in Microbiology and Molecular Genetics and has received approval from the student's Studies Committee.

Comprehensive Examination

By the end of the first year, M.S. candidates will write either an extensive literature review or research proposal that pertains to their research interests. Students can expect guidance from their advisor and Studies Committee in the writing of the proposal but must assume responsibility for the final version and must acquire sufficient mastery of their chosen subject area to defend the proposal. Students will present their written proposal to their Studies Committee. That Committee will determine if the written proposal is satisfactory and, if it is, schedule an oral defense. During the oral defense, the Committee shall be free to explore the knowledge of the student on a range of subjects related to the proposal, much as occurs during a thesis defense. If the written review/proposal is deemed unsatisfactory or if a student fails the oral defense, the candidate will be given one opportunity to rewrite or re-defend his/her proposal. If the student fails a second time, s/he/they will be dismissed from the M.S. program.

Requirements for Advancement to Candidacy for the Degree of Master of Science in Microbiology and Molecular Genetics

Advancement to candidacy requires satisfactory completion of the comprehensive exam.