

BioMolecular Sciences



Microbiology and Molecular Genetics Program Requirements

Class Requirements

Lecture Classes

- Four lecture classes at the 800 or 900 level
 - o At least 2 courses offered by MMG
 - o One course must be in molecular biology or genetics
 - BMB 801: Molecular Biology (Fall, 3 credits)
 - MMG 833: Microbial Genetics (Fall, 3 credits)
 - MMG 835: Eukaryotic Molecular Genetics (Spring, 3 credits)
 - o One course must be in cellular physiology or cell biology
 - MMG 801: Integrative Microbial Biology (Fall, 4 credits)
 - BMB 802; Metabolic Regulation and Signal Transduction (Spring, 3 credits)
 - BMB/MMG 825: Cell Structure and Function (Spring, 3 credits)

Seminar Classes:

- Three courses chosen from MMG 803 or MMG 991, or the equivalent in other departments at least two involving student presentations
- Four credits of MMG 892 sec 1 related to MMG department seminars

Teaching Requirement

- One semester as a Teaching Assistant usually done in the second year
- Must enroll once in MMG 892 sec 2 when serving as a TA
-

Other Requirements

- Completion of the Graduate School Responsible Conduct of Research (RCR) Seminar Series
- Participation in Annual Works in Progress (WiPs) seminar series

Comprehensive Exam

A written research proposal on the student's thesis project provided to the Comprehensive Exam Committee (CEC) two weeks prior to seminar and exam. The student then presents in an open seminar. Afterwards there is a closed questioning by the CEC on the student's project and breadth of knowledge in area. The deadline for completion is within 26 months after enrolling.

Donna Koslowsky
Director
Office 5174 Biomedical Physical Sciences
Email: koslowsk@msu.edu
Phone: 517-884-5353

Roseann Bills
Graduate Program Coordinator
2215 Biomedical Physical Sciences
Phone: 517-884-5288

Microbiology and Molecular Genetics

Year 1	Year 2	Year 3	Year 4	Year 5+
<p>Student interested in Microbiology</p> <p>Fall MMG 801 MMG 833 RCR Seminar Series Laboratory Rotations</p> <p>Spring (2 of the following or other relevant classes) BMB 805 PLB/BMB 810 MMG 861 (odd years only) RCR Seminar Series Laboratory Rotations Select major professor</p>	<p>MMG 892 sec 1</p> <p>Complete required courses</p> <p>Conduct thesis research</p> <p>Fall First guidance committee meeting</p>	<p>MMG 892 sec 1</p> <p>Complete required courses</p> <p>Continue thesis research</p> <p>Annual guidance committee meeting</p> <p>Fall Complete Comprehensive Exam</p>	<p>MMG 892 sec 1 (if needed)</p> <p>Continue thesis research</p> <p>Annual guidance committee meeting</p>	<p>MMG 892 sec 1 (if needed)</p> <p>Complete thesis research</p> <p>Write and defend thesis</p>
<p>Student interested in Molecular Genetics</p> <p>Fall (2 of the following or other) BMB 801 BMB 855 (odd years only) MMG 851 (odd years only) RCR Seminar Series Laboratory Rotations</p> <p>Spring (2 of the following or other relevant classes) BMB 802 MMG 813 (even years only) BMB 825 MMG 835 RCR Seminar Series Laboratory Rotations Select major professor</p>	<p>Fall or Spring Complete required teaching assistantship MMG 892 sec 2</p> <p>Establish guidance committee</p>	<p>Fall or Spring Complete required topics Seminar courses (MMG 803, 991 or equivalent)</p>		

Microbiology and Molecular Genetics Electives

- BMB 801: Molecular Biology (Fall, 3 credits)
- BMB 802: Metabolic Regulation, Signal Transduction (Spring, 3 credits)
- BMB 805: Protein Structure Design and Mechanism (Spring, 3 credits)
- BMB 825: Cell Structure and Function (Spring, 3 credits)
- BMB/PLB 856: Plant Molecular and Omic Biology (Spring, 3 credits)
- BMB 864: Plant Biochemistry (Fall, 3 credits)
- MMG801: Integrative Microbial Biology (Fall, 4 credits)
- MMG 813: Molecular Virology (Spring even years, 3 credits)
- MMG 835: Eukaryotic Molecular Genetics (Spring, 3 credits)
- MMG 851: Immunology (Fall odd years, 3 credits)
- MMG 861: Advanced Microbial Pathogenesis (Spring odd years, 3 credits)
- PHM 820: Cellular, Molecular Integrative Systems Pharmacology & Toxicology (Fall, 4 credits)
- PHM 830: Experimental Design and Data Analysis (Fall, 3 credits)
- PHM/PSL 827: Physiology and Pharmacology of Excitable Cells (Fall, 4 credits)
- PLB 802: Introduction to Bioinformatics (Spring odd years, 3 credits)
- PLB 810: Theories and Practices in Biology (Spring, 3 credits)
- PLB 812: Plant Genomics (Fall, 3 credits)
- PLB/ZOL 849: Evolutionary Biology (Spring, 3 credits)
- PLB 865: Plant Growth and Development (Fall, 3 credits)
- PLP 884: Prokaryotic Diseases of Plants (Fall even years, 3 credits)
- PSL 828: Cellular and Integrative Physiology (Spring, 4 credits)
- STT 855: Statistical Genetics (Fall odd years, 3 credits)
- ZOL/MMG 855: Molecular Evolution: Principles and Techniques (Fall, odd years, 3 credits)

Or other courses approved by the Director of Graduate Studies