Required Courses for Graduate Students in the *Microbiology* (Micro) Research Group

Micro Research Group

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Micro – Required Courses

- BIOL 701 – *Ethics in Scientific Research* (1 credit)

  Students must take this course during their first year in the Program.

Micro – Required Courses

- BIOL 796D – *Graduate Seminar* (*Current Topics in Microbiology*) (1-2 credits)

  Master's students must enroll in BIOL 796D throughout their tenure in the Program.

  Doctoral students must enroll in BIOL 796D before passing their Comprehensive Examination, and are encouraged to enroll in the course throughout their tenure in the Program.

  Biology 796D may be repeated as needed, but only 10 credits can be applied towards the degree program.

Micro – Required Participation

- BIOL 790D – *Research Colloquium in Life Sciences* (1-2 credits)
- Starting in Fall 2010, <u>all</u> Micro students must attend the Colloquium every semester even if not enrolled for credit.
- Each student must also present his/her research in the Colloquium once per academic year.
- Students may register for Biol 790D each semester, but no more than ten (10) credits can apply toward the degree.

Micro – Required Core and Elective Classes

- All Micro Master's students who joined the Program in Fall 2008 or later must take at least three (3) didactic graduate courses.
- All Micro Doctoral students who joined the Program in Fall 2008 or later must take at least six (6) didactic graduate courses.
- These didactic graduate courses must include one (1) core class (see list below). MS students must choose two (2) classes from the elective list, and PhD students must choose five (5).

Micro – Core Courses

- BIOL 609 – *Virology* (3 credits)
- BIOL 618 – *Microbial Ecology* (3 credits)
- BIOL 653 – *Immunology* (3 credits)
- BIOL 660 – *Microbial Physiology* (3 credits)
- BIOL 664 – *Bacterial Pathogenesis* (3 credits)
- BIOL 685 – *Microbial Genetics* (3 credits)
- If a student takes more than one of the above core classes, it can be credited as an elective.

Micro – Elective Courses

- Elective courses taken by Microbiology graduate students include, but are not limited to the following courses.

Micro – Elective Courses (continued)

- BIOL 607 – *Molecular Biology* (3 credits)
- BIOL 730D – *Special Lectures in Life Sciences* (*Microbiology*) (3 credits)
- BIOL 794 – *Techniques in Molecular Biology* (3 credits)
- CHEM 770 – *Protein Chemistry* (3 credits)
- CHEM 771 – *Metabolism and Energetics* (3 credits)
- CHEM 772 – *Nucleic Acid Chemistry* (3 credits)

Micro – Elective Courses (continued)

- EOH 747 – *Transmission of Infectious Disease* (3 credits)
- GEOL 720 – *Advanced Geochemistry* (4 credits)
- STAT 691 – *Statistics for Scientists I* (3 credits)
- STAT 692 – *Statistics for Scientists II* (3 credits)

Micro – Course Work

- The Advisory Committee may require the student to take certain specific courses, depending on the person's academic background and research objectives.

Micro – Thesis/Dissertation Credits

- Master's students must take six (6) credits of Biol 797 (*Thesis)* in order to graduate. Students may register for more than 6 credits of Biol 797, but only six (6) credits can be applied toward the MS degree.
- Doctoral students must take twelve (12) credits of Biol 799 (*Dissertation)* in order to graduate. Students may register for more than 12 credits, but no more than eighteen (18) can be applied toward the PhD degree.

Additional Graduate Courses

- Master's students must complete 30 credits in the program, and Doctoral students must complete 60. In addition to the above required classes, students may also take the following:

- Biology 789 — *Independent Graduate Study in Life Sciences* (1-3 credits). This class can be used to receive research credit related to a student's thesis or dissertation project prior to taking Biol 797 or Biol 799. Biol 789 can be repeated, but only nine (9) credits can be applied toward an MS or PhD degree.

Additional Graduate Courses (continued)

- Biology 791 – *Research Laboratory Discussions in Life Sciences* (1-2 credits). With the Advisor's approval, a graduate student can enroll in this class to receive credit for presenting and participating during formal laboratory meetings with his/her Advisor's research group. This course may be repeated, but only 10 credits can apply toward a MS or PhD degree.

Sample Program of Study: Micro Master's Student

	Credits
– Three 600- or 700-level didactic courses	9
– BIOL 701 – *Ethics in Scientific Research*	1
– BIOL 790D – *Research Colloquium*	4
– BIOL 791 – *Research Lab. Discussions*	4
– BIOL BIOL 796D – *Graduate Seminar*	6
– BIOL 789 – *Independent Study* ("Pre-thesis")	3
– BIOL 797 – *Thesis*	6
Total	≥30

Sample Program of Study: Micro Doctoral Student

	Credits
– Six 600- or 700-level didactic classes	18
– BIOL 701 – *Ethics in Scientific Research*	1
– BIOL 790D – *Research Colloquium*	8
– BIOL 791 – *Research Lab. Discussions*	8
– BIOL 796D – *Graduate Seminar*	8
– BIOL 789 – *Independent Study*	6
– BIOL 799 – *Dissertation*	12
Total	≥60