

## DEPARTMENT OF BIOLOGY

### GRADUATE PROGRAM GUIDE FOR MICROBIOLOGY DEGREE

STUDENT NAME: \_\_\_\_\_ DATE \_\_\_\_\_

DEGREE: \_\_\_\_\_

**INSTRUCTIONS:** Use this form to designate the areas of specialization that you intend to satisfy in your degree plan. For Ph.D. students, four (4) areas must be designated, whereas three (3) areas are required for M.S. students. Each chosen area must be fulfilled by passing a course from the approved course list for that area (see attached). A minimum of two (2) semester hours must be completed in each area selected. Alternatively, a faculty member may certify that you have sufficient expertise in an area. In the space below, specify the approved course or provide faculty signatures for the areas that you intend to satisfy for your degree. NOTE: the courses selected must appear on the student's degree plan.

	Course	or	<u>Professor's Approval</u>
1. Microbiol. & Immunology	_____		_____
2. Biochemistry/Physiology	_____		_____
3. Cell Biology	_____		_____
4. Developmental Biology	_____		_____
5. Genetics	_____		_____
6. Molecular Biology	_____		_____
7. Computational/ Mathematical Biology	_____		_____

We certify that \_\_\_\_\_ will be required to demonstrate competence in the areas listed above by taking and completing with a grade of B or better the courses named, or by demonstrating expertise in the area to our satisfaction. All work must be completed prior to the preliminary examination for Ph.D. students.

\_\_\_\_\_ Chair

\_\_\_\_\_ Member

\_\_\_\_\_ Member

\_\_\_\_\_ Member

\_\_\_\_\_ Member

\_\_\_\_\_ Student

## **COURSES THAT FULFILL GRADUATE REQUIREMENTS FOR THE MICROBIOLOGY DEGREE**

### **PATHOGENIC MICROBIOLOGY AND IMMUNOLOGY**

- GENE 610 Mammalian Immunogenetics (3)
- MMIM 923 Medical Microbiology I (4)
- MMIM 924 Medical Microbiology II (4)
- VPAR 601 Parasitology (4)
- VTMI 643 Pathogenic Microbiology (4)

### **BIOCHEMISTRY/PHYSIOLOGY**

- BICH 603 General Biochemistry (3)
- BICH 604 General Biochemistry (3)
- BICH 624 Enzymes, Proteins, and Nucleic Acids (3)
- BICH 625 Nucleic Acid - Protein Interactions (1)
- BIOL 672 Molecular Biology of Photosynthesis (1)
- MICR 438 Bacterial Physiology (acceptable until graduate course is offered) (4)

### **CELL BIOLOGY**

- BIOL 430 Principles of Microscopy (3)
- BIOL 617 Cell Biology (at least 3 of 5)
- BIOL 602 Transmission Electron Microscopy (1)
- BIOL 670 The Cell Cycle (1)
- BIOL 674 Cellular and Molecular Aspects of Development (3)
- MICR 614 Microbial Development (3)
- ZOOL 601 Biological Clocks (3)

### **DEVELOPMENTAL BIOLOGY**

- BIOL 611 Molecular Biology of Differentiation & Development (3)
- BIOL 674 Cellular and Molecular Aspects of Development (3)
- MICR 614 Microbial Development (3)

### **GENETICS**

- MICR 406 (=GENE 406) Bacterial Genetics (3)
- GENE 603 Genetics (3)
- GENE 631 (=BICH 631) Biochemical Genetics (3)

### **MOLECULAR BIOLOGY**

- BICH 431 (=GENE 431) Molecular Genetics (3)
- BICH 631 (=GENE 631) Biochemical Genetics (3)
- BICH 662 Eukaryotic Transcription (1)
- MICR 614 Microbial Development (3)
- MICR 620 Transcription Mechanisms (3)

### **COMPUTATIONAL/MATHEMATICAL BIOLOGY**

- STAT 651 Statistics in Research I (3)
- STAT 652 Statistics in Research II (3)
- WFSC 604 System Analysis and Simulation in Ecology and Natural Resource Management (3)

WFSC 624 Dynamics of Populations (4)

These courses are a guide for the Advisory Committee and the student. Other courses and 689 Special Topics or 685 Problems may be substituted with the approval of the Committee as evidenced by signatures on the Departmental Graduate Program Guide.