

**Degree Requirements**

Candidates for the degree in Biology with a specialized field of study in Microbes and Immunity must complete the following requirements. All courses must be taken for a letter grade unless otherwise noted. Students in this field of study are required to have their checklist signed by their advisor and submitted to the Student Services Office by the end of their junior year. Students may petition **in advance** for the substitution of either equivalent or more advanced courses. Petitions are available in the department's Student Services Office. The Microbes and Immunity field of study will be noted in the program section of the student's transcript.

**1. Core Courses**

BIOSCI 41 – Genetics, Biochemistry, and Molecular Biology

BIOSCI 42 – Cell Biology and Animal Physiology

BIOSCI or BIOHOPK 43 – Plant Biology, Evolution, and Ecology

**2. Writing in the Major and Introduction to Laboratory Science**

Students must fulfill their Writing in the Major requirement. This may be done by taking one of the following:

BIOSCI 44X – Core Experimental Laboratory

BIOHOPK 175H\* – Problems in Marine Ecology and Ecophysiology

BIOSCI or BIOHOPK 44Y – Core Experimental Laboratory

BIOHOPK 176H\* – Experimental Neurobiology

\* Please note that this course can also count towards the elective requirement. See section 5 (below) for guidelines.

**3. Required Foundational Breadth Courses**

CHEM 31A and 31B (or 31X), 33, 35, 36, 130, 131

PHYSICS 21, 22, 23, 24; or 41, 43, 45

MATH 19, 20, 21; or 41, 42

BIOSCI 141\* or BIOHOPK 174H\*

\* Please note that this course cannot also count towards the elective requirement

(Students may take up to two foundational breadth courses with the CR/NC grading option.)

**4. Four Courses in Microbiology, Immunology, Molecular Evolution**

Current list of approved courses:

BIOSCI 113 – Fundamentals of Molecular Evolution

CEE 177 – Aquatic Chemistry & Biology

BIOSCI 133 – Genetics of Prokaryotes

CEE 274A – Environmental Microbiology I

BIOSCI 177 – Plant Microbe Interaction\*\*

CEE 274B – Metabolic Biochemistry of Microorganisms

BIOSCI 213 – Biology of Viruses

CEE 274D – Pathogenesis & Disinfection

BIOSCI 230 – Molecular & Cellular Immunology

MI 104 – Innate Immunity

BIOHOPK 274 – Hopkins Microbiology

MI 211 – Advanced Immunology I

MI 212 – Advanced Immunology II

**5. One Course in Reading Scientific Literature**

Current list of approved courses:

MI 185 – Topics in Microbiology

BIOSCI 178 – Microbiology Literature\*\*

**6. Biology Electives**

Electives must include 12 units of 100-level or above courses offered in the Department of Biology or from the list of approved out-of-department electives.

**A.** No more than 6 units from any combination of individual instruction courses (BIOHOPK 175H, 176H, 199H, BIOSCI 198/X, 199/X, 290, or 291) may be applied toward the total number of Biology elective units.

**B.** No more than one CR/NC course may be used to fulfill this requirement.

**7. Research Requirements**

Students in the Microbes and Immunity field of study must fulfill the requirements for graduation with honors in Biology. In order to graduate with Honors students must submit a petition to the Undergraduate Research Coordinator.

**A.** 10 units of BIOSCI 199/X or BIOHOPK 199H (6 of these units may be applied toward Biology Electives)

**B.** Poster/Oral Presentation

**C.** Research Thesis

\*\*these courses will be introduced starting in the 2008-2009 academic year.

<b>CORE COURSES</b> Letter-grade only	<input type="checkbox"/> 41 <input type="checkbox"/> 42 <input type="checkbox"/> 43					
<b>WRITING IN THE MAJOR AND INTRODUCTION TO LABORATORY SCIENCE</b> Students must take <u>one</u> of these courses.	<input type="checkbox"/> 44X or <input type="checkbox"/> 44Y or <input type="checkbox"/> 175H* or <input type="checkbox"/> 176H* * Please note that this course can also count towards the elective requirement.					
<b>REQUIRED FOUNDATIONAL BREADTH COURSES</b> Students may take up to two foundational breadth courses with the CR/NC grading option.	<b>CHEMISTRY</b> <input type="checkbox"/> 31A <input type="checkbox"/> 31B    or <input type="checkbox"/> 31X <input type="checkbox"/> 33 <input type="checkbox"/> 35 <input type="checkbox"/> 36 <input type="checkbox"/> 130 <input type="checkbox"/> 131 <b>PHYSICS</b> <input type="checkbox"/> 21 <input type="checkbox"/> 22 <input type="checkbox"/> 23 <input type="checkbox"/> 24                      or <input type="checkbox"/> 41 (53) <input type="checkbox"/> 43 (55) <input type="checkbox"/> 45 (51) <b>MATH</b> <input type="checkbox"/> 19 <input type="checkbox"/> 20 <input type="checkbox"/> 21                      or <input type="checkbox"/> 41 <input type="checkbox"/> 42 <b>ADDITIONAL FOUNDATIONAL BREADTH</b> <input type="checkbox"/> BIOSCI 141*    or <input type="checkbox"/> BIOHOPK 174H* *May only fulfill one requirement. Students can use for foundational breadth OR elective credit.					
<b>FOUR COURSES IN MICROBIOLOGY, IMMUNOLOGY, MOLECULAR EVOLUTION</b> Letter-grade only	<input type="checkbox"/> BIOSCI 113 <input type="checkbox"/> BIOSCI 213 <input type="checkbox"/> CEE 177 <input type="checkbox"/> CEE 274D <input type="checkbox"/> BIOSCI 133 <input type="checkbox"/> BIOSCI 230 <input type="checkbox"/> CEE 274A <input type="checkbox"/> MI 211 <input type="checkbox"/> BIOSCI 177 <input type="checkbox"/> BIOHOPK 274 <input type="checkbox"/> CEE 274B <input type="checkbox"/> MI 212 <input type="checkbox"/> MI 104					
<b>ONE COURSE IN READING SCIENTIFIC LITERATURE</b> Letter-grade only	<input type="checkbox"/> MI 185    or <input type="checkbox"/> BIOSCI 178					
<b>BIOLOGY ELECTIVES</b> 12 units. Up to 6 units of research/teaching. One course may be taken CR/NC. See guidelines on Track Info Sheet for more information.	BIO ELECTIVES	UNITS	OUT-OF-DEPT	UNITS	RESEARCH and TEACHING	UNITS
<b>RESEARCH REQUIREMENTS</b>	<input type="checkbox"/> 10 Units of BIOSCI 199/X or BIOHOPK 199H (6 of these units can be used toward electives above) <input type="checkbox"/> Poster/Oral Presentation <input type="checkbox"/> Thesis					
Total Units			Total Units	Total Units		

Student's Name: \_\_\_\_\_

SU ID#: \_\_\_\_\_ Date: \_\_\_\_\_

Advisor's Signature: \_\_\_\_\_  
 (Students: please complete checklist prior to meeting with your advisor.)

Unfinished Requirements:
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