# MICROBIOLOGY UNDERGRADUATE PROGRAM

## Program of Study

**Degree:** BS, Microbiology (Catalog: 2017-18)

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### I) Communications (13 credits)

- **Engl 150** (3) and **Engl 250** (3)
- **Sp Com 212** (3)
- **Engl 302** (3) or **Engl 309** (3) or **Engl 314** (3) or **Engl 312** (3)
- **Lib 160** (1)

### II) Mathematical Sciences (11-12 credits)

**Basic Mathematics**

2 semesters with at least one semester of calculus

Suggested options:

- **Math 143** (4) Pre-Calc & **Math 160** (4) Surv Calc
- **Math 145** (3) Trig & **Math 160** (4) Surv Calc
- **Math 165** (4) & **Math 166** (4) Calc I&II
- **Math 165** (4) & **Stat 301** (4)

### III) Physical Sciences (23-31 credits)

#### General Chemistry (8 credits)

- **Chem 177** (4), **Chem 177L** (1), and **Chem 178** (3)

#### Physics (5 or 10 Credits)

- **Phys 111/111L** (5) and **Phys 112/112L** (5)
  General (recommended)
- **Phys 115** (4) & **Phys 115L** (1) Phys for Life Sci. (only if not doing further schooling)

#### Organic Chemistry (7 credits)

- **Chem 331** (3), **Chem 331L** (1), and **Chem 332** (3)

#### Biochemistry Choose 1 of the following (3-6 credits)

- **BBMB 404** (3) and **BBMB 405** (3)
- **BBMB 301** (3)
- **BBMB 316** (3)

### IV) Personal Development, Human Relations, and Global Awareness (Total of 15 credits)

- Three credits in **humanities**
- Three credits in **social sciences**
- Three credits in **ethics (See list)**
- Three credits in **international persp. (See list)**
- Three credits in **US diversity (See list)**

### V) Biological Sciences (15 credits)

- **Biol 211** (3) and **Biol 211L** (1)
- **Biol 212** (3) and **Biol 212L** (1)
- **Biol 313** (3) and **Biol 313L** (1)
- **Biol 314** (3) or **Biol 328** (3)

### VI) Microbiology (Total of 31 credits)

#### Core Microbiology Courses (16 credits)

- **MICRO 110** (1) Orientation
- **MICRO 302** (3) Biology of Micro
- **MICRO 310** (3) Medical Microbiology
- **MICRO 320** (4) Molecular and Cellular Bact.
- **MICRO 430** (3) Micro Diversity & Ecology
  or **MICRO 477** (3) Bact-Plant Interactions
- **MICRO 456** (3) Mycology
- **MICRO 450** (2) Senior Seminar
- **MICRO 451** (R) Senior Survey

#### Core Laboratory Courses (6 Credits)

- **MICRO 302L** (1) General Micro Lab
- **MICRO 310L** (1) Medical Micro Lab or **MICRO 475L** (1) Immunology Lab
- **MICRO 440** (4) Microbial Genetics & Physiology & Diversity & Ecology Lab

#### Microbiology Electives – (9 credits required) with no more than 3 credits from laboratory courses

**Common Clinical Electives**

- **MICRO 353** (3) Intro Parasitology
- **MICRO 374** (3) Insects & Our Health
- **MICRO 408** (3) Virology
- **MICRO 475** (3) Immunology
- **MICRO 475L** (1) Immunology Lab
- **MICRO 586** (4) Medical Bacteriology

**Common Environmental Electives**

- **PLP 408** (3) Principles of Plant Pathology
- **MICRO 410** (2) Insect-Virus Interactions
- **MICRO 430** (3) Micro Diversity & Ecology
- **MICRO 456** (3) Mycology
- **MICRO 477** (3) Bacteria-Plant interactions
- **MICRO 485** (3) Soil Micro Ecology
- **MICRO 487** (3) Microbial Ecology

**Common Physiology/Genetics Electives**

- **MICRO 402** (3) Microbial Genetics
- **MICRO 410** (2) Insect-Virus Interactions
- **MICRO 430** (3) Micro Diversity & Ecology

**Common Food Microbiology Electives**

- **MICRO 407** (3) Micro Food Safety
- **MICRO 419** (3) Foodborne Hazards
- **MICRO 420** (3) Food Microbiology
- **MICRO 421** (3) Food Microbiology Lab

Other courses upon written request & review by the Undergrad Micro Supervisory Committee.

- **F/S/SS Micro 490** (1-3) Independent Study

### VII) Electives (8-16 credits)

Courses to obtain 128 total credit hours

Minors to Consider: Food Safety

Emerging Global Diseases
### Microbiology Eight Semester Plan 17-18 Catalog

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<tr>
<th>Fall</th>
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<tbody>
<tr>
<td>Chem 177/177L General Chemistry &amp; Lab</td>
<td>Chem 178 General Chemistry</td>
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<tr>
<td>Biol 211/211L Principles of Biology &amp; Lab</td>
<td>Biol 212/212L Principles of Biology &amp; Lab</td>
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<td>Engl 250 or 150 Written Oral Visual &amp; Lab</td>
<td>Stat 104 Statistics</td>
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<tr>
<td>Micro 101 Microbes in Society</td>
<td>Micro 302/302L Biology of Microorganisms &amp; Lab</td>
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<td>Micro 110 Orientation in Microbiology</td>
<td>Social Sciences Social Sciences (from list)</td>
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<td>Lib 160 Library Instruction</td>
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<tr>
<td>Chem 331/331L Organic Chemistry I &amp; Lab</td>
<td>Chem 332/332L Organic Chemistry II</td>
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<tr>
<td>Micro 310/310L Medical Microbiology &amp; Lab</td>
<td>Micro Micro Environmental or Elective</td>
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<tr>
<td>Math 143, 145 or Calc Trig, Pre-Calc, or Calculus</td>
<td>Biol 313/313L Genetics &amp; Lab</td>
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<td>Ethics Ethics</td>
<td>Humanities Humanities (from list)</td>
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<tr>
<td>Biol 314 or Biol 328 Cell Biology or cellular aspects of human diseases</td>
<td>Micro 320 Molecular and Cellular Bacteriology.</td>
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<td>Micro Choice Micro Environmental or Micro Elective</td>
<td>Phys 112/112L General Physics II or elective</td>
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<tr>
<td>Phys 111/111L or Phys 115/115L General Physics I or Phys for Life Sci. with lab</td>
<td>Engl Choice Advanced English – 302, 309, 312 or 314</td>
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<td>Sp Cm 212 Fundamentals of Public Speaking</td>
<td>US Diversity US Diversity (from list)</td>
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<td>General Elective General Elective</td>
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<td>Micro 440 Lab in Microbial Phys, Gen &amp; Div.</td>
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<td>Micro Choice Microbiology Elective</td>
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<td>Micro 451 Micro Senior Survey</td>
<td>Micro 450 Undergraduate Seminar</td>
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<td>Int. Perspective International perspectives</td>
<td>BBMB 405 Biochemistry II</td>
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**Courses that work well for summer or study-abroad**