Microbial Systems Option

All Biotechnology Options have the same Freshman and Sophomore year requirements.

**Freshman Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRIT 101W</td>
<td>College Writing I</td>
<td>3</td>
</tr>
<tr>
<td>BIOB 105CS</td>
<td>Introduction to Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>BIOB 170IN</td>
<td>Principles of Biological Diversity</td>
<td>4</td>
</tr>
<tr>
<td>CHMY 141</td>
<td>College Chemistry I</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following: 3

- BIOB 318 - Biometry
- STAT 216Q - Introduction to Statistics
- M 165Q - Calculus for Technology I

- BIOB 160 - Principles of Living Systems
- or BIOB 260 - Cellular and Molecular Biology
- CHMY 143 - College Chemistry II

Select one of the following: 3-4

- M 161Q - Survey of Calculus
- M 166Q - Calculus for Technology II

**University Core and Electives**

11

**Year Total:**

39-40

**Sophomore Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOB 375</td>
<td>General Genetics</td>
<td>3</td>
</tr>
<tr>
<td>CHMY 321</td>
<td>Organic Chemistry I</td>
<td>4</td>
</tr>
</tbody>
</table>
- or CHMY 211 - Elements of Organic Chemistry
| BIOM 360    | General Microbiology                 | 5       |
| CHMY 323    | Organic Chemistry II                 | 4       |
| ECNS 101IS  | Economic Way of Thinking             | 3       |

**University Core and Electives**

8-12

**Year Total:**

27-31

**Total Program Credits:**

66-71

* If a student takes BIOB 318 Biometry or STAT 216Q Introduction to Statistics, then the student must take M 161Q Survey of Calculus. If a student takes M 165Q Calculus for Technology I, then the student must take M 166Q Calculus for Technology II.

** If a student takes CHMY 321 Organic Chemistry I, the student must take CHMY 323 Organic Chemistry II.

**Microbial Systems Option**

**Junior Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCH 380</td>
<td>Biochemistry</td>
<td>5</td>
</tr>
<tr>
<td>PHSX 205</td>
<td>College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>BIOB 410</td>
<td>Immunology</td>
<td>3</td>
</tr>
</tbody>
</table>

**University Core and Electives**

3

**PHSX 207 - College Physics II**

4

**University Core and Electives**

11

**Year Total:**

15 15

**Senior Year**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOM 450</td>
<td>Microbial Physiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOM 494</td>
<td>Seminar/Workshop</td>
<td>1</td>
</tr>
<tr>
<td>BIOM 490R</td>
<td>Undergraduate Research</td>
<td>3</td>
</tr>
</tbody>
</table>

**University Core and Electives**

8

**BIOM 430 - Applied and Environmental Microbiology**

**BIOM 452 - Soil & Environmental Microbiology**

or **BIOM 415 - Microbial Diversity, Ecology, and Evolution**

**BIOM 410 - Microbial Genetics**

**BIOM 494 - Seminar/Workshop**

**University Core and Electives**

15 15

**Total Program Credits:**

60

Select at least three of the following:

- BCH 441 Biochemistry of Macromolecules
- BCH 442 Metabolic Regulation
- BCH 444R Biochemistry & Molecular Biology Methods
- BIOB 424 Ethical Practice of Science
- BIOH 405 Hematology
- & BIOH 406 and Hematology Laboratory
- BIOH 445 Intro Pharmacology
- BIOM 405 Host-Associated Microbiomes
- BIOM 425 Toxicology: Science of Poisons
- BIOM 431 Medical Bacteriology & BIOM 432 and Med Bacteriology Lab
- BIOM 435 Virology
- BIOM 455R Research Mthds in Microbiology
- EBIO 438 Bioprocess Engineering
- EMAT 251 Materials Structures and Prop
- ENSC 245IN Soils
- ENSC 272CS Water Resources
- ENSC 353 Environmental Biogeochemistry

A minimum of 120 credits is required for graduation; 42 of these credits must be in courses numbered 300 and above.