Microbiology (Minor)

To see more about what you will learn in this program, visit the Learning Outcomes website (https://apps.oirp.ncsu.edu/pgas/).

A minor in Microbiology is available to undergraduates majoring in any field, but may be especially appropriate for students in biological or agricultural sciences, physical sciences or science education. This minor will be useful to students who want to strengthen their understanding of either basic cellular processes or applied areas such as the role of microorganisms in industry, agriculture or health.

Admissions

To be admitted to the program, a student must have a GPA of at least 2.0. Application for admission to any University minor program is now available via MyPack Portal. Admission will be based upon the student’s academic record, and in most cases no longer requires departmental review. To apply to Add a Minor, go to: https://go.ncsu.edu/minor_coda.

Certification

The student’s minor advisor will review the student’s record and certify that the student has completed the requirements for the minor by signing the “Application for Minor” form. Copies of the signed form will be forwarded to the student’s major department and the Dean’s office of the college in which the student is completing the requirements for a major. Upon certification, the student’s transcript will include the statement “Minor in Microbiology.” The minor must be completed no later than the semester in which the student expects to graduate from his or her degree program. Paperwork for certification should be completed no later than during the registration period for the student’s final semester at NC State.

Contact Person

Jonathan Olson
Biological Sciences
4544B Thomas Hall
919-515-7860
jwolson@ncsu.edu

Plan Requirements

- A grade of ‘C-' or better will be required for all courses taken to fulfill the minor requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 351</td>
<td>General Microbiology</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>MB 352</td>
<td>General Microbiology Laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or MB 354</td>
<td>Inquiry-Guided Microbiology Lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCH 451</td>
<td>Principles of Biochemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or BCH 351</td>
<td>General Biochemistry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Elective Courses | |

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBS/FS 426</td>
<td>Upstream Biommanufacturing Laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEC/CHE 463</td>
<td>Fermentation of Recombinant Microorganisms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEC 480</td>
<td>cGMP Fermentation Operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIT/MB 210</td>
<td>Phage Hunters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIT/MB 211</td>
<td>Phage Genomics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIT 410</td>
<td>Manipulation of Recombinant DNA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIT 466</td>
<td>Animal Cell Culture Techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSC 495</td>
<td>Research Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSC 495</td>
<td>Special Topics in Biological Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB/FS 405</td>
<td>Food Microbiology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 406/FS 506</td>
<td>Food Microbiology Lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 411</td>
<td>Medical Microbiology Laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 412</td>
<td>Medical Microbiology Laboratory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 414</td>
<td>Microbial Metabolic Regulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 420/520</td>
<td>Fundamentals of Microbial Cell Biotransformations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 441</td>
<td>Immunology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 451</td>
<td>Microbial Diversity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 452</td>
<td>Microbial Diversity Lab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 455</td>
<td>Microbial Biotechnology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 461</td>
<td>Molecular Virology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB 492</td>
<td>External Learning Experience 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB/SSC 532</td>
<td>Soil Microbiology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 15

1 These courses require prior approval of the minor advisor: Jonathan Olson, 4544B Thomas Hall, 919-515-7860, jwolson@ncsu.edu.