Microbiology, B.S.

Requirements

The Bachelor of Science with a major in microbiology requires a minimum of 120 s.h., including 60-64 s.h. of work for the major, depending on the track. Courses for the major must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. Courses for the major may not be taken pass/nonpass. Students also must complete the College of Liberal Arts and Sciences GE CLAS Core.

Students must complete at least 12 s.h. of the required 18-19 s.h. in Department of Microbiology and Immunology courses at the University of Iowa.

The major in microbiology can be pursued on either a pre-medicine or a scholar track.

Students in the pre-medicine track complete admission requirements for the Carver College of Medicine and for most colleges of medicine as an integral part of the completion of their major requirements. This track is recommended for pre-medical, pre-dental, and pre-pharmacy students.

Students in the scholar track pursue a curriculum with streamlined organic chemistry and physics requirements and expanded microbiology and immunology courses, including advanced laboratory and global health studies coursework. The scholar track is recommended for students interested in pursuing graduate training or in developing a career as a microbiologist.

Students may shift from one track to the other during their program of study.

The B.S. with a major in microbiology in the pre-medicine or the scholar track requires the following coursework.

### Pre-Medicine Track

Students in the pre-medicine track complete the following coursework.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Supporting Coursework</td>
<td>42-43</td>
</tr>
<tr>
<td></td>
<td>Microbiology and Immunology Courses</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Advanced Elective Coursework</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Hours</strong></td>
<td><strong>63-64</strong></td>
</tr>
</tbody>
</table>

#### Supporting Coursework

<table>
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<tr>
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<tbody>
<tr>
<td></td>
<td>All of these:</td>
<td></td>
</tr>
<tr>
<td>BIOL:1411-BIOL:1412</td>
<td>Foundations of Biology - Diversity of Form and Function</td>
<td>8</td>
</tr>
<tr>
<td>BMB:3120 &amp; BMB:3130</td>
<td>Biochemistry and Molecular Biology I-II</td>
<td>6</td>
</tr>
<tr>
<td>CHEM:1110 &amp; CHEM:1120</td>
<td>Principles of Chemistry I-II</td>
<td>8</td>
</tr>
<tr>
<td>CHEM:2210 &amp; CHEM:2220</td>
<td>Organic Chemistry I-II</td>
<td>6</td>
</tr>
<tr>
<td>CHEM:2410</td>
<td>Organic Chemistry Laboratory</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>One of these:</td>
<td></td>
</tr>
<tr>
<td>BIOS:4120</td>
<td>Introduction to Biostatistics</td>
<td>3</td>
</tr>
</tbody>
</table>
Advanced Elective Coursework

Code          Title                                      Hours
3 s.h. from these:
BIOL:2723     Cell Biology                                3
BIOL:3314/   Genomics                                    3
IGPI:3314
BIOL:4213/   Bioinformatics                              2,4
GENE:4213/   BMB:3310/                                 3
IGPI:4213     CBIO:3310/                               3
MMED:3310
CPH:2230      Finding Patient Zero: The Exploration of Infectious Disease Transmission and Pandemic Threats 3
GHS:2000/     Introduction to Global Health Studies      3
ANTH:2103
GHS:2320/     Origins of Human Infectious Disease        3
ANTH:2320
Additional microbiology and immunology course (prefix MICR) numbered MICR:3147 or above, excluding MICR:3164 3

Scholar Track

Students in the scholar track complete the following coursework.

Code          Title                                      Hours
Supporting Coursework  35-36
Microbiology and Immunology Courses  19
Advanced Elective Coursework  6
Total Hours  60-61

Supporting Coursework

Code          Title                                      Hours
All of these:
BIOL:1411-   Foundations of Biology - Diversity of Form and Function  8
BIOL:1412
BMB:3120 &   Biochemistry and Molecular Biology I-II  6
BMB:3130
CHEM:1110 &  Principles of Chemistry I-II  8
CHEM:1120
CHEM:2210    Organic Chemistry I  3
PHYS:1400    Basic Physics  4
One of these:
BIOS:4120    Introduction to Biostatistics  3
MATH:1460    Calculus for the Biological Sciences  4
MATH:1550    Engineering Mathematics I: Single Variable Calculus  4
MATH:1850    Calculus I  4
STAT:3510/   Biostatistics  3
IGPI:3510
One of these:
GHS:2000/    Introduction to Global Health Studies  3
ANTH:2103
GHS:2320/    Origins of Human Infectious Disease  3
ANTH:2320

In addition, this course may be recommended for some students:
CNW:2680     The Art and Craft of Creative Nonfiction  3

Microbiology and Immunology Courses

Students earn 19 s.h. in Department of Microbiology and Immunology courses from the following.

Code          Title                                      Hours
MICR:2157     General Microbiology (required with a grade of C or higher)  3
MICR:2158     General Microbiology Laboratory (required with a grade of C or higher)  2
MICR:3145     Honors in Microbiology Thesis Preparation (required for honors in microbiology)  1
One of these:
MICR:3165     Bacteria and Human Disease Laboratory and Discussion  3
MICR:3178     Virology Laboratory  2
MICR:4161     Undergraduate Research in Microbiology (must be taken for at least 2 s.h.) arr.
MICR:4171     Honors Undergraduate Research in Microbiology (must be taken for at least 2 s.h.) arr.

Additional microbiology and immunology courses (prefix MICR) numbered MICR:3147 or above, excluding MICR:3164; students select from the following:

MICR:3147     Immunology and Human Disease  3
MICR:3150     Eukaryotic Pathogens and Human Disease  2
MICR:3159     Bacteria and Human Disease  3
MICR:3160     Bacterial Physiology and Cell Biology  2
MICR:3165     Bacteria and Human Disease Laboratory and Discussion  3
MICR:3168     Viruses and Human Disease  3
MICR:3170     Microbial Genetics  2
MICR:3177     Virology Discussion  2
MICR:3178     Virology Laboratory  2
MICR:4161     Undergraduate Research in Microbiology arr.
MICR:4171     Honors Undergraduate Research in Microbiology arr.
MICR:5218     Microscopy for Biomedical Research arr.
MICR:5264     Directed Study in Microbiology arr.

A maximum of 4 s.h. earned in either MICR:4161 Undergraduate Research in Microbiology or MICR:4171 Honors Undergraduate Research in Microbiology may be counted toward the major. However, students earning honors in the major must complete 6 s.h. in MICR:4171 Honors Undergraduate Research in Microbiology; see Honors [p. ] in this section of the Catalog.
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<td>2,4</td>
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<tr>
<td>BMB:3310/CBIO:3310/MMED:3310</td>
<td>Practical Data Science and Bioinformatics</td>
<td>3</td>
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