BIOLOGICAL SCIENCES
MAJOR

Requirements

The Department of Biological Sciences offers two undergraduate degrees: the bachelor of science (B.S.) and the bachelor of arts (B.A.). Beyond the chemistry, physics, and math requirements, majors must complete a minimum of nine courses in biology for a B.S. degree and seven for a B.A. degree. Lecture and lab courses must be taken concurrently.

The program of biology courses is structured in the following way:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biology Courses</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Core Courses</strong></td>
<td></td>
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<tr>
<td>Select one of the following sequences:</td>
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<tr>
<td>Sequence 1:</td>
<td></td>
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<tr>
<td>BISC 1403 &amp; BISC 1413</td>
<td>Introductory Biology I and Introductory Biology Lab I</td>
<td></td>
</tr>
<tr>
<td>Sequence 2:</td>
<td></td>
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<tr>
<td>BISC 1401 Introduction to Biology I (Summer)</td>
<td></td>
<td></td>
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<tr>
<td>BISC 1402 Introduction to Biology II (Summer)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISC 2539 &amp; BISC 2549</td>
<td>General Genetics and General Genetics Lab</td>
<td>5</td>
</tr>
<tr>
<td>BISC 2561 &amp; BISC 2571</td>
<td>Ecology and Ecology Lab</td>
<td>5</td>
</tr>
<tr>
<td><strong>Distribution Courses</strong></td>
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<tr>
<td>Select a minimum of two of the following:</td>
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<tr>
<td>BISC 3221 &amp; BISC 3231</td>
<td>Human Anatomy and Human Anatomy Lab</td>
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<tr>
<td>BISC 3132 &amp; BISC 3142</td>
<td>Human Physiology and Human Physiology Lab</td>
<td></td>
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<tr>
<td>BISC 3521</td>
<td>Biochemistry</td>
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<tr>
<td>BISC 3643 &amp; BISC 3653</td>
<td>Microbiology and Microbiology Lab</td>
<td></td>
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<tr>
<td>BISC 3752</td>
<td>Molecular Biology</td>
<td></td>
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<tr>
<td>BISC 3754</td>
<td>Cell Biology</td>
<td></td>
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<tr>
<td><strong>Chemistry Courses</strong></td>
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<tr>
<td>CHEM 1321 &amp; CHEM 1331</td>
<td>General Chemistry I and General Chemistry Lab I</td>
<td>6</td>
</tr>
<tr>
<td>CHEM 1322 &amp; CHEM 1332</td>
<td>General Chemistry II and General Chemistry Lab II</td>
<td>6</td>
</tr>
<tr>
<td>CHEM 2521 &amp; CHEM 2541</td>
<td>Organic Chemistry I and Organic Chemistry Lab I</td>
<td>6</td>
</tr>
<tr>
<td>CHEM 2522 &amp; CHEM 2542</td>
<td>Organic Chemistry II and Organic Chemistry Lab II</td>
<td>6</td>
</tr>
<tr>
<td><strong>Physics Courses</strong></td>
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</tr>
<tr>
<td>Select one of the following sequences:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sequence 1:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 1701 &amp; PHYS 1511</td>
<td>Physics I and Physics I Lab</td>
<td></td>
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</tbody>
</table>

**Calculus Course**

Select one of the following:
- MATH 1206 Calculus I
- MATH 1207 Calculus II
- MATH 1203 Applied Calculus I
- MATH 1204 Applied Calculus II

**Elective Courses**

Select three elective BISC courses for the B.S. degree and one for the B.A. degree.

1. Either sequence of introductory courses is a prerequisite for all other biology courses in the major.
2. Elective courses, comprising all noncore courses offered (but including additional distribution courses beyond the two needed to meet Distribution Courses requirement above).
3. A score of 4 or 5 in AP Calculus AB or BC will fulfill the Mathematics requirement.

It is recommended that freshmen take the following in their first year:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1206</td>
<td>Calculus I</td>
<td></td>
</tr>
<tr>
<td>MATH 1207</td>
<td>Calculus II</td>
<td></td>
</tr>
<tr>
<td>MATH 1203</td>
<td>Applied Calculus I</td>
<td></td>
</tr>
<tr>
<td>MATH 1204</td>
<td>Applied Calculus II</td>
<td></td>
</tr>
</tbody>
</table>

Note that BISC 1403, BISC 1404, CHEM 1321, and CHEM 1322 (with their respective labs) are prerequisites for all advanced biology courses.

The following requirement is best fulfilled in sophomore year:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 2521 &amp; CHEM 2541</td>
<td>Organic Chemistry I and Organic Chemistry Lab I</td>
<td></td>
</tr>
<tr>
<td>CHEM 2522 &amp; CHEM 2542</td>
<td>Organic Chemistry II and Organic Chemistry Lab II</td>
<td></td>
</tr>
</tbody>
</table>

The following requirement is best fulfilled in junior year:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
</table>

**Physics sequence options:**

| Sequence 1: | |

Updated: 03-13-2020
PHYS 1701  Physics I  & PHYS 1511  and Physics I Lab
PHYS 1702  Physics II  & PHYS 1512  and Physics II Lab

Sequence 2:
PHYS 1501  General Physics I  & PHYS 1511  and Physics I Lab
PHYS 1502  General Physics II  & PHYS 1512  and Physics II Lab

C- is the minimum accepted grade for all courses in the biology major. All majors must meet with their faculty adviser each semester prior to registration to have their course schedules approved.

The following courses are college Core Curriculum Life Science courses and are not applicable to the major:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISC 1000</td>
<td>Life on the Planet Earth</td>
<td></td>
</tr>
<tr>
<td>BISC 1001</td>
<td>Human Biology</td>
<td></td>
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<tr>
<td>BISC 1002</td>
<td>Ecology: A Human Approach</td>
<td></td>
</tr>
<tr>
<td>BISC 1005</td>
<td>Aids: A Conspiracy of Cells</td>
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<tr>
<td>BISC 1008</td>
<td>The Finch, the Seed, and the Storm: Adventures in Contemporary Evolution</td>
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<tr>
<td>BISC 1010</td>
<td>Foundations of Biology</td>
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</tr>
</tbody>
</table>

Biology majors are expected to take all of their required major courses at Fordham. Exceptions may be made on a case-by-case basis for certain rare and compelling reasons.

**Availability**

The major in biological sciences is available at Fordham College at Rose Hill. Students in Fordham School of Professional and Continuing Studies may major in biological sciences only if their schedules are sufficiently flexible to permit them to take day courses at the Rose Hill campus.

*Fordham College at Rose Hill students: The requirements above are in addition to those of the Core Curriculum.*

*Professional and Continuing Studies students: The requirements above are in addition to those of the PCS Core Curriculum.*

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