# 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:

### Course | Title | Credits
--- | --- | ---
**Biology Courses**
- **Core Courses**
  - BISC 1403 & BISC 1413: Introductory Biology I and Introductory Biology Lab I
  - BISC 1404 & BISC 1414: Introductory Biology II and Introductory Biology Lab II
  - BISC 2539 & BISC 2549: General Genetics and General Genetics Lab
  - BISC 2561 & BISC 2571: Ecology and Ecology Lab
- **Distribution Courses**
  - Select a minimum of two of the following:
    - BISC 3221 & BISC 3231: Human Anatomy and Human Anatomy Lab
    - BISC 3132 & BISC 3142: Human Physiology and Human Physiology Lab
    - BISC 3405 & BISC 3415: Plant Biology and Plant Biology Lab
    - BISC 3521 & BISC 3541: Biochemistry and Organic Chemistry Lab
    - BISC 3643 & BISC 3653: Microbiology and Microbiology Lab
    - BISC 3752 & BISC 3754: Molecular Biology and Cell Biology
- **Chemistry Courses**
  - CHEM 1321 & CHEM 1331: General Chemistry I and General Chemistry Lab I
  - CHEM 1322 & CHEM 1332: General Chemistry II and General Chemistry Lab II
  - CHEM 2521 & CHEM 2541: Organic Chemistry I and Organic Chemistry Lab I
  - CHEM 2522 & CHEM 2542: Organic Chemistry II and Organic Chemistry Lab II
- **Physics Courses**
  - Select one of the following sequences:
    - **Sequence 1:**
      - PHYS 1701 & PHYS 1511: Physics I and Physics I Lab
      - PHYS 1702 & PHYS 1512: Physics II and Physics II Lab
    - **Sequence 2:**
      - PHYS 1501 & PHYS 1511: General Physics I and Physics I Lab
      - PHYS 1502 & PHYS 1512: General Physics II and Physics II Lab
  - **Calculus Course**
    - Select one of the following:
      - MATH 1203: Applied Calculus I
      - MATH 1204: Applied Calculus II
      - MATH 1206: Calculus I
      - MATH 1207: 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. A score of 4 or 5 in AP Calculus AB or BC will fulfill the Mathematics requirement.
3. Elective courses comprise all courses with the attribute BIEL (see list below). Such courses include additional Distribution courses beyond the two needed to meet Distribution courses requirement. Courses counted toward the Distribution course requirement cannot be double-counted toward the Elective course requirement. Only one tutorial (BISC 4999) can count toward the major.

## Elective courses

Courses in this group have the BIEL attribute.

### Course | Title | Credits
--- | --- | ---
- BISC 3000: Environmental Science
- BISC 3132: Human Physiology
- BISC 3221: Human Anatomy
- BISC 3244: Evolutionary Biology
- BISC 3405: Plant Biology
- BISC 3466: Urban Ecology & Evolution
- BISC 3521: Biochemistry
- BISC 3643: Microbiology
- BISC 3752: Molecular Biology
- BISC 3754: Cell Biology
- BISC 3893: Introduction to Virology
- BISC 4530: Cancer Biology and Signaling
- BISC 4532: Neuroscience
- BISC 4575: Conservation Biology
- BISC 4642: Animal Behavior
- BISC 4693: Developmental Biology
- BISC 4792: Senior Thesis Research
- BISC 4999: Research Tutorial
- ENVS 3000: Environmental Science

It is recommended that first year students take the following:

### Course | Title | Credits
--- | --- | ---
- MATH 1206: Calculus I

Updated: 07-03-2024
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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 1207</td>
<td>Calculus II</td>
<td></td>
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<tr>
<td>MATH 1203</td>
<td>Applied Calculus I</td>
<td></td>
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<tr>
<td>MATH 1204</td>
<td>Applied Calculus II</td>
<td></td>
</tr>
<tr>
<td>BISC 1403</td>
<td>Introductory Biology I</td>
<td>5</td>
</tr>
<tr>
<td>&amp; BISC 1413</td>
<td>and Introductory Biology Lab I</td>
<td></td>
</tr>
<tr>
<td>CHEM 1321</td>
<td>General Chemistry I</td>
<td>6</td>
</tr>
<tr>
<td>&amp; CHEM 1331</td>
<td>and General Chemistry Lab I</td>
<td></td>
</tr>
<tr>
<td>BISC 1404</td>
<td>Introductory Biology II</td>
<td>5</td>
</tr>
<tr>
<td>&amp; BISC 1414</td>
<td>and Introductory Biology Lab II</td>
<td></td>
</tr>
<tr>
<td>CHEM 1322</td>
<td>General Chemistry II</td>
<td>6</td>
</tr>
<tr>
<td>&amp; CHEM 1332</td>
<td>and General Chemistry Lab II</td>
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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>
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<tbody>
<tr>
<td>CHEM 2521</td>
<td>Organic Chemistry I</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 2541</td>
<td>and Organic Chemistry Lab I</td>
<td></td>
</tr>
<tr>
<td>CHEM 2522</td>
<td>Organic Chemistry II</td>
<td></td>
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<tr>
<td>&amp; CHEM 2542</td>
<td>and Organic Chemistry Lab II</td>
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</table>

The following requirement is best fulfilled in junior year:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>PHYS 1701</td>
<td>Physics I</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 1511</td>
<td>and Physics I Lab</td>
<td></td>
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<tr>
<td>PHYS 1702</td>
<td>Physics II</td>
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<tr>
<td>&amp; PHYS 1512</td>
<td>and Physics II Lab</td>
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**Sequence 2:**

<table>
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<tr>
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<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 1501</td>
<td>General Physics I</td>
<td></td>
</tr>
<tr>
<td>&amp; PHYS 1511</td>
<td>and Physics I Lab</td>
<td></td>
</tr>
<tr>
<td>PHYS 1502</td>
<td>General Physics II</td>
<td></td>
</tr>
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<td>&amp; PHYS 1512</td>
<td>and Physics II Lab</td>
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</tbody>
</table>

C- is the minimum accepted grade for all courses in the biology major. All majors must meet with their 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>
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</thead>
<tbody>
<tr>
<td>BISC 1000</td>
<td>Life on the Planet Earth</td>
<td></td>
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<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>
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<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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</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. Under no circumstances can more than two external courses be transferred toward the major.

Availability

The major in biological sciences is available at Fordham College at Rose Hill. Students in Fordham's School of Professional and Continuing Studies may major in biological sciences only if they receive the approval of their advising dean and/or department, and 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 and any additional electives that may be required to earn a minimum of 124 credits.*

CIP Code

26.0101 - Biology/Biological Sciences, General.

You can use the CIP code to learn more about career paths associated with this field of study and, for international students, possible post-graduation visa extensions. Learn more about CIP codes and other information resources.

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