Biology (BS)

Loyola’s Bachelor of Science (BS) in Biology degree program offers a myriad of undergraduate student research opportunities. The program’s reputation also has enabled students to secure internships in hospitals, at medical equipment companies, zoos, biotech companies and many other employers.

Loyola students recommended for admission by the Pre-Health Professions Advisory Committee have nearly an 75% acceptance rate into health professional schools, which is nearly double the national average of 47%. This also attests to the caliber of Loyola’s Biology program.

Curriculum

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BIOL 101</td>
<td>General Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 111</td>
<td>General Biology I Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 102</td>
<td>General Biology II</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 112</td>
<td>General Biology II Lab</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 251</td>
<td>Cell Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 265</td>
<td>Ecology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 282</td>
<td>Genetics</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

- BIOL 252 Cell Biology Laboratory
- BIOL 266 Ecology Laboratory
- BIOL 283 Genetics Laboratory

**Biology Courses: Electives**  

At least two (2) elective courses must include a laboratory component and at least nine (9) credits must be at 300-level.

**Chemistry**

- CHEM 160 Chemical Structure and Properties  
  or CHEM 101 General Chemistry A Lecture/Discussion  
  or CHEM 105 Chemical Principles

- CHEM 161 Chemical Structure and Properties Laboratory  
  or CHEM 105 Chemical Principles  
  or CHEM 111 General Chemistry Lab A

- CHEM 180 Chemical Reactivity I  
  or CHEM 221 Organic Chem I Lec/Disc  
  or CHEM 223 Organic Chemistry A Lect & Disc

- CHEM 181 Chemical Reactivity I Lab  
  or CHEM 221 Organic Chem I Lec/Disc  
  or CHEM 225 Organic Chemistry Lab A

- CHEM 240 Chemical Reactivity II  
  or CHEM 222 Organic Chem II Lec/Disc  
  or CHEM 224 Organic Chem B Lec/Disc

- CHEM 241 Chemical Reactivity II Laboratory  
  or CHEM 222 Organic Chem II Lec/Disc  
  or CHEM 226 Organic Chemistry Lab B

- CHEM 260 Quantitative Methods in Chemistry  
  or CHEM 102 General Chemistry B Lecture/Discussion  
  or CHEM 106 Basic Inorganic Chemistry

- CHEM 261 Quantitative Methods in Chemistry Laboratory  
  or CHEM 106 Basic Inorganic Chemistry

- or CHEM 112 General Chemistry Lab B

**Mathematics**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MATH 131</td>
<td>Applied Calculus I</td>
<td>3-4</td>
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<tr>
<td>or MATH 161</td>
<td>Calculus I</td>
<td></td>
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<tr>
<td>MATH 132</td>
<td>Applied Calculus II</td>
<td>3-4</td>
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<tr>
<td>or MATH 162</td>
<td>Calculus II</td>
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**Physics**

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<tr>
<th>Course</th>
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<th>Hours</th>
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<tbody>
<tr>
<td>PHYS 111</td>
<td>College Physics I Lec / Dis</td>
<td>3</td>
</tr>
<tr>
<td>or PHYS 121</td>
<td>College Physics I Lec/Dis</td>
<td></td>
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<tr>
<td>or PHYS 125</td>
<td>General Physics I Lec/Dis</td>
<td></td>
</tr>
<tr>
<td>PHYS 111L</td>
<td>College Physics Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 112</td>
<td>College Physics II Lec/Disc</td>
<td>3</td>
</tr>
<tr>
<td>or PHYS 122</td>
<td>College Phys II Lec/Dis</td>
<td></td>
</tr>
<tr>
<td>or PHYS 126</td>
<td>General Physics II Lec/Dis</td>
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</tr>
<tr>
<td>PHYS 112L</td>
<td>College Physics Lab II</td>
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</table>

Total Hours: 67

1 For a listing of available Biology Electives, click here (https://www.luc.edu/biology/bsinbiology/courseofferings/).
2 For a listing of the lab requirements, click here (https://www.luc.edu/biology/bsinbiology/bsinbiologylabrequirements/).

Suggested Course Sequence

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 101</td>
<td>General Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 111</td>
<td>General Biology I Lab</td>
<td>1</td>
</tr>
</tbody>
</table>
| CHEM 160 | Chemical Structure and Properties 3
| or CHEM 101 | General Chemistry A Lecture/Discussion |       |
| or CHEM 105 | Chemical Principles |       |
| CHEM 161 | Chemical Structure and Properties Laboratory 1
| or CHEM 105 | Chemical Principles |       |
| or CHEM 111 | General Chemistry Lab A |       |
| CHEM 180 | Chemical Reactivity I 3
| or CHEM 221 | Organic Chem I Lec/Disc |       |
| or CHEM 223 | Organic Chemistry A Lect & Disc |       |
| CHEM 181 | Chemical Reactivity I Lab 1
| or CHEM 221 | Organic Chem I Lec/Disc |       |
| or CHEM 225 | Organic Chemistry Lab A |       |
| CHEM 240 | Chemical Reactivity II 3
| or CHEM 222 | Organic Chem II Lec/Disc |       |
| or CHEM 224 | Organic Chem B Lec/Disc |       |
| CHEM 241 | Chemical Reactivity II Laboratory 1
| or CHEM 222 | Organic Chem II Lec/Disc |       |
| or CHEM 226 | Organic Chemistry Lab B |       |
| CHEM 260 | Quantitative Methods in Chemistry 3
| or CHEM 102 | General Chemistry B Lecture/Discussion |       |
| or CHEM 106 | Basic Inorganic Chemistry |       |
| CHEM 261 | Quantitative Methods in Chemistry Laboratory 1
| or CHEM 106 | Basic Inorganic Chemistry |       |
| or CHEM 112 | General Chemistry Lab B |       |

First Semester

<table>
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<tr>
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<tbody>
<tr>
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<td>General Biology I</td>
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<tr>
<td>BIOL 111</td>
<td>General Biology I Lab</td>
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</table>
| CHEM 160 | Chemical Structure and Properties 3
| or CHEM 101 | General Chemistry A Lecture/Discussion |       |
| or CHEM 105 | Chemical Principles |       |
| CHEM 161 | Chemical Structure and Properties Laboratory 1
| or CHEM 105 | Chemical Principles |       |
| or CHEM 111 | General Chemistry Lab A |       |
| CHEM 180 | Chemical Reactivity I 3
| or CHEM 221 | Organic Chem I Lec/Disc |       |
| or CHEM 223 | Organic Chemistry A Lect & Disc |       |
| CHEM 181 | Chemical Reactivity I Lab 1
| or CHEM 221 | Organic Chem I Lec/Disc |       |
| or CHEM 225 | Organic Chemistry Lab A |       |
| CHEM 240 | Chemical Reactivity II 3
| or CHEM 222 | Organic Chem II Lec/Disc |       |
| or CHEM 224 | Organic Chem B Lec/Disc |       |
| CHEM 241 | Chemical Reactivity II Laboratory 1
| or CHEM 222 | Organic Chem II Lec/Disc |       |
| or CHEM 226 | Organic Chemistry Lab B |       |
| CHEM 260 | Quantitative Methods in Chemistry 3
| or CHEM 102 | General Chemistry B Lecture/Discussion |       |
| or CHEM 106 | Basic Inorganic Chemistry |       |
| CHEM 261 | Quantitative Methods in Chemistry Laboratory 1
| or CHEM 106 | Basic Inorganic Chemistry |       |
| or CHEM 112 | General Chemistry Lab B |       |

选择一个课程:

- BIOL 251 Cell Biology
- BIOL 265 Ecology
- BIOL 282 Genetics

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tr>
<td>BIOL 102</td>
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<td>BIOL 112</td>
<td>General Biology II Lab</td>
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</table>
| CHEM 180 | Chemical Reactivity I 3
| or CHEM 221 | Organic Chem I Lec/Disc |       |
| or CHEM 225 | Organic Chemistry Lab A |       |
| CHEM 240 | Chemical Reactivity II 3
| or CHEM 222 | Organic Chem II Lec/Disc |       |
| or CHEM 224 | Organic Chem B Lec/Disc |       |
| CHEM 241 | Chemical Reactivity II Laboratory 1
| or CHEM 222 | Organic Chem II Lec/Disc |       |
| or CHEM 226 | Organic Chemistry Lab B |       |
| CHEM 260 | Quantitative Methods in Chemistry 3
| or CHEM 102 | General Chemistry B Lecture/Discussion |       |
| or CHEM 106 | Basic Inorganic Chemistry |       |
| CHEM 261 | Quantitative Methods in Chemistry Laboratory 1
| or CHEM 106 | Basic Inorganic Chemistry |       |
| or CHEM 112 | General Chemistry Lab B |       |

选择一个课程:

- BIOL 251 Cell Biology
- BIOL 265 Ecology
- BIOL 282 Genetics

Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</table>
| CHEM 240 | Chemical Reactivity II 3
| or CHEM 221 | Organic Chem I Lec/Disc |       |
| or CHEM 225 | Organic Chemistry Lab A |       |
| CHEM 241 | Chemical Reactivity II Laboratory 1
| or CHEM 222 | Organic Chem II Lec/Disc |       |
| or CHEM 226 | Organic Chemistry Lab B |       |
| CHEM 260 | Quantitative Methods in Chemistry 3
| or CHEM 102 | General Chemistry B Lecture/Discussion |       |
| or CHEM 106 | Basic Inorganic Chemistry |       |
| CHEM 261 | Quantitative Methods in Chemistry Laboratory 1
| or CHEM 106 | Basic Inorganic Chemistry |       |
| or CHEM 112 | General Chemistry Lab B |       |

选择一个课程:

- BIOL 251 Cell Biology
- BIOL 265 Ecology
- BIOL 282 Genetics

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</table>
| CHEM 260 | Quantitative Methods in Chemistry 3
| or CHEM 102 | General Chemistry B Lecture/Discussion |       |
| or CHEM 106 | Basic Inorganic Chemistry |       |
| CHEM 261 | Quantitative Methods in Chemistry Laboratory 1
<p>| or CHEM 106 | Basic Inorganic Chemistry |       |
| or CHEM 112 | General Chemistry Lab B |       |</p>
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Hours</th>
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<td>CHEM 261</td>
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<td>Genetics</td>
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<tr>
<td></td>
<td>Hours</td>
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**Fifth Semester**
Select one of the following:

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<tr>
<td>BIOL 251</td>
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<tr>
<td>BIOL 282</td>
<td>Genetics</td>
<td></td>
</tr>
<tr>
<td>PHYS 111</td>
<td>College Physics I Lec / Dis</td>
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<td>PHYS 111L</td>
<td>College Physics Laboratory I</td>
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**Sixth Semester**

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<tr>
<td>PHYS 112</td>
<td>College Physics II Lec/Disc</td>
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<td>College Physics Lab II</td>
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<td>Hours</td>
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**Seventh Semester**

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**Eighth Semester**

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<th>Course</th>
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<tbody>
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</tr>
<tr>
<td></td>
<td>Hours</td>
<td>8</td>
</tr>
</tbody>
</table>

**Total Hours** 67

1 May be replaced by a more difficult course.

**Transferring Credit**
Transfer students seeking the BS in Biology degree must take a minimum of 20 credit hours in Biology courses at Loyola. No more than 18 credit hours from another institution may be applied to the BS in Biology degree program.

**Course Repeat Rule**
Effective with the spring 2009 semester, students are allowed only TWO attempts to pass Biology courses with a C- or better grade. The two attempts includes withdrawals (w).

The procedure for securing approval for a repeat: Students must come to the Biology Department, fill out a permission to register forms, and obtain signatures of both the faculty instructor, and the Chairperson. A copy of this form is then taken to the Hub in Sullivan to secure final permission for the repeat. After a second attempt to pass a Biology course, it is at the discretion of the Chairperson whether the student may repeat the course.

**College of Arts and Sciences Graduation Requirements**
All Undergraduate students in the College of Arts and Sciences are required to take two Writing Intensive courses (6 credit hours) as well as complete a foreign language requirement at 102-level or higher (3 credit hours) or a language competency test. More information can be found here (https://www.luc.edu/cas/college-requirements/).

**Learning Outcomes**
At the completion of the Undergraduate Biology Major:

- Students will be able to answer knowledge and comprehension type questions (Bloom's taxonomy level 1 and 2) related to fundamental biologic concepts and learn basic facts and terminology in the various subfields of biology.
- Students will be proficient in the use of standard laboratory equipment.
- Students will be able to retrieve, synthesize, and critically evaluate scientific literature.
- Students will be able to communicate (orally and in writing) results and interpretation of scientific research.
- Students will be able to design and implement experiments that test predictive hypotheses, analyze data, report results, and interpret the significance of these experiments.

**Additional Undergraduate Graduation Requirements**
All Undergraduate students are required to complete the University Core, at least one Engaged Learning course, and UNIV 101. SCPS students are not required to take UNIV 101. You can find more information in the University Requirements (https://catalog.luc.edu/undergraduate/university-requirements/) area.