Bachelor of Arts in Biology

Requirements (90-98 units)

Total units required for graduation: 180

Students majoring in Biology may repeat an upper-division Biology course no more than once. Failing any two upper-division Biology courses disqualifies the student from continuation as a Biology major.

Requirements for the B.A. in Biology
(Program Code: BIOL)

<table>
<thead>
<tr>
<th>Lower-division requirements (53-61)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 200 Biology of the Cell 5</td>
</tr>
<tr>
<td>BIOL 201 Biology of Organisms 5</td>
</tr>
<tr>
<td>BIOL 202 Biology of Populations 5</td>
</tr>
<tr>
<td>CHEM 215 General Chemistry I: Atomic Structure and Chemical Bonding 6</td>
</tr>
<tr>
<td>CHEM 216 General Chemistry II: Principles of Chemical Reactions 6</td>
</tr>
</tbody>
</table>

Organic chemistry

A minimum of nine units chosen from Group A or B below: 9-15

**Group A:**
- CHEM 221A Organic Chemistry I Lecture
- CHEM 222A Organic Chemistry II Lecture
- CHEM 223A Organic Chemistry III Lecture

**Group B:**
- CHEM 321 Principles of Organic Chemistry I
- CHEM 322 Principles of Organic Chemistry II
- CHEM 323 Principles of Organic Chemistry III

**MATH 192** Methods of Calculus 4

or **MATH 211** Basic Concepts of Calculus

Physics

A minimum of thirteen units chosen from Group A or B below: 13-15

**Group A:**
- PHYS 121 Basic Concepts of Physics I
- PHYS 122 Basic Concepts of Physics II
- PHYS 123 Basic Concepts of Physics III

**Group B:**
- PHYS 221 General Physics I
- PHYS 222 General Physics II
- PHYS 223 General Physics III

Upper-division requirements (37)

| BIOL 300 Cell Physiology 5 |
| BIOL 400 Molecular Biology 5 |
| BIOL 423 Genetics 5 |
| BIOL 450 Ecology 5 |

or **BIOL 455** Marine Biology and Ecology

| BIOL 591 Biology Seminar 1 |

A minimum of 16 units of upper-division biology courses (excluding BIOL 301, BIOL 304, BIOL 305, BIOL 306, BIOL 314, BIOL 349 and BIOL 503), with at least one course from each of Groups A and B:

**Group A:**
- BIOL 319 Local Flora
- BIOL 354 Biology of Higher Plants
- BIOL 431 Comparative Plant Physiology

**Group B:**
- BIOL 320 Microorganisms
- BIOL 331 Biology of Invertebrates
- BIOL 335 Entomology
- BIOL 340 Comparative Embryology
- BIOL 342 Biology of Chordates
- BIOL 420 Medical Microbiology
- BIOL 424 Comparative Animal Physiology
- BIOL 440 Principles of Development
- BIOL 516 Introduction to Regulatory Affairs in the Life Sciences
- BIOL 517 Laboratory in Human Embryonic Stem Cell Culture
- BIOL 524 Advanced Vertebrate Morphology
- BIOL 573 Immunology

Total Units 90-98