BIOLOGY, B.S.

The Bachelor of Science degree is offered for those students aspiring to a professional career in biology, and for those students with particularly strong interests in the discipline. See also Preprofessional Programs. A student pursuing the Bachelor of Science is expected to develop a stronger background in mathematics and related sciences and to attain a greater understanding of biology than will a student pursuing a Bachelor of Arts degree. Biology major students will also be strongly encouraged to undertake an individual research project with a faculty member during their junior and/or senior year.

The B.S. in Biology offers three concentrations for students to choose from.

Biotechnology Concentration
The concentration in biotechnology is designed for students with a strong interest in molecular biology and genetics. Courses will prepare students in both conceptual aspects of molecular biology and their practical application in biotechnology and genetic engineering.

Environmental Biology Concentration
This concentration is designed for students with a strong interest in environmental biology. The concentration provides students with a breadth and depth of environmental awareness, rigorously prepares them for advanced studies in environmental biology and trains them for environmentally-oriented professions.

Human Biology Concentration
This concentration is designed for biology majors who want to develop the ability to integrate biological knowledge as it relates to human beings. The study of human biology requires fundamental knowledge of basic life science, since humans and other animals share a large number of structural, chemical, and control mechanisms. Moreover, human behavior occurs within a specific evolutionary and ecological setting, just as it does in other animals. Our complex brains, our communication and conceptual abilities, and our social structures, can be more fully understood by those who complete this concentration.

Overall Requirements
• 120 credit hours, to include at least 36 credits at or above the 300 course level.
• Students must have a grade point average of at least 2.0 in Biology courses completed at UNC Greensboro.
• A minimum of 30 credits of Biology courses above the 100 level.
• A maximum of 4 credits at the 200 level may be counted toward the major.

Degree Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 111 &amp; 111L</td>
<td>Principles of Biology I and Principles of Biology I Laboratory</td>
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<tr>
<td>BIO 112 &amp; 112L</td>
<td>Principles of Biology II and Principles of Biology II Laboratory</td>
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</tr>
<tr>
<td>BIO 301</td>
<td>Principles of Ecology</td>
<td></td>
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<tr>
<td>BIO 355</td>
<td>Cell Biology</td>
<td></td>
</tr>
<tr>
<td>BIO 392</td>
<td>Genetics</td>
<td></td>
</tr>
<tr>
<td>BIO 330</td>
<td>Evolution</td>
<td></td>
</tr>
<tr>
<td>BIO 315</td>
<td>Ecology and Evolution Laboratory</td>
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</tr>
<tr>
<td>BIO 375</td>
<td>Cell Biology and Genetics Laboratory</td>
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</tbody>
</table>

College of Arts and Sciences Additional Requirements (CIC) (https://catalog.uncg.edu/arts-sciences/#additionalundergraduateregirementstext)

Optional Concentrations
Any of the optional concentrations as detailed following the major requirements may be added, but a concentration is not required.

• Biotechnology
• Environmental Biology
• Human Biology

Electives
Electives sufficient to complete the 120 credit hours required for the degree.
### Biotechnology Concentration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>Required</td>
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<td>12</td>
</tr>
<tr>
<td>BIO 481</td>
<td>General Microbiology and General Microbiology Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIO 494</td>
<td>Introduction to Biotechnology</td>
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<tr>
<td>BIO 482</td>
<td>Molecular Biological Approaches in Research</td>
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</table>

Select at least one of the following courses: 3

- BIO 479 Neurobiology and Neurobiology Laboratory
- BIO 497 Internship in Biology
- BIO 499 Undergraduate Research
- BIO 428 Microbial Ecology
- BIO 435 Biochem:Metabolic Regulation
- BIO 437 Human Evolutionary Genetics
- BIO 442 GENes and Signals
- BIO 473 Drugs and the Brain
- BIO 478 Hormones in Action
- BIO 485 Virology
- BIO 486 Cell Cycle and Cancer
- BIO 487 Epigenetics
- BIO 490 Introduction to Mathematical Models in Biology
- BIO 495 Advanced Genetics

### Environmental Biology Concentration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>BIO 431</td>
<td>The Biosphere</td>
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</tr>
</tbody>
</table>

Select one of the following advanced Biology courses: 3-4

- BIO 422 Plant Diversity
- BIO 441 Invertebrate Zoology and Invertebrate Zoology Laboratory
- BIO 470 Vertebrate Zoology and Vertebrate Zoology Laboratory
- BIO 451 Vascular Plant Systematics

Select at least two of the following advanced Biology courses: 6

- BIO 361 Biology and Conservation of Sea Turtles
- BIO 420 Marine Biology
- BIO 438 Animal Behavior
- BIO 401 Adv Topics in Animal Ecology
- BIO 410 Advanced Topics in Plant Ecology
- BIO 421 Ecosys Ecology Biogeochem
- BIO 427 Landscape Ecology
- BIO 426 Conservation Biology
- BIO 428 Microbial Ecology
- BIO 429 Aquatic Ecology
- BIO 437 Human Evolutionary Genetics
- BIO 444 Entomology
- BIO 452 Metamorphosis
- BIO 460 Symbiosis
- BIO 480 Environmental Physiology

### Human Biology Concentration Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
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<td>13</td>
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<tr>
<td>BIO 277</td>
<td>Human Physiology and Human Physiology Laboratory</td>
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</tr>
<tr>
<td>or BIO 271</td>
<td>Human Anatomy and Human Anatomy Laboratory</td>
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</tbody>
</table>

Select at least three of the following courses:

- BIO 425 Biological Clocks
- BIO 435 Biochem:Metabolic Regulation
- BIO 436 Biology of Aging
- BIO 437 Human Evolutionary Genetics
- BIO 438 Animal Behavior
- BIO 449 Current Topics in Biology
- BIO 453 Vertebrate Morphogenesis
- BIO 455 Vertebrate Reproduction
- BIO 464 Developmental Biology and Developmental Biology Laboratory
- BIO 472 Histology and Histology Laboratory
- BIO 476 Pop Genetics / Molecular Evol
- BIO 479 Neurobiology and Neurobiology Laboratory
- BIO 481 General Microbiology and General Microbiology Laboratory
- BIO 485 Virology
- BIO 486 Cell Cycle and Cancer
- BIO 487 Epigenetics
- BIO 492 Genetics of Complex Traits
- BIO 495 Advanced Genetics
- ATY 153 The Human Species
- PSY 230 Biological Psychology

### Disciplinary Honors in Biology

Requirements

- A minimum of 18 credit hours as defined below.
- UNC Greensboro cumulative GPA of 3.30 or better or, for transfer students, cumulative GPA of 3.30 or better from all prior institutions.
- A grade of B or higher in all course work used to satisfy the Honors requirements in Biology.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>Required</td>
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<td>6-9</td>
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<tr>
<td>HSS 490</td>
<td>Senior Honors Project</td>
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<tr>
<td>BIO 493</td>
<td>Honors Work *</td>
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</tbody>
</table>

Select two 400-level Biology courses completed with Honors Contracts 6

Select a third Honors Contract course in Biology at the 300 or 400 level 3

Any of the Department’s journal clubs 1
Oral presentation of Honors Thesis to a committee of three Biology Faculty or public presentation of research at a local, regional, or national meeting is required.

* Only 6 credits may be counted toward the 30 credit minimum in the Biology major

Recognition
Receive a Certificate of Disciplinary Honors in Biology; have that accomplishment, along with the title of the Senior Honors Project, noted on the official transcript; and be recognized at a banquet held at the end of the spring semester.

Honors Advisor
Contact John Lepri at jjlepri@uncg.edu for further information and guidance about Honors in Biology. To apply, https://honorscollege.uncg.edu/disciplinary-honors/disciplinary-honors-admissions/