## Biology, B.A.

### Requirements

The Bachelor of Arts with a major in biology requires a minimum of 120 s.h., including at least 68-77 s.h. of work for the major. Students must maintain a g.p.a. of at least 2.00 in all courses for the major and in all UI courses for the major. They also must complete the College of Liberal Arts and Sciences GE CLAS Core.

The major for the Bachelor of Arts prepares students for graduate study in the biological sciences and is especially appropriate for those interested in careers in biological science education at all levels. It also provides suitable preparation for professional positions in industry, laboratory, field research, or for professional study in medicine and other health-related fields.

The B.A. program is broadly based. It introduces students to key concepts in important areas of biology and, compared to the B.S. program, provides more flexibility in choosing elective courses. Students working toward a Bachelor of Arts degree must complete the chemistry/math foundation; the biology core; three courses from the breadth menus; one course with a laboratory; and five or six elective courses, which may include one course in the history or philosophy of science.

Students who wish to apply transfer credit toward the biology major should consult their biology advisor.

The B.A. with a major in biology requires the following coursework.

### Code | Title | Hours
--- | --- | ---
Chemistry/Mathematics Foundation Courses | 18
Biology Core Courses | 19
Breadth Menus | 9-13
Course with a Laboratory | 4-6
Electives | 18-21
**Total Hours** | **68-77**

### Chemistry/Mathematics Foundation

### Code | Title | Hours
--- | --- | ---
All of these: CHEM:1110-1120 Principles of Chemistry I-II | 8
BIOC:3110 Biochemistry | 3
One of these: MATH:1460 Calculus for the Biological Sciences | 4
MATH:1550 Engineering Mathematics I: Single Variable Calculus | 4
MATH:1850 Calculus I | 4
**Total Hours** | **68-77**

### Biology Core

### Code | Title | Hours
--- | --- | ---
All of these: BIOL:1411-1412 Foundations of Biology - Diversity of Form and Function | 8
BIOL:2512 Fundamental Genetics | 4
BIOL:2723 Cell Biology | 3
BIOL:3172 Evolution | 4

### Breadth Menus

#### Genes and Genomes

### Code | Title | Hours
--- | --- | ---
One of these: BIOL:3314 Genomics | 3
BIOL:3373 Human Population Genetics and Variation | 3
BIOL:3713 Molecular Genetics | 4
BIOL:4213 Bioinformatics | 4
BIOL:4373 Molecular Evolution: Genes, Genomes, and Organisms | 3
BIOL:4386 Introduction to Scientific Computing for Biologists | 3

#### Biological Systems

### Code | Title | Hours
--- | --- | ---
Two of these: BIOL:2254 Endocrinology | 3
BIOL:2603 Mechanisms of Aging | 3
BIOL:2673 Ecology | 3
BIOL:2753 Introduction to Neurobiology | 3
BIOL:3233 Introduction to Developmental Biology | 3
BIOL:3244 Animal Behavior | 3,5
BIOL:3253 Neurobiology I | 4
BIOL:3343 Animal Physiology | 3
BIOL:3363 Plant Developmental Biology | 3
BIOL:3383 Introduction to Systems Biology | 3
BIOL:4333 Genes and Development | 3
May include one of these: BIOL:2663 Plant Response to the Environment | 3
BIOL:3663 Plant Response to the Environment | 3

### Course with a Laboratory

### Code | Title | Hours
--- | --- | ---
One of these (must not have been used as a breadth menu course): BIOL:2246 Entomology Lab | 4
BIOL:2346 Vertebrate Zoology | 4
BIOL:3244 Animal Behavior | 5
BIOL:3626 Cell Biology Laboratory | 4
BIOL:3655 Neurogenetics Laboratory | 4
BIOL:3656 Neurobiology Laboratory | 4
BIOL:3676 Evolution Lab | 4
Biology, B.A.

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>BIOL:3716</td>
<td>Genetics and Biotechnology Lab</td>
<td>4</td>
</tr>
<tr>
<td>BIOL:3736</td>
<td>Developmental Biology Lab</td>
<td>4</td>
</tr>
<tr>
<td>BIOL:4314</td>
<td>Introduction to Synthetic Biology in the Lab</td>
<td>4</td>
</tr>
<tr>
<td>BIOL:4999</td>
<td>Honors Research in Biology</td>
<td>6</td>
</tr>
<tr>
<td>MICR:2157</td>
<td>General Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>MICR:2158</td>
<td>General Microbiology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>MICR:3147</td>
<td>Immunology and Human Disease</td>
<td>3</td>
</tr>
<tr>
<td>MICR:3168</td>
<td>Viruses and Human Disease</td>
<td>3</td>
</tr>
<tr>
<td>RHET:3250</td>
<td>Persuasive Writing for Science and Health Care Professionals</td>
<td>3</td>
</tr>
</tbody>
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Iowa Lakeside Laboratory courses (consult advisor) 4-5

**Electives**

Students complete at least two biology elective courses (prefix BIOL) for 6 s.h. plus 12 s.h. of coursework outside the Department of Biology from the list below.

Biology courses may include courses chosen from the "Breadth Menus" list or the "Course with a Laboratory" list above that have not been used to satisfy those requirements; other 2-4 s.h. courses numbered 2000 or above offered by the Department of Biology except for BIOL:2120 Good Genes Gone Bad: Genetic Disorders of Notable Celebrities and BIOL:2211 Genes, Genomes, and the Human Condition; and approved advanced biology courses taught at Iowa Lakeside Laboratory with approval from the advisor.

Students may count BIOL:3994 Introduction to Research (2-3 s.h.) and BIOL:4897 Teaching Internship in Biology (1-3 s.h.) only once toward the elective requirement.

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<thead>
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<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>BIOL:3994</td>
<td>Introduction to Research</td>
<td>2-3</td>
</tr>
<tr>
<td>BIOL:4897</td>
<td>Teaching Internship in Biology</td>
<td>1-3</td>
</tr>
</tbody>
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From the physics courses, students may choose from the following (maximum of two courses); if they select PHYS:1511, they could take PHYS:1512; if they select PHYS:1611, they could take PHYS:1612:

<table>
<thead>
<tr>
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<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS:1400</td>
<td>Basic Physics</td>
<td>3-4</td>
</tr>
<tr>
<td>PHYS:1511</td>
<td>College Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS:1512</td>
<td>College Physics II</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Only one course from the list below may count toward the elective requirement:

<table>
<thead>
<tr>
<th>Code</th>
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<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG:3110</td>
<td>Geography of Health</td>
<td>3</td>
</tr>
<tr>
<td>HIST:4162</td>
<td>History of Global Health</td>
<td>3</td>
</tr>
<tr>
<td>HIST:4419</td>
<td>Ancient and Medieval Science</td>
<td>3</td>
</tr>
<tr>
<td>PHIL:3604</td>
<td>Introduction to Philosophy of Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**Teacher Licensure**

Students interested in teaching in elementary and/or secondary schools should seek admission to the Teacher Education Program (TEP) in the College of Education.

To qualify for licensure in secondary teaching, students in the TEP complete a degree in education as well as a related College of Liberal Arts and Sciences degree. See Teacher Education Program Application and Admission on the College of Education website for details on requirements and deadlines for applying to the College of Education and about TEP choices of majors leading to licensure.