BIOLOGICAL SCIENCES, BACHELOR OF ARTS

College of Biological Sciences

The Biological Sciences Major
Departments of Evolution & Ecology; Microbiology & Molecular Genetics; Molecular & Cellular Biology; Neurobiology, Physiology, & Behavior; and Plant Biology

The Program
The Biological Sciences major is broad in concept, spanning the numerous core disciplines of biology. The Bachelor of Arts (A.B.) program includes preparatory work in mathematics, general and organic chemistry, physics, and introductory level biology, as well as upper division core classes emphasizing the breadth of biological sciences. Students in the Bachelor of Arts (A.B.) program can pursue upper division coursework outside of the biological sciences. Research and internships are encouraged.

Career Alternatives
The degree program prepares students for admission to graduate schools or professional schools, leading to either a variety of professional health careers or further study in basic and applied areas of biology. They provide suitable preparation for careers in teaching, biological and biotechnological research with various governmental agencies or private companies, government regulatory agencies, environmental consulting, biological illustration and writing, pharmaceutical sales, biological/environmental law, and biomedical engineering.

Faculty Advisor
Lesilee Rose, Ph.D.

Advising
Biology Academic Success Center (BASC) (http://basc.ucdavis.edu/) in 1023 Sciences Laboratory Building; 530-752-0410.

Teaching Credential Subject Representative
Associate Director of Teacher Education (School of Education); see the Teaching Credential/M.A. Program (https://education.ucdavis.edu/teaching-credentialma/).

Bodega Marine Laboratory Program

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIS 002A</td>
<td>Introduction to Biology: Essentials of Life on Earth</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIS 002B</td>
<td>&amp; Introduction to Biology: Principles of Ecology &amp; Evolution</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIS 002C</td>
<td>&amp; Introduction to Biology: Biodiversity &amp; the Tree of Life</td>
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Preparatory Subject Matter Subtotal 45-57

Depth Subject Matter

Biological Science

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIS 101</td>
<td>Genes &amp; Gene Expression</td>
<td>4</td>
</tr>
<tr>
<td>BIS 105</td>
<td>Biomolecules &amp; Metabolism</td>
<td>3-6</td>
</tr>
<tr>
<td>or BIS 102</td>
<td>&amp; Structure &amp; Function of Biomolecules</td>
<td></td>
</tr>
<tr>
<td>&amp; BIS 103</td>
<td>&amp; Bioenergetics &amp; Metabolism</td>
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Statistics

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<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>STA 100</td>
<td>Applied Statistics for Biological Sciences</td>
<td>4</td>
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<tr>
<td>or STA 013</td>
<td>Elementary Statistics</td>
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Evolution

EVE 100 Introduction to Evolution 4

Ecology

ESP 100 General Ecology 4

or EVE 101 Introduction to Ecology

Microbiology

Choose one:

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<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tr>
<td>MIC 102</td>
<td>Introductory Microbiology</td>
<td>3-4</td>
</tr>
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</table>
### Biological Sciences, Bachelor of Arts

#### Animal Physiology, Behavior or Development

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>MIC 162</td>
<td>General Virology</td>
</tr>
<tr>
<td>MIC 170</td>
<td>Yeast Molecular Genetics</td>
</tr>
</tbody>
</table>

**Choose one:** 3-5

- BIS 104  Cell Biology
- MCB 150  Developmental Biology
- NPB 100  Neurobiology
- NPB 101  Systemic Physiology
- NPB 102  Animal Behavior
- NPB 107  Cell Signaling in Health & Disease
- NPB 141  Physiological Adaptation of Marine Organisms

#### Plant Physiology or Development:

**Choose one:** 3-5

- PLB 105  Developmental Plant Anatomy
- PLB 111  Plant Physiology
- PLB 112  Plant Growth & Development
- PLB 113  Molecular & Cellular Biology of Plants
- PLB 116  Plant Morphology & Evolution
- PLB 126  Plant Biochemistry

**Laboratory Requirement**

Choose course(s) for a minimum total of six hours/week of laboratory or field work from the list of courses below: 3-5

- EVE 110  Running, Swimming & Flying
- EVE 140  Paleobotany
- EVE 180A  Experimental Ecology & Evolution in the Field
- EVE 180B  Experimental Ecology & Evolution in the Field
- MIC 103L  Introductory Microbiology Laboratory
- NPB 100L  Neurobiology Laboratory
- NPB 101L  Systemic Physiology Laboratory
- NPB 121L  Physiology of Reproduction Laboratory
- NPB 123  Comparative Vertebrate Organology
- PLB/EVE 117  Plant Ecology
- PLB/EVE 119  Population Biology of Invasive Plants & Weeds

Other courses with approval of the faculty advisor.

**Choose one with six hours lab or field work/week; a course may fulfill both the lab and a depth topic requirement:**

- BIS 180L  Genomics Laboratory
- EVE 105  Phylogenetic Analysis of Vertebrate Structure
- EVE 106  Mechanical Design in Organisms
- EVE 112L  Biology of Invertebrates Laboratory
- EVE 114  Experimental Invertebrate Biology
- EXB 106L  Human Gross Anatomy Laboratory
- MIC 104L  General Microbiology Laboratory
- MIC 105L  Microbial Diversity Laboratory
- MCB 120L  Molecular Biology & Biochemistry Laboratory
- MCB 140L  Cell Biology Laboratory
- MCB 160L  Principles of Genetics Laboratory
- NPB 141P  Physiological Adaptation of Marine Organisms/Advanced Laboratory Topics
- PLB 102  California Floristics
- PLB 105  Developmental Plant Anatomy
- PLB/EVE 108  Systematics & Evolution of Angiosperms
- PLB 116  Plant Morphology & Evolution
- PLB 148  Introductory Mycology

Other courses with approval of the Faculty Advisor.

**Depth Subject Matter Subtotal** 31-41

**Total Units** 76-98

1. With BASC advisor approval, this combination also satisfies the Chemistry requirement: CHE 004A-CHE 002A (3 units w/no lab)-CHE 002B.
2. With BASC advisor approval, this combination also satisfies the Organic Chemistry requirement: CHE 118A-CHE 008B.
3. With BASC advisor approval, this combination also satisfies the Mathematics requirement: MAT 021A-MAT 017B; MAT 017A-MAT 021B.