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 Katherine Esau Science Hall (formerly 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

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<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td><strong>Biological Science</strong></td>
<td><strong>Preparatory Subject Matter</strong></td>
<td>15</td>
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Chemistry
Choose the 002 or 004 series:¹

<table>
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<tr>
<th>Code</th>
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<tr>
<td>CHE 002A &amp; CHE 002B &amp; CHE 004A &amp; CHE 004B</td>
<td>General Chemistry &amp; General Chemistry for the Physical Sciences</td>
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<tr>
<td>CHE 008A &amp; CHE 008B &amp; CHE 118A &amp; CHE 118B &amp; CHE 118C</td>
<td>Organic Chemistry: Brief Course &amp; Organic Chemistry for Health &amp; Life Sciences</td>
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Mathematics
Choose the 017 or 021 series:²

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<tr>
<td>MAT 017A &amp; MAT 017B &amp; MAT 021A &amp; MAT 021B</td>
<td>Calculus &amp; Calculus for Biology &amp; Medicine</td>
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Physics
Choose the 001 or 007 series:³

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<td>PHY 001A &amp; PHY 001B &amp; PHY 007A &amp; PHY 007B &amp; PHY 007C</td>
<td>Principles of Physics &amp; General Physics</td>
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Recommended

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<tr>
<td>CHE 002C &amp; CHE 004C</td>
<td>General Chemistry &amp; General Chemistry for the Physical Sciences &amp; Engineering</td>
<td></td>
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<tr>
<td>MAT 017C &amp; MAT 021C</td>
<td>Calculus for Biology &amp; Medicine &amp; Calculus</td>
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Preparatory Subject Matter Subtotal

Depth Subject Matter

Biological Science
BIS 101 | Genes & Gene Expression | 4
BIS 105 | Biomolecules & Metabolism | 3-6
or BIS 102 | Structure & Function of Biomolecules & Bioenergetics & Metabolism | 3-6
& BIS 103

Statistics
STA 100 | Applied Statistics for Biological Sciences | 4
or STA 013 | Elementary Statistics | 3-6
or STA 013Y | Elementary Statistics | 3-6

Evolution
EVE 100 | Introduction to Evolution | 4

Ecology
ESP 100 | General Ecology | 4
or EVE 101 | Introduction to Ecology | 4

Microbiology
Choose one:  
MIC 102 Introductory Microbiology  
MIC 162 General Virology  
MIC 170 Yeast Molecular Genetics  

Animal Physiology, Behavior or Development  
Choose one:  
BIS 104 Cell Biology  
MCB 150 Developmental Biology  
NPB 100 Neurobiology  
NPB 101 Systemic Physiology  
N PB 102 Animal Behavior  
N PB 107 Cell Signaling in Health & Disease  
N PB 141 (Discontinued)  

Plant Physiology or Development:  
Choose one:  
PLB 105 Developmental Plant Anatomy  
PLB 111 Plant Physiology  
PLB 112 Plant Growth & Development  
PLB 113 Molecular & Cellular Biology of Plants  
PLB/PLS 116 Plant Morphology & Evolution  
PLB/MCB 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:  
Choose two with three hours lab or field work/week:  
EVE 110 Running, Swimming & Flying  
EVE 140 Paleobotany  
EVE/ENT 180A Experimental Ecology & Evolution in the Field  
EVE/ENT 180B Experimental Ecology & Evolution in the Field  
MCB 185 Computer Programming for Biologists  
MIC 103L Introductory Microbiology Laboratory  
N PB 100L Neurobiology Laboratory  
N PB 101L Systemic Physiology Laboratory  
N PB 121L Physiology of Reproduction Laboratory  
N PB 123/APC 100 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/CHA 101L 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  
N PB 141P (Discontinued)  
PLB/PLS 102 California Floristics (Discontinued)  
PLB 105 Developmental Plant Anatomy  
PLB/EVE 108 Systematics & Evolution of Angiosperms (Discontinued)  
PLB/PLS 116 Plant Morphology & Evolution  
PLB/PLP 148 Introductory Mycology  

Other courses with approval of the Faculty Advisor.  

Depth Subject Matter Subtotal  

Total Units  

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.