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


Code Title Units
Preparatory Subject Matter

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<th>Biological Science</th>
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Chemistry

Choose the 002 or 004 series: 1

| CHE 002A & CHE 002B | General Chemistry and General Chemistry |
| CHE 004A & CHE 004B | General Chemistry for the Physical Sciences & Engineering and General Chemistry for the Physical Sciences & Engineering |

Choose the 008 or 118 series: 2

| CHE 008A & CHE 008B | Organic Chemistry: Brief Course and Organic Chemistry: Brief Course |
| CHE 118A & CHE 118B & CHE 118C | Organic Chemistry for Health & Life Sciences and Organic Chemistry for Health & Life Sciences and Organic Chemistry for Health & Life Sciences |

Mathematics

Choose the 017 or 021 series: 3

| MAT 017A & MAT 017B | Calculus for Biology & Medicine and Calculus for Biology & Medicine |
| MAT 021A & MAT 021B | Calculus and Calculus |

Physics

Choose the 001 or 007 series: 6-12

| PHY 001A & PHY 001B | Principles of Physics and Principles of Physics |
| PHY 007A & PHY 007B & PHY 007C | General Physics and General Physics and General Physics |

Recommended

Chemistry

| CHE 002C | General Chemistry |
| or CHE 004C | General Chemistry for the Physical Sciences & Engineering |

Mathematics

| MAT 017C & MAT 021C | Calculus for Biology & Medicine and Calculus |

Preparatory Subject Matter Subtotal 45-57

Depth Subject Matter

Biological Science

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

Statistics

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

Evolution

| EVE 100 | Introduction to Evolution | 4 |

Ecology

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

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  
NBP 100  Neurobiology  
NBP 101  Systemic Physiology  
NBP 102  Animal Behavior  
NBP 107  Cell Signaling in Health & Disease  
NBP 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  
NBP 100L  Neurobiology Laboratory  
NBP 101L  Systemic Physiology Laboratory  
NBP 121L  Physiology of Reproduction Laboratory  
NBP 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

别的课程经系主任批准。

深度主题领域子总 31-41

总单位 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.