BIOLOGICAL SCIENCES, BACHELOR OF ARTS

College of Biological Sciences

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. The program provides 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 and biological/environmental law.

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

Students interested in Marine Biology should visit Marine & Coastal Science Major (https://catalog.ucdavis.edu/departments-programs-degrees/earth-planetary-sciences/marine-coastal-science-bs/) & Bodega Marine Laboratory (http://bml.ucdavis.edu/).

The major requirements below are in addition to meeting University Degree Requirements (https://catalog.ucdavis.edu/undergraduate-education/university-degree-requirements/) & College Degree Requirements (https://catalog.ucdavis.edu/undergraduate-education/college-degree-requirements/); unless otherwise noted. The minimum number of units required for the Biological Sciences Bachelor of Arts is 76.

Code	Title	Units
Preparatory Subject Matter		
Biological Science		*15*
BIS 002A & BIS 002B & BIS 002C	Introduction to Biology: Essentials of Life on Earth and Introduction to Biology: Principles of Ecology & Evolution and Introduction to Biology: Biodiversity & the Tree of Life	
Chemistry		
Choose the 002 or 004 series: [1]		10
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]		6-12
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]		8
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	Calculus for Biology & Medicine	
or MAT 021C	Calculus	
Preparatory Subject Matter Subtotal		45-57
Depth Subject Matter		
Biological Science		
BIS 101	Genes & Gene Expression	4
or BIS 101V	Genes & Gene Expression	
BIS 105	Biomolecules & Metabolism	3-6
or BIS 102 & BIS 103	Structure & Function of Biomolecules and Bioenergetics & Metabolism	
Statistics		
STA 100	Applied Statistics for Biological Sciences	4
or STA 013	Elementary Statistics	
or STA 013Y	Elementary Statistics	

Evolution		
EVE 100	Introduction to Evolution	4
Ecology		
ESP 100	General Ecology	4
or EVE 101	Introduction to Ecology	
Microbiology		
Choose one:		3-4
MMG 102		
or MIC 102 DISCONTINUED FOR FALL 2026 **		
MMG 162	General Virology	
or MIC 162 DISC		
MMG 170	Yeast Molecular Genetics	
or MIC 170 DISCONTINUED FOR FALL 2025 **		
Animal Physiology, Behavior or Development		
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	(Discontinued for spring 2023) **	
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/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:		3-5
Choose two with three hours lab or field work/week:		
EVE 110	Running, Swimming & Flying (Discontinued) **	
EVE 140	Paleobotany (Discontinued) **	
EVE/ENT 180A	Experimental Ecology & Evolution in the Field	
EVE/ENT 180B	Experimental Ecology & Evolution in the Field	
MCB 185	Computer Programming for Biologists	
MMG 103L		
or MIC 103L DISCONTINUED FOR FALL 2026 **		
NPB 100L	Neurobiology Laboratory	
NPB 101L	Systemic Physiology Laboratory	
NPB 121L	Physiology of Reproduction Laboratory	
NPB 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 (Discontinued for winter 2026) **	
EVE 106	Mechanical Design in Organisms (Discontinued for winter 2026) **	
EVE 112L	Biology of Invertebrates Laboratory	
EVE 114	Experimental Invertebrate Biology	
EXB 106L/ CHA 101L	Human Gross Anatomy Laboratory	
MIC 104L	General Microbiology Laboratory (Discontinued for fall 2026) **	
or MMG 107L		
MIC 105L	Microbial Diversity Laboratory (Discontinued for fall 2026) **	
MCB 120L	Molecular Biology & Biochemistry Laboratory	
MCB 140L	Cell Biology Laboratory	
MCB 160L	Principles of Genetics Laboratory	
NPB 141P	(Discontinued for spring 2023) **	
PLB 102/ PLS 102 DISCONTI	(Discontinued for winter 2024) **	
PLB 105	Developmental Plant Anatomy	
PLB 108/ EVE 108 DISCONTI	(Discontinued for winter 2024) **	
PLB/PLS 116	Plant Morphology & Evolution	
PLB/PLP 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.

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Course(s) discontinued; see your advisor for course options.