

HUMAN BIOLOGY, BACHELOR OF SCIENCE

College of Biological Sciences

Frédéric Chédin, Ph.D., Professor, Chairperson of the Department of Molecular & Cellular Biology; term ends June 30, 2026

W. Martin Usrey, Ph.D., Chairperson of the Department Neurobiology, Physiology, & Behavior

149 Briggs Hall; 530-752-3611; Molecular & Cellular Biology (<http://www.mcb.ucdavis.edu>)

196 Briggs Hall; 530-752-0203; Neurobiology, Physiology & Behavior (<https://npb.ucdavis.edu/>)

The Human Biology major provides students with a broad biological understanding of our species, from molecules, genes, and cells to tissues, organ systems and organism/environment interactions. The curriculum includes classes on the basic principles that help us understand normal human physiology, human health, and the molecular basis of disease.

The Program

In the freshman and sophomore years, students majoring in Human Biology build a broad scientific background, taking courses in chemistry, biology, physics, and mathematics. As juniors or seniors, students can enroll in a variety of courses focused on biological processes and diseases that affect humans.

Career Alternatives

The Human Biology major provides fundamental knowledge needed for a broad range of careers, including those in the areas of healthcare, biotechnology, public health, public policy, and education, and for advanced study in health-related disciplines, including medicine, dentistry, nursing, physical therapy, and pharmacy.

Faculty

Faculty includes all members of the Departments of Neurobiology, Physiology, & Behavior, Molecular & Cellular Biology, Evolution & Ecology, Microbiology & Molecular Genetics, and Plant Biology in the College of Biological Sciences.

Faculty Advisors

Mona Monfared, Ph.D.; Alex Nord, Ph.D.

Advising

Biology Academic Success Center (BASC) (<https://basc.biology.ucdavis.edu/>) in 1023 Katherine Esau Science Hall (formerly Sciences Laboratory Building); 530-752-0410.

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 Human Biology Bachelor of Science is 96.

Code	Title	Units
Preparatory Subject Matter		
<i>Biological Science</i>		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
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<i>Chemistry</i>		
Choose CHE 002 or CHE 004 series: ¹		15
CHE 002A & CHE 002B & CHE 002C	General Chemistry and General Chemistry and General Chemistry	
OR		
CHE 004A & CHE 004B & CHE 004C	General Chemistry for the Physical Sciences & Engineering and General Chemistry for the Physical Sciences & Engineering and General Chemistry for the Physical Sciences & Engineering	
Choose CHE 008 or CHE 118 series: ²		6-12
CHE 008A & CHE 008B	Organic Chemistry: Brief Course and Organic Chemistry: Brief Course	
OR		
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	
<i>Mathematics</i>		
Choose MAT 017 or MAT 021 series: ³		8-12
MAT 017A & MAT 017B & MAT 017C	Calculus for Biology & Medicine and Calculus for Biology & Medicine and Calculus for Biology & Medicine	
OR		
MAT 021A & MAT 021B & MAT 021C	Calculus and Calculus and Calculus (Recommended)	
<i>Physics</i>		12
PHY 007A & PHY 007B & PHY 007C	General Physics and General Physics and General Physics	
Preparatory Subject Matter Subtotal		56-66
Depth Subject Matter		
<i>Biological Science</i>		
BIS 101 or BIS 101V	Genes & Gene Expression Genes & Gene Expression	4
BIS 104	Cell Biology	3
BIS 105 or BIS 102 & BIS 103	Biomolecules & Metabolism Structure & Function of Biomolecules and Bioenergetics & Metabolism	3-6
<i>Statistics</i>		
STA 100	Applied Statistics for Biological Sciences	4
Choose one:		3-4
EVE 100	Introduction to Evolution	
EVE 131	Human Genetic Variation & Evolution	
MCB 162	Human Genetics & Genomics	

<i>Microbiology</i>	
MMG 102	3
or MIC 102 DISCONTINUED FOR FALL 2026 **	
<i>Neurobiology, Physiology, & Behavior</i>	
NPB 101 Systemic Physiology	5
Depth Subject Matter Subtotal	25-29
Restricted Electives	
Courses meeting this requirement must come from at least two of the following categories; any cross-listed courses taken will count for only one category; must include at least one approved lab course.	15-19
Genetics, Genomics, & Development (p. 2)	
Physiology & Neurobiology (p. 2)	
Origins of Disease & Human Health (p. 3)	
Restricted Electives Subtotal	15-19
Total Units	96-114

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With BASC advisor approval, these combinations also satisfy the Chemistry requirement: CHE 004A-CHE 002A (3 units w/no lab)-CHE 002B-CHE 002C; CHE 004A, CHE 004B-CHE 002C.

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 017C; MAT 017A-MAT 021B.

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

Genetics, Genomics, & Development

Code	Title	Units
ANT 153	Human Genetics: Mutation & Migration	5
BIS 181	Comparative Genomics	3
BIS 183	Functional Genomics	3
EVE 102	Population & Quantitative Genetics	4
EVE 131	Human Genetic Variation & Evolution	3
MCB 121	Advanced Molecular Biology	3
MCB 144	Mechanisms of Cell Division	3
MCB 150	Developmental Biology	4
MCB 162	Human Genetics & Genomics	3
MCB 163	Developmental Genetics	3
MCB 164	(Discontinued for spring 2025) **	3
MCB 182	Principles of Genomics	3
MIC 150	(Discontinued for winter 2025) **	3
NPB 122	Developmental Endocrinology (Discontinued)	3
NPB 132	Nature vs. Nurture: Physiological Interactions Among Genes, Nutrients & Health	3
NPB 133	Genes & the Brain	4
NPB 161	Developmental Neurobiology (Discontinued for winter 2026) **	3

Approved Laboratory Courses:	
MCB 160L	Principles of Genetics Laboratory
MMG 103L	or MIC 103L DIS
EVE 105	Phylogenetic Analysis of Vertebrate Structure (Discontinued for winter 2026) **

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

Physiology & Neurobiology

Code	Title	Units
EXB 101	Exercise Physiology	4
EXB 106/CHA 101	Human Gross Anatomy	4
EXB 106L/CHA 101L	Human Gross Anatomy Laboratory	3
EXB 110	Exercise Metabolism	3
EXB 124	Physiology of Maximal Human Performance	4
NPB 100	Neurobiology	4
NPB 107	Cell Signaling in Health & Disease	3
NPB 109	Kinesiology: Analysis & Control of Human Movement	4
NPB 113	Cardiovascular, Respiratory, & Renal Physiology	4
NPB 114	Gastrointestinal Physiology	3
NPB 122	Developmental Endocrinology (Discontinued for winter 2026) **	3
NPB 130	Physiology of the Endocrine Glands	4
NPB 132	Nature vs. Nurture: Physiological Interactions Among Genes, Nutrients & Health	3
NPB 133	Genes & the Brain	4
NPB 134	General Immunology for Physiologists	3
NPB 140	Principles of Environmental Physiology	3
NPB 152/PSC 123	Hormones & Behavior	3
NPB/HPH 157	Advanced Physiology of Animal/Human Disease	3
NPB 161	Developmental Neurobiology (Discontinued for winter 2026) **	3
NPB 163	Systems Neuroscience	4
NPB 164	Mammalian Vision (Discontinued for winter 2026) **	4
NPB 165	Neurobiology of Speech Perception	3
NPB 167	Computational Neuroscience	5
NPB 168	Neurobiology of Addictive Drugs	4
NPB 171	Physiology of Neuroimmune Interactions	4
NPB 172	Map Formation in the Brain (Discontinued for winter 2026)	3
NPB 173	Neurobiology of Brain Disorders	3
Approved Laboratory Courses:		
EVE 105	Phylogenetic Analysis of Vertebrate Structure (Discontinued for winter 2026) **	
NPB 100L	Neurobiology Laboratory	
NPB 101L	Systemic Physiology Laboratory	

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

Origins of Disease & Human Health

Code	Title	Units
EVE 161	Microbial Phylogenomics; Genomic Perspectives on the Diversity & Diversification of Microbes	3
EXB 101	Exercise Physiology	4
EXB 106	Human Gross Anatomy	4
EXB 106L	Human Gross Anatomy Laboratory	3
EXB 110	Exercise Metabolism	3
EXB 124	Physiology of Maximal Human Performance	4
MIC 150	(Discontinued for winter 2025) **	3
MMG 111 or MIC 111 DISCON	Human Microbiology	3
MMG 162 or MIC 162 DISCONTINUED FOR FALL 2024 **	General Virology	3
MMG 172 or MIC 172 DISCON	Host-Parasite Interactions	3
MMG 175 or MIC 175 DISCONTINUED FOR FALL 2025 **	Cancer Biology	3
NPB 107	Cell Signaling in Health & Disease	3
NPB 109	Kinesiology: Analysis & Control of Human Movement	4
NPB 132	Nature vs. Nurture: Physiological Interactions Among Genes, Nutrients & Health	3
NPB 134	General Immunology for Physiologists	3
NPB/HPH 157	Advanced Physiology of Animal/Human Disease	3
NPB 168	Neurobiology of Addictive Drugs	4
NPB 171	Physiology of Neuroimmune Interactions	4
NPB 173	Neurobiology of Brain Disorders	3
Approved Laboratory Courses:		
MCB 120L	Molecular Biology & Biochemistry Laboratory	
MMG 103L or MIC 103L DIS		

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