

BIOLOGICAL SCIENCE MAJOR: BIOLOGICAL SCIENCE CONCENTRATION

GRADUATION REQUIREMENTS

1. Complete all Biology Core, Major Electives, Physical Sciences/Math, and AUCC Requirements.
2. Minimum of **120 total credits**.
3. Minimum of **42 upper division credits** (300 level or above).
*30 upper division credits must be in-residence at CSU
4. Minimum of **2.0 CUMULATIVE GPA**.

ALL UNIVERSITY CORE CURRICULUM (AUCC)

Must earn at least a 2.0 cumulative GPA in the AUCC courses.

Categories 1 & 2: Fundamental Competencies

- 1A. Fundamental Competency – CO 150 (3 credits) _____
 - 1B. Fundamental Competency (3 credits) fulfilled by major
 - 1C. Fundamental Competency (3 credits) _____
2. Advanced Writing (3 credits) _____

Category 3: Foundations and Perspectives

- 3A. Bio/Phys Sciences (7 credits) fulfilled by major
- 3B. Arts/Humanities (6 credits) _____

- 3C. Social/Behavioral (3 credits) _____
- 3D. Historical Perspectives (3 credits) _____

Category 4: Depth and Integration

LIFE 320 and BZ 350 (see CORE Requirements below)

GRADE REQUIREMENTS

Must earn at least a C- in all Biology Core & Major Elective courses. This also applies to courses taken as substitutions for these requirements.

BIOLOGY CORE REQUIREMENTS

- LIFE 102 Attributes of Living Systems (4) _____
- LIFE 103 Biology of Organisms (4) _____
- BZ 220 Introduction to Evolution (3) _____
- BZ 310 Cell Biology (4) _____
- BZ 311 Developmental Biology (4) _____
- BZ 350 Molecular & General Genetics (4) _____
- LIFE 320 Ecology (3) _____

PHYSICAL SCIENCES/MATH

CHEMISTRY

CHEM 111 (4) _____ CHEM 112 (1) _____

AND

CHEM 113 (3) _____ CHEM 114 (1) _____

ORGANIC CHEMISTRY

CHEM 245 (4) _____ CHEM 246 (1) _____

OR

CHEM 341* (3) _____ CHEM 343 (3) _____

CHEM 344 (2) _____

BIOCHEMISTRY

BC 351 (4) _____

OR

BC 401 (3) _____ BC 403 (3) _____

PHYSICS

PH 121 (5) _____ PH 122 (5) _____

OR

PH 141 (5) _____ PH 142 (5) _____

CALCULUS

MATH 155 (4) _____ **OR** MATH 160 (4) _____

STATISTICS

STAT 301 (3) _____ **OR** STAT 307 (3) _____

* Chemistry requires C or better in CHEM 341 to move on to CHEM 343.

MAJOR ELECTIVES

Must complete a minimum of 18 credits from the major electives lists.

***At least 9 credits must be “BZ” courses.**

***With approval of the Curriculum Committee, up to 3 credits of the following can be applied toward a student’s major electives:**

*BZ 384 Supervised College Teaching

*BZ 487 Internship

*BZ 495 Independent Study

*BZ 498 Laboratory or Field Research

TRACK 1 HONORS PROGRAM STUDENTS ARE REQUIRED TO TAKE THE FOLLOWING COURSES TO FULFILL THE AUCC CURRICULUM

Category 1: Fundamental Competencies

HONR 192 First Year Seminar (3) _____

HONR 193 Seminar (3) _____

Category 2: Fundamental Competency

Advanced Writing (3) _____

Category 3B: Arts/Humanities

HONR 292B Seminar (3) _____

HONR 392 Seminar (3) _____

Category 3C: Social/Behavioral

HONR 492 Senior Seminar (3) _____

Category 3D: Historical Perspectives and 1C: Fundamental Competency

HONR 399 Pre-Thesis (1) _____

HONR 499 Thesis (3) _____

MAJOR ELECTIVES

Students must complete a **minimum of 18 credits** across this list. **At least 9 credits must be from “BZ” courses.**

*With the approval of the Biology Curriculum Committee, a maximum of 3 credits from BZ 384, BZ 487, BZ 495, and BZ 498 may be applied towards a student’s major electives.

BZ 212 (4)	Animal Biology – Invertebrates	BZ 475 (3)	Marine Mammalogy
BZ 214 (4)	Animal Biology – Vertebrates	BZ 477 (2)	Genome Editing
BZ 223 (3)	Plant Identification	BZ 478 (3)	Biology & Behavior of Cats (online)
BZ 240 (3)	Synthetic Biology – Principles and Applications	BZ 479 (3)	Biology & Behavior of Dogs (online)
BZ 300 (3)	Animal Behavior	BZ 492A-G (1)	Seminar (topic dependent on instructor)
BZ 320 (3)	Biogeographic Approaches to Conservation	BZ 496 (1)	Group Study – Biology (Honors)
BZ 325 (4)	Plant Systematics	BZ 515 (3)	Physiological Ecology of Marine Vertebrates
BZ 329 (4)	Herpetology	BZ 520 (3)	Advanced Systematics
BZ 330 (4)	Mammalogy	BZ 526 (3)	Evolutionary Ecology
BZ 331 (4)	Developmental Plant Anatomy	BZ 530 (2)	Ecological Plant Morphology
BZ 333 (4)	Introductory Mycology	BZ 535 (3)	Behavioral & Cognitive Ecology
BZ 335 (3)	Ornithology	BZ 540 (2)	Translocation in Plants
BZ 339 (3)	Field Practicum	BZ 541 (3)	Hemp Biology (online)
BZ 340 (4)	Field Mammalogy	BZ 544 (2)	Effective Scientific Presentations
BZ 342 (3)	Exploring Range Shifts in a Changing World	BZ 560 (3)	Teaching & Communication Science
BZ 348 (4)	Theory of Pop. & Evolutionary Ecology	BZ 562 (2)	Computational Approaches in Molecular Ecology
BZ 349 (3)	Tropical Ecology & Evolution	BZ 565 (1)	Next Generation Sequencing Platform/Libraries
BZ 360 (3)	Bioinformatics & Genomics	BZ 568 (3)	Sustaining River Ecosystems in a Changing World
BZ 390 (3)	Biology of Sex	BZ 570 (3)	Molecular Aspects of Plant Development
BZ 401 (3)	Comparative Animal Physiology	BZ 572 (3)	Phytoremediation (online)
BZ 414 (3)	Vertebrate Climate Change Responses		
BZ 415 (4)	Marine Biology		
BZ 418 (4)	Ecology of Infectious Diseases		
BZ 420 (3)	Evolutionary Medicine	AB 303 (2)	Entomology Lab
BZ 424 (3)	Principles of Systematic Zoology	AB 340 (3)	Insect Biotechnology
BZ 425 (3)	Conservation & Population Genomics		
BZ 430 (3)	Animal Behavior & Conservation	ANEQ 310 (3)	Animal Reproduction
BZ 433 (3)	Behavioral Genetics	ANEQ 320 (3)	Principles of Animal Nutrition
BZ 435A (2)	Study Abroad-Honduras: Dolphin Behavior & Physiology	ANEQ 322 (2)	Pet Nutrition
BZ 435B (3)	Study Abroad-Mexico: Practices in Marine Biology & Ecology	ANEQ 323 (2)	Zoo Nutrition
BZ 435C (3)	Study Abroad-Kenya: Biology & Behavior of African Mammals	ANEQ 330 (3)	Principles of Animal Breeding
BZ 435D (3)	Study Abroad-Madagascar: Biology & Behavior of Primates		
BZ 440 (3)	Plant Physiology	ANTH 370 (3)	Primates
BZ 441 (2)	Plant Physiology Lab	ANTH 373 (3)	Human Evolution
BZ 449A (4)	Study Abroad-Ecuador: Ecology & Conservation-Ecuadorian Biodiversity	ANTH 374 (3)	Human Biological Variation
BZ 450 (4)	Plant Ecology	ANTH 470 (4)	Paleontology Field School
BZ 455 (3)	Human Heredity & Birth Defects		
BZ 460 (4)	Genome Evolution	BC 353 (4)	Pre-Health Genetics
BZ 462 (5)	Parasitology & Vector Biology	BC 401 (3)	Comprehensive Biochemistry I
BZ 471 (3)	Stream Biology & Ecology	BC 403 (3)	Comprehensive Biochemistry II
BZ 472 (1)	Stream Biology & Ecology Lab	BC 404 (2)	Comprehensive Biochemistry Lab
		BC 463 (3)	Molecular Genetics
		BMS 300 (4)	Human Physiology
		BMS 301 (5)	Human Gross Anatomy
		BMS 302 (2)	Laboratory in Principles of Physiology

BMS 305 (4)	Domestic Animal Gross Anatomy	PHIL 325 (3)	Philosophy of Natural Science
BMS 310 (4)	Anatomy for the Health Prof. (online)	PHIL 326 (3)	Philosophy of Biology
BMS 320 (2)	Virtual Laboratory in Physiology		
BMS 325 (3)	Cellular Neurobiology	PSY 352 (3)	Learning & Memory
BMS 330 (4)	Microscopic Anatomy	PSY 454 (3)	Biological Psychology
BMS 345 (4)	Functional Neuroanatomy		
BMS 400 (1)	Case Studies - Neuroanatomy	RS 331 (3)	Wildland Plants & Plant Communities
BMS 405 (3)	Nerve & Muscle - Toxins, Trauma, & Disease	RS 351 (3)	Wildland Ecosystems in a Changing World
BMS 409 (3)	Human & Animal Reproductive Bio	RS 478 (3)	Ecological Restoration
BMS 420 (3)	Cardiopulmonary Physiology		
BMS 425 (3)	Introduction to Systems Neurobiology	SOCR 455 (3)	Soil Microbiology
BMS 430 (3)	Endocrinology	SOCR 456 (1)	Soil Microbiology Lab
BMS 450 (3)	Pharmacology		
BMS 460 (3)	Essentials of Pathophysiology	VS 331 (4)	Histology (online)
		VS 333 (4)	Domestic Animal Anatomy (online)
BSPM 302 (2)	Applied & General Entomology		
BSPM 361 (3)	Elements of Plant Pathology		
BSPM 423 (3)	Evolution & Classification of Insects		
ERHS 332 (3)	Principles of Epidemiology		
ERHS 340 (2)	Cancer Biology, Medicine, and Society		
ERHS 450 (3)	Introduction to Radiation Biology		
F 311 (3)	Forest Ecology		
FSHN 350 (3)	Human Nutrition		
FW 300 (2)	Biology & Diversity of Fishes		
FW 301 (1)	Ichthyology Lab		
FW 400 (3)	Cons. of Fish in Aquatic Ecosystems		
FW 405 (3)	Fish Physiology		
GEOL 342 (3)	Paleontology		
HES 403 (4)	Physiology of Exercise		
HORT 460 (3)	Plant Breeding		
MIP 300 (3)	General Microbiology		
MIP 302 (2)	General Microbiology Lab		
MIP 303 (1)	General Microbiology – Honors Recitation		
MIP 315 (3)	Human & Animal Disease		
MIP 334 (3)	Food Microbiology		
MIP 335 (2)	Food Microbiology Lab		
MIP 342 (4)	Immunology		
MIP 343 (2)	Immunology Lab		
MIP 351 (3)	Medical Bacteriology		
MIP 352 (3)	Medical Bacteriology Lab		
MIP 420 (4)	Medical & Molecular Virology		
MIP 425 (2)	Virology & Cell Culture Lab		
MIP 432 (3)	Microbial Ecology		
MIP 433 (1)	Microbial Ecology Lab		
MIP 443 (4)	Microbial Physiology		
MIP 450 (3)	Microbial Genetics		
NR 370 (3)	Coastal Environmental Ecology		