

PROGRAM OVERVIEW

Biology is the study of life, and integrative biology emphasizes the study and understanding of living organisms at different levels of organization—from cell and molecular to the biosphere. We teach biology students core information that serves as a foundation for advanced study and professional training. This basic knowledge includes concepts central to our understanding of molecular biology, as well as the relationship between structure and function, and the genetic mechanisms of inheritance. In addition, biology students are educated in cell biology and genetics, as well as the technological breakthroughs that have led to discoveries in these fields. They learn how organisms adapt to diverse environments and about energy flow and nutrient cycles through ecosystems, worldwide biodiversity and how ecological function can be altered by human impacts.

Through the study of biology, students are introduced to the cornerstones of the discipline within an evolutionary context, thereby leading to an appreciation for the diversity of life on earth and the processes supporting it. Our majors are instilled with a respect, concern, and sense of responsibility for life and the environment, as well as the knowledge to understand and evaluate biological advances that are transforming society. Our curriculum is designed to offer, through core and ancillary courses, a firm foundation in those areas that provide an important background for understanding life processes. Choosing from among a variety of biology electives accommodates individual interests.

ACADEMIC ADVISING

The College of Liberal Arts and Sciences (CLAS) supports students to graduation using a shared advising system. CLAS students have two academic advisors with whom they should meet regularly to discuss academic and degree progress: a CLAS Academic Advisor and a major/faculty advisor.

For questions related to CU Denver Core Curriculum, CLAS, general graduation requirements, university/college academic policies, or campus resources contact:

CLAS Academic Advising

clas_advising@ucdenver.edu

Find your CLAS Advisor [here](#)

North Classroom (NC) Building 1030
303-315-7100

For questions related to major requirements, major course prerequisites, or evaluation of transfer coursework in your major contact:

Kim Regier or Cheri Jones

kimberly.regier@ucdenver.edu or cheri.jones@ucdenver.edu

Visit the department website [here](#)

Science Building Room 2071
303-315-7600

GENERAL GRADUATION REQUIREMENTS & POLICIES

All CU Denver CLAS students are required to complete the following minimum general graduation requirements to be eligible to apply for graduation:

1. Complete a minimum of 120 semester hours
2. Achieve a minimum 2.0 CU cumulative grade point average (GPA)
3. Complete a minimum of 45 upper-division (3000- to 4000-level) semester hours
4. Complete all CU Denver Core, CLAS, and major requirements
5. Complete a minimum of 30 CLAS hours at CU Denver

*The following are **maximum** semester hours that can apply toward the minimum 120 hours required for graduation:*

- 56 semester hours in major department/prefix courses
- 16 semester hours Pass/Fail
- 12 semester hours of Independent Study/Directed Research
- 12 semester hours of internship credit
- 8 semester hours of physical education credit

PROGRAM REQUIREMENTS & POLICIES

Students are responsible for meeting with the major/faculty advisor in the department to confirm major requirements. In addition to completing all CU Denver Core and CLAS requirements, students completing the Biology B.S. Degree are required to complete the following minimum program requirements:

1. Students must complete a total of 67-69 credit hours, including a minimum of 36 BIOL credit hours and 31-33 credit hours in ancillary (supporting math and science) coursework.
2. Students must complete a minimum of 18 upper division (3000- level and above) BIOL credit hours.
3. Students must achieve a minimum GPA of 2.0 for all courses applied to major requirements, including ancillary courses.
4. Students must complete all major courses, including ancillary courses, taken at CU Denver and all transfer courses applying to major requirements with a minimum grade of C-(1.7). Students cannot complete major or ancillary course requirements as pass/fail.
5. Students must complete a minimum of 18 BIOL credit hours with CU Denver faculty.
6. All biology courses applied to the undergraduate biology major must be completed within 10 years of graduation.
7. Students cannot use courses taken to fulfill the Biology minor requirements toward fulfilling requirements in the Biology major or in other science majors, minors or certificates.
8. Departmental honors will be awarded to students based on their GPA in biology classes taken at CU Denver and their cumulative CU GPA. Both GPAs must be ≥ 3.500 for cum laude honors; ≥ 3.700 for magna cum laude honors; or ≥ 3.900 for summa cum laude honors.

CAREER RESOURCES

Are you interested in learning about career and occupational options for this major? Visit the CU Denver Career Center located in the Tivoli Student Union (TV) Suite 267 to speak with a career counselor or browse the Career Center [website](#) for career and job information related to this major.

Degree Requirements	Credits	Notes
* Course prerequisites change regularly. Students are responsible for consulting advisors and the class schedule in the student portal for prerequisite information. *		
CU Denver Core Curriculum Requirements	34 - 40	CU Denver Core Curriculum Requirements
CLAS Graduation Requirements	15 - 29	CLAS Graduation Requirements
BIOL Major Requirements	67 - 69	
BIOL Required Courses		
BIOL 2051 & 2071 General Biology I with lab or BIOL 2095 & 2096 Honors General Biology I with lab	4	<i>*Prerequisite: High School chemistry or CHEM 1000 recommended Courses can fulfill CU Denver Core Natural/Physical Science with lab</i>
BIOL 2061 & 2081 General Biology II with lab or BIOL 2097 & 2098 Honors General Biology II with lab	4	<i>*Prerequisite: C- or higher in General or Honors BIOL I with lab Courses can fulfill CU Denver Core Natural/Physical Science with lab</i>
BIOL 3411 Principles of Ecology	3	<i>*Prerequisite: C- or higher in General or Honors BIOL I & II with labs</i>
BIOL 3445 Introduction to Evolution	3	<i>*Prerequisite: C- or higher in General or Honors BIOL I & II with labs</i>
BIOL 3611 General Cell Biology	3	<i>*Prerequisite: C- or higher in General or Honors BIOL I & II with labs and General or Honors CHEM I & II with labs</i>
BIOL 3832 General Genetics	4	<i>*Prerequisite: C- or higher in General or Honors BIOL I & II with labs</i>
BIOL Major Electives Complete an additional 15 semester hours of upper-division biology including: One upper-division biology lab course and One 3 credit-hour 4000-level lecture course taken in residence from CU Denver Biology faculty	15	<i>*Check individual courses for prerequisites. *CHEM 3810 or 4820 may be counted as BIOL elective hours. *A max of six hours of Independent Study (BIOL3840/4840) or Directed Research (BIOL4880) or Internship (BIOL3939) be may counted toward upper-division biology elective. Internship or Directed Research is highly recommended. *BIOL 4125, 4840, 4880, and 4990 will not count as the 4000-Level elective but can apply as biology electives.</i>
Ancillary (Supporting Math and Science) Courses:		
CHEM 2031 & 2038 General Chemistry I with lab or CHEM 2081 & 2088 Honors General Chemistry I with lab	4 - 5	<i>*Prerequisite: MATH1110 and High School chemistry or CHEM 1000 recommended</i>
CHEM 2061 & 2068 General Chemistry II with lab or CHEM 2091 & 2098 Honors General Chemistry II with lab	5	<i>*Prerequisite: C- or higher in General or Honors CHEM I with lab</i>
CHEM 3411 Organic Chemistry I or CHEM 3481 Honors Organic Chemistry I	4	<i>*Prerequisite: C- or higher in General or Honors CHEM I & II with labs</i>
PHYS 2010 College Physics I or PHYS 2311 General Physics I	4	<i>*Check individual courses for prerequisites.</i>
PHYS 2030 College Physics I lab or PHYS 2321 General Physics I lab or PHYS 2351 Applied Physics I lab	1	<i>*Check individual courses for prerequisites.</i>
PHYS 2020 College Physics II or PHYS 2331 General Physics II	4	<i>*Check individual courses for prerequisites.</i>
PHYS 2040 College Physics II lab or PHYS 2341 General Physics II lab or PHYS 2361 Applied Physics II lab	1	<i>*Check individual courses for prerequisites.</i>
Complete one of the following options: 1) MATH 1401 Calculus I or 2) BIOL 3763 Biostatistics and MATH 1110 College Algebra, MATH 1120 College Trigonometry, or MATH 1130 Precalculus or 3) MATH 4830 Applied Statistics and MATH 1110 College Algebra, MATH 1120 College Trigonometry, or MATH 1130 Precalculus	4 - 8	<i>*Check individual courses for prerequisites.</i>
Estimated General Electives	0 - 4	<i>General Elective credits vary based on Core & CLAS Requirements. Consult with CLAS Advisor.</i>
Total Minimum Program Hours:	120	<i>45 semester hours must be upper-division</i>

SAMPLE ACADEMIC PLAN OF STUDY

The following academic plan is a *sample* pathway to completing degree requirements for this major. Students should tailor this plan based on previously completed college coursework (e.g., AP, IB, CLEP, dual/concurrent enrollment, and transfer credit), course availability, and individual preferences related to course load, schedules, or add-on programs such as minors or double-majors.

Year One	Fall	CRS	Spring	CRS
	ENGL1020 – Core Composition I	3	ENGL2030 – Core Composition II	3
	MATH 1130 ^C	4	MATH 1401 ^{PE} , 4830 ^{PE} or BIOL 3763 ^{PE}	3-4
	BIOL 2051 & 2071 ^{PR C} or 2095 & 2096 ^{PR}	4	BIOL 2061 & 2081 ^{PE C} or 2097 & 2098 ^{PE}	4
	CHEM 2031 & 2038 ^{PR C} or 2081 & 2088	4	CHEM 2061 & 2068 ^{PE C} or 2091 & 2098 ^{PE}	5
	UNIV 1110 College Success	1		
	Total Credit Hours	16	Total Credit Hours	15-16

Year Two	Fall	CRS	Spring	CRS
	CLAS Communicative Skills – ENGL 4175 <i>recommended</i>	3	BIOL 3411 ^{PE}	3
	BIOL 3611 ^{PE}	3	BIOL 3445 ^{PE}	3
	CHEM 3411 ^{PE} or 3481 ^{PE}	4	BIOL 3832 ^{PE}	4
	CLAS Foreign Language Semester I	5	CLAS Foreign Language Semester II	5
	Total Credit Hours	15	Total Credit Hours	15

Year Three	Fall	CRS	Spring	CRS
	PHYS 2010 & 2030 ^C or 2311 & 2321 ^{PR C}	5	PHYS 2020 & 2040 ^C or 2331 & 2341 ^{PE}	5
	BIOL Upper-Division Course with lab ^{PE PR}	4	BIOL Upper-Division Course ^{PE} (Consider Internship/Directed Research)	3
	CU Denver Core Behavioral Science	3	CLAS Humanities – PHIL 2441 <i>recommended</i>	3
	CLAS Social Science, Upper-Division	3	CU Denver Core Social Science	3
	Total Credit Hours	15	Total Credit Hours	14

Year Four	Fall	CRS	Spring	CRS
	BIOL Upper-Division Course ^{PE}	3	BIOL 4000-Level Course ^{PE}	3
	BIOL Upper-Division Course ^{PE}	2	CU Denver Core International Perspectives	3
	CU Denver Core Humanities	3	CU Denver Core Cultural Diversity	3
	CLAS Behavioral Science	3	CU Denver Core Arts	3
	Upper-Division General Electives	5	Upper-Division General Elective	3
	Total Credit Hours	16	Total Credit Hours	15

^M Major Course Available ^C CU Denver Core Course ^{PE} Prerequisite Enforced ^{PR} Prerequisite Recommended

ALTERNATIVE SAMPLE ACADEMIC PLAN OF STUDY

The following academic plan is a *sample* pathway to completing degree requirements for this major. Students should tailor this plan based on previously completed college coursework (e.g., AP, IB, CLEP, dual/concurrent enrollment, and transfer credit), course availability, and individual preferences related to course load, schedules, or add-on programs such as minors or double-majors.

Students who choose this plan must realize they may take longer to graduate and may not be able to apply to professional health career programs until after their fourth, instead of their third, year.

Year One	Fall	CRS
	ENGL1020 – Core Composition I	3
	MATH 1110 ^C	4
	CU Denver Core Humanities / First-Year Seminar	3
	CHEM 1000	3
	CU Denver Core Social Science	3
	Total Credit Hours	16

Spring	CRS
ENGL2030 – Core Composition II	3
MATH 1120 ^C	3
BIOL 2051 & 2071 ^{PR C} or 2095 & 2096 ^{PE}	4
CHEM 2031 & 2038 ^{PR C} or 2081 & 2088 ^{PE}	4
Total Credit Hours	14

Year Two	Fall	CRS
	BIOL 2061 & 2081 ^{PE C} or 2097 & 2098 ^{PE}	4
	CHEM 2061 & 2068 ^{PE C} or 2091 & 2098 ^{PE}	5
	MATH 1401 ^{PE} , 4830 ^{PE} or BIOL 3763 ^{PE}	3-4
	CLAS Communicative Skills – ENGL 4175 <i>recommended</i>	3
	Total Credit Hours	15-16

Spring	CRS
BIOL 3611 ^{PE}	3
CHEM 3411 ^{PE} or 3481 ^{PE}	4
CLAS Humanities – PHIL 2441 <i>recommended</i>	3
CLAS Social Science, Upper-Division	3
Upper-Division General Elective	3
Total Credit Hours	16

Year Three	Fall	CRS
	BIOL 3411 ^{PE}	3
	BIOL 3445 ^{PE}	3
	PHYS 2010 & 2030 ^C or 2311 & 2321 ^{PR C}	5
	CLAS Foreign Language Semester I	5
Total Credit Hours	16	

Spring	CRS
BIOL 3832 ^{PE}	4
PHYS 2020 & 2040 ^C or 2331 & 2341 ^{PE}	5
CLAS Foreign Language Semester II	5
Total Credit Hours	14

Year Four	Fall	CRS
	BIOL Upper-Division Course with lab ^{PE PR}	4
	BIOL Upper-Division Course ^{PE} (Consider Internship/Directed Research)	3
	BIOL Upper-Division Course ^{PE}	2
	CLAS Behavioral Science, Upper-Division	3
	CU Denver Core Cultural Diversity	3
Total Credit Hours	15	

Spring	CRS
BIOL 4000-Level Course ^{PE}	3
BIOL Upper-Division Course ^{PE}	3
CU Denver Core Arts	3
CU Denver Core International Perspectives, Upper-Division	3
CU Denver Core Behavioral Science	3
Total Credit Hours	15

^M Major Course Available ^C CU Denver Core Course ^{PE} Prerequisite Enforced ^{PR} Prerequisite Recommended