BIOLOGICAL SCIENCES

Program Description

The major in Biological Sciences is primarily intended for students who plan to transfer to a four-year institution to earn a bachelor's degree. This major prepares students for careers in the health professions, teaching, forestry, agriculture, environmental protection and conservation, wildlife biology, biotechnology, basic research, and many other fields. Students who plan to major in the Biological Sciences should also visit the Biology website.

Students with an interest in biology who do not intend to transfer to a four-year institution and earn a bachelor's degree are encouraged to look into some of the other programs offered by the STEM Division and the Health Sciences and Horticulture Division, which are: dental assisting, dental hygiene, diagnostic medical sonography (ultrasound), environmental horticulture, paramedic, pharmacy technician, radiologic technology, respiratory therapy, veterinary technology and/or veterinary assistant.

Students who already have a bachelor's degree can meet the biology requirement for medical school by taking BIOL 1A, BIOL 1B, and BIOL 1C.

The department also offers a Certificate of Achievement in Bio-Health Diversity and Inclusion Leadership. Medical schools, healthcare employers, and biological research organizations specifically seek out candidates with an understanding of how issues of diversity impact their work. These organizations and employers understand that attending to diversity is critical for patient health and for excellence in research. This certificate provides a pathway for biology and health science students to gain certification in diversity, equity, inclusion, and service in their fields, such that students are more competitive for transfer and job applications. In earning the certificate, students will complete their major biology courses for their field alongside at least one service learning course focusing on service in bio/health fields.

Learn more about the program on the Biology website.

Associate Degree for Transfer

This program also offers Associate Degrees for Transfer. Learn more and review the degree requirements on the following listings: Biology AS-T, Environmental Science AS-T, Nutrition and Dietetics AS-T, and Public Health Science AS-T.

Program Learning Outcomes

- The biology majors sequence prepares students to use the scientific method to formulate questions, design experiments to test hypotheses, interpret experimental results to draw conclusions, communicate results both orally and in writing, and critically evaluate the use of the scientific method from published sources.
- The biology majors sequence prepares students to apply evolutionary theory at the molecular, cellular, organismal, and population levels to explain the unity and diversity of living things.

Award Type(s)

- AS = Associate in Science Degree
- CA = Certificate of Achievement

Units Required

- Major: 48-51
- Certificate(s): 17-22

Additional Information

Students planning to transfer to a four-year institution should meet with a counselor to develop an educational plan to ensure that both university general education and lower division major preparation requirements specific to the transfer institution(s) of choice are satisfied.

Students intending to transfer to the CSU system should inquire about the AS-T (Associate in Science for Transfer) in Biology.

Associate Degree Requirements

Code	Title	Units
English Proficiency		
Select one of the following:		
ENGL 1A	COMPOSITION & READING	5
ENGL 1AH	HONORS COMPOSITION & READING	5
ESLL 26	ADVANCED COMPOSITION & READING	5
or equivalent		
Ethnic Studies		
Any course in the ETHN (Ethnic Studies) subject code, currently approved for Area F of CSU GE and Area 7 of IGETC		
Mathematics Proficiency		
College-level math course at or above the level of Intermediate Algebra		

A minimum of 90 units is required[1] to include:

- Completion of one of the following general education patterns: Foothill General Education, CSU General Education Breadth Requirements or the Intersegmental General Education Transfer Curriculum (IGETC)
- Core courses (48-51 units)

[1] Additional elective course work may be necessary to meet the 90-unit minimum requirement for the associate degree.

Note: All courses pertaining to the major must be taken for a letter grade. In addition, a grade of "C" or better is required for all core courses used for the degree or certificate.

Core and Support Courses

Code	Title	Units
Core Courses		
BIOL 1A	PRINCIPLES OF CELL BIOLOGY	6
BIOL 1B	FORM & FUNCTION IN PLANTS & ANIMALS	6
BIOL 1C	EVOLUTION, SYSTEMATICS & ECOLOGY	6
CHEM 1A	GENERAL CHEMISTRY	5
CHEM 1B	GENERAL CHEMISTRY	5
CHEM 1C	GENERAL CHEMISTRY & QUALITATIVE ANALYSIS	5
And select one option from the following:		15-18
Option 1: Organic Chemistry		
CHEM 12A	ORGANIC CHEMISTRY	

CHEM 12AL	ORGANIC CHEMISTRY LABORATORY	
CHEM 12B	ORGANIC CHEMISTRY	
CHEM 12BL	ORGANIC CHEMISTRY LABORATORY	
CHEM 12C	ORGANIC CHEMISTRY	
CHEM 12CL	ORGANIC CHEMISTRY LABORATORY	
Option 2: Physics		
Select one of the following sequences:		
PHYS 2A & PHYS 2B & PHYS 2C	GENERAL PHYSICS and GENERAL PHYSICS and GENERAL PHYSICS	
PHYS 4A & PHYS 4B & PHYS 4C	GENERAL PHYSICS (CALCULUS) and GENERAL PHYSICS (CALCULUS) and GENERAL PHYSICS (CALCULUS)	
Total Units		**48-51**

Certificate Requirements

Certificate of Achievement in Bio-Health Diversity and Inclusion Leadership

- Units: 17-22

Code	Title	Units
Select one of the following options:		15-18
Option 1		
BIOL 1A	PRINCIPLES OF CELL BIOLOGY	
BIOL 1B	FORM & FUNCTION IN PLANTS & ANIMALS	
BIOL 1C	EVOLUTION, SYSTEMATICS & ECOLOGY	
Option 2		
BIOL 40A	HUMAN ANATOMY & PHYSIOLOGY I	
BIOL 40B	HUMAN ANATOMY & PHYSIOLOGY II	
BIOL 40C	HUMAN ANATOMY & PHYSIOLOGY III	
And, for either option, select one of the following:		2-4
AHS 55	COMMUNITY HEALTH PROMOTION	
BIOL 81	LEARNERS ENGAGED IN ADVOCATING FOR DIVERSITY IN STEM	
or CHEM 81	LEARNERS ENGAGED IN ADVOCATING FOR DIVERSITY IN STEM	
or C S 81	LEARNERS ENGAGED IN ADVOCATING FOR DIVERSITY IN STEM	
or MATH 83	LEARNERS ENGAGED IN ADVOCATING FOR DIVERSITY IN STEM	
Total Units		**17-22**