BIOLOGY (BIOL)

About the program

Biology is the scientific study of life, and requires a rigorous foundation in math, chemistry, and physics, as well as an introduction to the breadth of biological inquiry. Biological inquiry includes molecular, evolutionary, and ecological approaches to understanding organisms ranging from prokaryotes to unicellular and multicellular eukaryotes living in all habitats on earth. Implications of biological inquiry range from appreciation of the ways of living of diverse life forms to elucidating new medical treatments to mitigating the extinction of species due to climate change. Students who earn degrees in biology become critical thinkers generally, and are prepared to move forward with careers ranging from microbiology to medicine to ecology.

Degrees/Certificates within this Program:

- Associate in Science Degree for Transfer, Biology

Similar Degrees/Certificates offered at CR:

- Associate of Arts Degree, Liberal Arts: Science
- Associate of Arts Degree, Liberal Arts: Science Exploration

Transfer Opportunities

Learn more about transferring with an Associate Degree for Transfer at www.adegreewithaguarantee.com and www.redwoods.edu/transfer

For more information

- Counseling & Advising
  707-476-4150

Associate in Science in Biology for Transfer

	Units	CSU GE	IGETC Area	C-ID Descriptor
Required Core	**12.0**			
BIOL 3 Fundamental Cell Biology	4.0	B2, B3	5B, 5C	BIOL 190
BIOL 4 General Zoology	4.0			BIOL 150
BIOL 5 General Botany	4.0	B2	5B	BIOL 155
List A:	**22.0**			
CHEM 1A General Chemistry I	5.0	B1, B3	5A, 5C	CHEM 110
CHEM 1B General Chemistry II	5.0			CHEM 120S*
MATH 50A Differential Calculus	4.0	B4	2A	MATH 210
choose one Physics sequence:				
PHYS 2A General Physics I	4.0	B1, B3	5A, 5C	PHYS 105
PHYS 2B General Physics II	4.0			PHYS 110
OR				
PHYS 4A Calculus-Based Physics: Mechanics	4.0	B1, B3	5A, 5C	PHYS 205
PHYS 4B Calculus-Based Physics: Electricty and Magnetism	4.0			PHYS 210
Total Units for the Major:	**34.0**			
General Education (CSU GE or IGETC) units:		33.0**	31.0**	
Elective (UC or CSU Transferable) Units		as needed to complete 60 units total		
Total Degree Units (maximum):		60.0	60.0	

** C-ID 120S requires completion of both CHEM 1A and CHEM 1B*

*** This degree assumes completion of IGETC or CSU-GE Breadth for STEM, which allows for completion of 6 units of non-STEM GE coursework after transfer.*

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To meet the requirements for this degree the students must:

1. Completion of 60 semester units or 90 quarter units that are eligible for transfer to the California State University, including both of the following:

   a. The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements. The IGETC for STEM and CSU GE for STEM options permit students completing the A.S.-T in Biology to follow the IGETC or CSU GE curriculum but delay one Arts or Humanities course and one Social or Behavioral Science course until after transfer. Courses used to meet the major requirement may also be used to meet IGETC or CSU GE requirements ("double-counting").

   b. A minimum of 18 semester units in a major or area of emphasis (see Table below). Typically 38 units are required for the major but up to 10 may "double-count" as GE.

2. Obtain a minimum grade point average of 2.0, and a C or better in all courses required for the major. A "P" (Pass) is not an acceptable grade for a course required for the major.

Suggested Program Sequence

For information about the program length and suggested sequence of courses for this degree, please see an Academic Advisor.

Program Learning Outcomes

- Apply methods of scientific inquiry to questions regarding organisms and biological processes.
- Communicate clearly both verbally and in writing regarding laboratory procedures, data analyses, and results.
- Apply concepts in mathematics, physics and chemistry to explain biological phenomena.
- Explain the mechanisms of gene expression and regulation, and how they direct cellular and organismal processes.
- Describe how evolutionary processes have generated similarity, diversity, and interconnectedness of organisms.