



## Biology

### Degrees

Biology, Associate of Science Degree for Transfer  
Human Biology, Associate of Science

## Biology

### Associate of Science Degree for Transfer

The Associate in Science in Biology for Transfer degree is designed to prepare students for a seamless transfer into the CSU system to complete a baccalaureate degree in Biology or similar major.

#### Program Learning Outcomes

The successful student will be able to:

- be able to demonstrate proficiency using a microscope.
- be able to research a topic, design experiments, synthesize and evaluate the information they find and will be able to justify and express their opinion on virtually any topic using the Scientific Method.

#### Requirements for AA-T or AS-T degrees:

The completion of 60 semester units that are eligible for transfer to the California State University, including the following:

- The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University – Breadth Requirements.
- A minimum of 18 semester units in a major area of emphasis, as determined by the district.
- The obtaining of a minimum grade point average of 2.0.
- The completion of all courses required for the major with a 'C' or better. A 'P' (Pass) grade is not acceptable for courses in the major.

Additionally, the Associate in Science in Biology for Transfer allows students to learn the fundamental principles and practices of biology in order to create a solid foundation for their future personal, academic, or vocational endeavors. The Associate in Science in Biology Degree for Transfer also provides solid preparation that is appropriate for a variety of scientific disciplines.

Biology is the study and application of principles of cell biology, ecology, evolution, genetics, anatomy and physiology as it relates to humans and other organisms. Laboratory and field trip activities emphasize the integrated and interdependent nature of living systems. Course work trains students to use observation and investigation to identify questions and pursue answers using the scientific method. Graduates with baccalaureate degree may pursue jobs in a variety of fields including; biochemistry, biotechnology, botany, ecology, entomology, genetics, health, immunology, medicine, molecular biology, oceanography, pharmacy, teaching, wildlife management, zoology and related clinical fields. Biology majors may choose to specialize in research based on a particular organism or an aspect of biology related to those listed above.

#### Career Opportunities:

Biochemistry, biotechnology, botany, ecology, entomology, genetics, health, immunology, medicine, molecular biology, oceanography, pharmacy, teaching, wildlife management and zoology.

#### Total Units: 32

##### Required Courses

Course #	Name	Units
BIOL B3A	General Biology I	5.0
BIOL B3B	General Biology II	5.0

##### List A - 22 Units

CHEM B1A	General Chemistry I	5.0
CHEM B1B	General Chemistry and Chemical Analysis	5.0
	<i>and</i>	
MATH B6A	Analytic Geometry/Calculus I	4.0
	<i>and</i>	
PHYS B2A	General Physics-Mechanics and Heat	4.0
PHYS B2B	General Physics-Sound, Light, Electricity	4.0
	Magnetism, Modern Physics	
	<i>or</i>	
PHYS B4A	Mechanics and Wave Motion	4.0
PHYS B4B	Heat, Electricity and Magnetism	4.0

#### Category

Units in Major	32	32
General Education	33	31
Possible double counting of GE's	10	10
Degree Total	60	60

#### CSU IGEC

\*SCIGETC - special GE for STEM

Note: Some UC campuses now require calculus-based physics for biology majors and other particular courses. If you are planning to transfer to a UC campus, contact their admissions office for advice.

## Human Biology

### Associate of Science Degree

#### Recommended Sequence

##### Semester 1 (17 Units)

Course #	Name	Units
BIOL B3A	General Biology I	5.0
CHEM B1A	General Chemistry I	5.0
MATH B6A	Analytic Geometry/Calculus I	4.0
	Area 3A or 3B Arts or Humanities elective	3.0

##### Semester 2 (16 Units)

PHYS B4A	Mechanics and Wave Motion	4.0
MATH B6B	Analytic Geometry/Calculus II	4.0
CHEM B1B	General Chemistry and Chemical Analysis	5.0
COMM B1	Public Speaking	3.0

##### Summer

ENGL B1A	Expository Composition	3.0
	<i>(Recommended to obtain UC Transfer Agreement or "TAG")</i>	
	2 years of foreign language at HS or 1 semester at BC	

##### Semester 3 (16 or 17 Units)

PHYS B4B	Heat, Electricity and Magnetism	4.0
BIOL B3B	General Biology II	5.0
ART B1	Art Appreciation	3.0
PHIL B9	Critical Thinking and Advanced Composition	3.0
	<i>or</i>	
ENGL B2	Advanced Composition and Critical Thinking	4.0

##### (Optional)

CHEM B30A	Organic Chemistry for Science Majors I	5.0
	<i>(Visit Transfer Counselor)</i>	

##### Semester 4 (12 Units)

ANTH B2	Introduction to Cultural Anthropology	3.0
	<i>or</i>	
SOCI B1	Introduction to Sociology	3.0
PSYC B1A	General Psychology	3.0
POLS B1	American Government:	3.0
	National, State and Local	
HIST B18	History of California	3.0

##### (Optional)

CHEM B30B	Organic Chemistry for Science Majors, II	5.0
	<i>(Visit Transfer Counselor)</i>	

Courses required for the Human Biology Associate of Science degree include biology and chemistry courses necessary for transfer to allied health programs such as nursing, physical therapy, Physician Assistant, and radiology. Please refer to the Suggested Program information and check with a counselor concerning specific degree requirements to specific programs and transfer institutions. Please note that many of the courses have prerequisites that are best taken in the appropriate order to ensure success. Students transferring to a four-year institution for a Bachelor of Science in Biology generally take the CHEM B1A, B1B sequence.

#### Requirements for the Associate of Science Degree

Upon completion of the following courses with at least a 'C' grade in each course, the student will be awarded a Biology - General Biology Associate in Science degree. To Transfer Coursework A minimum of 18 semester units in the major with a grade of 'C' or better while maintaining a minimum grade point average of at least 2.0 in all California State University transferable coursework.

#### Program Learning Outcomes

The successful student will be able to:

- identify medical problems and apply appropriate and effective solutions.
- analyze a clinical situation using anatomical terminology, select the correct technology to use for further examination, analyze and determine a diagnosis when a pathology is described, create a plan of action.
- demonstrate proficiency using a microscope.

#### Career Opportunities:

Nursing, physical therapy, medical technologist, and physician assistant.

#### Total Units: 18

##### Required Courses

Course #	Name	Units
BIOL B32	Human Anatomy and Physiology I	4.0
BIOL B33	Human Anatomy and Physiology II	4.0
BIOL B16	General Microbiology	5.0

##### Electives — Select 5 units from the following:

BIOL B21	Special Projects in Biology	1-2.0
CHEM B2A	Introductory General Chemistry	4.0
CHEM B11	Introduction to General, Organic, and Biochemistry	5.0
CHEM B1A	General Chemistry I	5.0
CHEM B1B	General Chemistry and Chemical Analysis	5.0
MEDS B60	Medical Terminology	3.0
NUTR B10	Elementary Nutrition	3.0

Note: Students transferring for a Bachelor of Science in Nursing should consult the university of choice as to which chemistry sequence meets transfer needs

