

BIOLOGY, ASSOCIATE IN SCIENCE FOR TRANSFER (AS-T)

Biology is the scientific study of life through the observation of structure, function, reproduction, growth, origin, evolution, and behavior of living organisms and their relation to each other and their environment. Advances in biological knowledge are providing solutions to the most challenging problems in medicine, environmental resources, agriculture and human ecology. Employment opportunities continue to increase as knowledge grows in genetic engineering, embryonic development, learning and memory, aging, environmental studies, natural resource management and the regulation of populations.

The Associate in Science for Transfer degree in Biology provides students with the foundational knowledge necessary to make a successful transition into a Baccalaureate Degree at any of the CSU campuses. The Associate Degree for Transfer (AA-T or AS-T) is a special degree offered at California Community Colleges. Students who earn an AA-T or AS-T degree are guaranteed admission to a campus within the California State University (CSU) system in a similar major, although not necessarily to a specific campus. Students who complete an AA-T or AS-T are given priority consideration when applying to a particular program that is similar to the student's community college major and will be given a special GPA advantage when applying to CSU impacted campuses or majors. Students who are planning to pursue an AA-T or AS-T are strongly advised to meet with a counselor for additional information about this transfer program. Visit <https://adegreewithaguarantee.com/> for more information about these degrees.

Requirements

Associate Degree for Transfer Graduation Requirements

Complete all of the following:

1. All Department Requirements listed below with a "C" or better or "P" in each course.
2. IGETC-CSU for STEM. The IGETC-CSU for STEM option permits students completing the AS-T in Biology to follow the IGETC-CSU (<https://catalog.sbccc.edu/transfer-curricula/#igetctext>) curriculum, but delay one Arts or Humanities course and one Social or Behavioral Science course until after transfer.
3. A total of 60 CSU transferable semester units.
4. Maintain a minimum cumulative CSU transferable GPA of 2.0.
5. A minimum of 12 units through SBCC.

Code	Title	Units
Department Requirements		
BIOL 101	Plant Biology	4
BIOL 102	Animal Biology	5
BIOL 103	Cell and Molecular Biology	5
CHEM 155	General Chemistry I	5
CHEM 156	General Chemistry II	5
MATH 150	Calculus with Analytic Geometry I	5
or MATH 130	Calculus for Biological Sciences, Social Sciences and Business I	
PHYS 105	General Physics	4

or PHYS 110	Introductory Physics	
PHYS 106	General Physics	4
or PHYS 111	Introductory Physics	
Total Units		37.00

Students are advised to meet with an academic counselor to discuss the best combination of courses to take for the AS-T and to meet the requirements of the transfer institution to which they are intending to transfer.

Learning Outcomes

1. Articulate the principles of evolutionary theory, the history of its development, and the role that evolution plays in the continuity and diversity of life.
2. Summarize and illustrate an understanding of the development of the organism, from fertilization to the adult form.
3. Explain and apply fundamental ecological principles, from populations to communities through ecosystems, and the geographical distribution of life on Earth.
4. Communicate the unifying principles governing the organization of organisms, from molecules to populations.
5. Compare and contrast organismal diversity and life histories, including nomenclature, taxonomy and systematics.
6. Characterize fundamental metabolic pathways, describe bioenergetics, and relate the interdependence of these pathways.
7. Demonstrate understanding of the structure and function of tissues, organs and organ systems, describing interrelationships and mechanisms of their integration to support the whole, functioning organism and the underlying causes of dysfunction.
8. Describe and connect the role of DNA in regulating cell activity to its importance as the basis of inheritance, evolution and biotechnology.
9. Demonstrate proficiency in the basic methods, instrumentation and quantitative analytical skills used to conduct biological research, including fundamental methods of microscopy, animal and plant dissection, and molecular and cellular biology.
10. Produce original research reports and review papers in a standard scientific format based on laboratory, field experiments and literature searches that include critical quantitative and qualitative evaluation of data to effectively communicate results, interpretations and concepts.

Recommended Sequence

Make an appointment with your SBCC academic counselor through Starfish to create a Student Education Plan that reflects a recommended course sequence for this program that is tailored to your individual needs.

How to schedule an Academic Counseling appointment (<https://www.sbccc.edu/counselingcenter/counselingappointments.php>).