BIOLOGY, ASSOCIATE IN SCIENCE FOR TRANSFER

The Associate in Science in Biology is intended to prepare students to transfer into the CSU system with the knowledge and experience to succeed in upper-division coursework in biology to pursue a baccalaureate degree in biology or related majors. The core curriculum of BIOL 21 and BIOL 22 provides students with a strong foundation in biology, and by focusing on key concepts and themes, aims to build a framework for organizing the vast range of topics included in this course of study. In addition, the program seeks to develop an awareness of the nature of scientific inquiry, to build connections between areas within biology and with related disciplines, and to strengthen students' academic and critical thinking skills. Lastly, recognizing that students will be making choices relating to future study and careers, the program aims to engage students in activities, discussions and experiences aimed at forming a concrete basis for these important decisions. Students must complete the Associate Degree for Transfer requirements to earn the AS-T degree.

Learning Outcomes

Upon successful completion of the program, students will be able to:

- Apply major biological concepts and principles when investigating life at all levels, from molecules to ecosystems.
- Learn independently and collaboratively within Biology and related disciplines.
- Employ tools and techniques commonly used in laboratory and field research.
- Apply the scientific method of inquiry to investigate and solve problems in Biology.

Associate in Science for Transfer Degree Major Requirements

Code	Title	Units
Required Core		
BIOL 21	Concepts in Biology I: Cells, Genetics and Organisms	5
BIOL 22	Concepts in Biology II: Diversity, Ecology, and Evolution	5
List A		**22**
CHEM 1A	General Chemistry I	
CHEM 1B	General Chemistry II	
MATH 18	Calculus and Analytic Geometry for Biology/Social Science/Bu	
or MATH 20A	Calculus with Analytic Geometry I	
Select one of the following sequences:		
PHYS 2A & PHYS 2B	General Physics I and General Physics II	
PHYS 3A & PHYS 3B	Science and Engineering Physics I and Science and Engineering Physics II	
List B [1]		**0-5**
ANAT 1	Human Anatomy with Cadaver Lab	
BIOL 25 & BIOL 26	Applied Microbiology Lecture and Applied Microbiology Laboratory	
CHEM 12A	Organic Chemistry I	
CHEM 12B	Organic Chemistry II	
GEOL 2 & GEOL 2L	Physical Geology and Physical Geology Laboratory	
MATH 13	Pre-Calculus	
MATH 16	Elementary Statistics	
MATH 20A	Calculus with Analytic Geometry I	
MATH 20B	Calculus with Analytic Geometry II	
PHSO 1 & PHSO 2	Human Physiology and Human Physiology Lab	
TOTAL MAJOR UNITS		**32-37**
Additional Requirements		**23-28**
Complete CSU General Education, IGETC, CSU GE for STEM, or IGETC for STEM pattern and electives, if needed, for a total of 60 transferable units.		
Total Units		**60**

[1] Recommended major preparation (Optional - not required for the degree but may be required by transfer institution)

Please refer to the graduation requirements section of the Catalog for information about degree and certificate requirements including Reading and Writing, Mathematics, Information Competency, and General Education requirements.

The model sequence of coursework below is one pathway for students to complete the program. The information below is not an official educational plan. An MPC Counselor can assist you with creating a personalized education plan based on your academic, career, and personal goals. Visit MPC's Counseling website for more information about Counseling and up-to-date program requirements.

Suggested 2-Year Course Sequence

Year 1		
Fall		**Units**
ENGL 1A or ENGL 1AE	College Composition or College Composition: Enhanced	3
MATH 18 or MATH 20A	Calculus and Analytic Geometry for Biology/Social Science/Bu or Calculus with Analytic Geometry I	4
CHEM 1A	General Chemistry I	5
IGETC Area 3B (US-1 Course Recommended)		3
	Units	**15**
Spring		
ENGL 2	Argumentative Writing and Critical Thinking	3
CHEM 1B	General Chemistry II	5
Electives (BIOL 10 or MATH 20B Recommended)		4
IGETC Area 4 (US-2 & 3 Course Recommended)		3
	Units	**15**
Year 2		
Fall		
SPCH 1 or SPCH 2	Public Speaking (CSU Requirement) or Small Group Communication	3
BIOL 22	Concepts in Biology II: Diversity, Ecology, and Evolution	5

PHYS 2A or PHYS 3A	General Physics I or Science and Engineering Physics I	4
IGETC Area 3A		3
	Units	**15**
Spring		
BIOL 21	Concepts in Biology I: Cells, Genetics and Organisms	5
PHYS 2B or PHYS 3B	General Physics II or Science and Engineering Physics II	4
IGETC Area 4		3
IGETC Area 6 (UC Requirement) or Electives (CSU/UC Transferable)		3
	Units	**15**
	Total Units	**60**

MPC transfer programs are designed to enable students to complete lower-division requirements in preparation for transfer to a baccalaureate-granting institution.

The Student Transfer Achievement Reform Act (Senate Bill 1440, codified in California Education Code sections 66746-66749) guarantees admission to California State University (CSU) system for any community college student who earns an Associate Degree for Transfer (ADT), although not to a particular campus or major. Upon transferring to a CSU campus that accepts the Associate in Arts for Transfer (AA-T) or Associate in Science for Transfer (AS-T), students will be required to complete no more than 60 upper-division units to earn a bachelor's degree in a same or similar major (unless designated as a "high-unit" major).

The following Associate Degree for Transfer requirements must be completed to earn the AA-T or AS-T degree:

a. Minimum of 60 CSU-transferable semester units;
b. Minimum grade point average (GPA) of 2.0 in all CSU-transferable coursework (while a minimum of 2.0 is required for admission, some majors may require a higher GPA);
c. Completion of a minimum of 18 semester units as detailed in the Major Requirements;
d. Completion of all courses in the major with a grade of C or better (or a "P" if the course is taken on a "Pass/No Pass" basis);
e. Certified completion of the California State University General Education-Breadth pattern (CSU GE-Breadth) pattern; OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.

All students should consult with a Counselor to discuss transfer pathways and specific university admission requirements. Visit MPC's Counseling website for more information about Counseling services provided by MPC and to connect with a Counselor.