

ADT IN BIOLOGY

Biology is a natural science that focuses on living organisms, including their structure, function, growth and development, and evolution and adaptation to the environment. The Associate in Science in Biology for Transfer Degree (AS-T) can be a stand-alone degree or serve as preparation for a curriculum in a four-year institution, leading to a baccalaureate degree in areas such as microbiology, organismal biology, cell and molecular biology.

Students who complete this degree will be guaranteed admission with junior status to the California State University system, and will be given priority admission to our local CSU campus.

Learning Outcomes

A.S.-Transfer Degree Level Student Learning Outcomes

Students completing the Biology A.S.-Transfer Degree will:

1. Demonstrate an understanding of biological concepts.
2. Acquire scientific information from multiple sources including textbooks, the Internet, personal communication with professionals in the field, and educational computer software.
3. Estimate and/or calculate the characteristics of biological systems and demonstrate an understanding of these calculations in order to better understand the natural processes that produce these characteristics.
4. Formulate scientific hypotheses in order to distinguish between scientific and non-scientific questions and methods.
5. Develop an understanding of relevant biological processes as well as processes from related sciences (e.g. physics, geology, chemistry) and apply these processes to predict the properties of biological systems.
6. Examine how human activity has contributed to positive and negative changes in the environment to better understand and discuss past, current, and future environmental issues.

Requirements

Students receiving this transfer degree must meet the following requirements:

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) (<http://catalog.citruscollege.edu/programs-study/graduation-requirements-associate-degree/general-education-requirements-transfer-csu-uc-iget-option-iii/>) or the California State University General Education - Breadth Requirements (<http://catalog.citruscollege.edu/programs-study/graduation-requirements-associate-degree/general-education-requirements-transfer-csu-csuge-option-ii/>).
 - b. A minimum of 18 semester units or 27 quarter units in a major or area of emphasis, as determined by the community college district.
2. Obtainment of a minimum grade point average of 2.0.
3. Meet the 12-unit residency requirement.

ADTs also require that students must earn a "C" (or "P") or better in all courses required for the major or area of emphasis.

Code	Title	Units
Required courses:		
BIOL 124	Molecular and Cellular Biology	5
BIOL 125	Evolution, Ecology & Biodiversity	5
CHEM 111	General Chemistry I	5
CHEM 112	General Chemistry II	5
PHYS 201 or PHYS 111	Physics A: Mechanics College Physics A	4-5
PHYS 202 or PHYS 112	Physics B: Thermodynamics and Electromagnetism College Physics B	4-5
MATH 190	Calculus with Analytic Geometry I ¹	5
Total Units		33-35

¹ MATH 190 is degree applicable with or without MATH 090. If taken with MATH 090, only the units for MATH 190 will be counted towards the degree.

Curriculum Map

2-3-Year Curriculum Map Examples

These maps represent two possible pathways through the program and are only for reference.

*It is highly recommended that you make an appointment (<https://www.citruscollege.edu/stdntsrvcounsel/Pages/ApptSchedule.aspx>) to create a customized education plan that fits your needs.

Note: Co-requisite MATH course (2 units) and/or substitute ENGL 101E (5 units) may be needed based on placement.

2-Year Map:

Course	Title	Units
Fall Term 1		
CHEM 111	General Chemistry I	5
MATH 190	Calculus with Analytic Geometry I	5
ENGL 101 or ENGL 101H	Reading and Composition or Reading and Composition - Honors	4
COUN 160 or COUN 206	Strategies for College Success or Pathways to Careers in STEM	3
Units		17
Winter Term 1		
ARCH 250 or ARCH 251 or ART 100 or ART 105 or ART 108 or ART 110 or ART 199 or ART 199H or DANC 102 or MUSE 113 or THEA 101 or THEA 101H	History of Architecture: Prehistory to Mannerism or History of Architecture: Baroque to the Present Day or Art History - Fundamentals of Global Art History or Art History - Topics in Contemporary Art or History of Photography or Introduction to the Visual Arts or Motion Picture Appreciation or Motion Picture Appreciation - Honors or History of Dance or History of Rock and Roll or Introduction to Theatre Arts or Introduction to Theatre Arts - Honors	3

Course	Title	Units
ENGL 104 or ENGL 104H	Argumentative Writing and Critical Thinking or Argumentative Writing and Critical Thinking - Honors	3
Units		6
Spring Term 1		
BIOL 125	Evolution, Ecology & Biodiversity	5
MATH 191	Calculus with Analytic Geometry II	5
CHEM 112	General Chemistry II	5
Units		15
Summer Term 1		
HIST 107 or HIST 107H or HIST 108 or HIST 108H or HIST 160	History of the United States before 1877 or History of the United States before 1877 - Honors or History of the United States since 1877 or History of the United States since 1877 - Honors or History of Women in the United States	3
SPCH 100 or SPCH 100H or SPCH 101 or SPCH 101H or SPCH 106	Interpersonal Communication or Interpersonal Communication - Honors or Public Address or Public Address - Honors or Small Group Communication	3
Units		6
Fall Term 2		
CHEM 211L	Organic Chemistry A Laboratory	1
CHEM 210	Organic Chemistry A	3
BIOL 124	Molecular and Cellular Biology	5
PHYS 111 or PHYS 111H or PHYS 201 or PHYS 201H	College Physics A or College Physics A - Honors or Physics A: Mechanics or Physics A: Mechanics - Honors	4
Units		13
Winter Term 2		
ETHN 101 or ETHN 116	Introduction to Ethnic Studies or Introduction to Chicano/Latino Studies	3
POLI 103 or POLI 103H	American Government and Politics or American Government and Politics - Honors	3
Units		6
Spring Term 2		
CHEM 220	Organic Chemistry B	3
CHEM 221L	Organic Chemistry B Laboratory	1
ARCH 250 or ARCH 251 or ART 100 or ART 105 or ART 108 or ART 110 or ART 199 or ART 199H or DANC 102 or ENGL 290 or ENGL 293 or ENGL 293H or ENGL 298 or KIN 166 or MUSE 113 or PHIL 101 or SOC 130 or THEA 101 or THEA 101H	History of Architecture: Prehistory to Mannerism or History of Architecture: Baroque to the Present Day or Art History - Fundamentals of Global Art History or Art History - Topics in Contemporary Art or History of Photography or Introduction to the Visual Arts or Motion Picture Appreciation or Motion Picture Appreciation - Honors or History of Dance or Ethnic Voices in Film or Children's Literature or Children's Literature - Honors or Literature of the Bible or American Food And Culture: Global Origins, History, and Current Impacts or History of Rock and Roll or Great Religions of the World or Introduction to LGBTQ Studies or Introduction to Theatre Arts or Introduction to Theatre Arts - Honors	3
ANTH 210 or ANTH 210H or PSY 101 or PSY 101H or SOC 201 or SOC 201H	Introduction to Cultural Anthropology or Introduction to Cultural Anthropology - Honors or Introduction to Psychology or Introduction to Psychology - Honors or Introduction to Sociology or Introduction to Sociology - Honors	3

Course	Title	Units
PHYS 112 or PHYS 202	College Physics B or Physics B: Thermodynamics and Electromagnetism	4
Units		14
Total Units		77

Note: Course selections may affect total unit value.

3-Year Map:

Course	Title	Units
Fall Term 1		
MATH 175	Pre-Calculus	6
ENGL 101 or ENGL 101H	Reading and Composition or Reading and Composition - Honors	4
COUN 160 or COUN 206	Strategies for College Success or Pathways to Careers in STEM	3
Units		13
Winter Term 1		
MATH 190	Calculus with Analytic Geometry I	5
Units		5
Spring Term 1		
CHEM 110	Beginning General Chemistry	5
MATH 191	Calculus with Analytic Geometry II	5
ENGL 104 or ENGL 104H	Argumentative Writing and Critical Thinking or Argumentative Writing and Critical Thinking - Honors	3
Units		13
Summer Term 1		
ANTH 210 or ANTH 210H or PSY 101 or PSY 101H or SOC 201 or SOC 201H	Introduction to Cultural Anthropology or Introduction to Cultural Anthropology - Honors or Introduction to Psychology or Introduction to Psychology - Honors or Introduction to Sociology or Introduction to Sociology - Honors	3
Units		3
Fall Term 2		
CHEM 111	General Chemistry I	5
BIOL 124	Molecular and Cellular Biology	5
ARCH 250 or ARCH 251 or ART 100 or ART 105 or ART 108 or ART 110 or ART 199 or ART 199H or DANC 102 or MUSE 113 or THEA 101 or THEA 101H	History of Architecture: Prehistory to Mannerism or History of Architecture: Baroque to the Present Day or Art History - Fundamentals of Global Art History or Art History - Topics in Contemporary Art or History of Photography or Introduction to the Visual Arts or Motion Picture Appreciation or Motion Picture Appreciation - Honors or History of Dance or History of Rock and Roll or Introduction to Theatre Arts or Introduction to Theatre Arts - Honors	3
Units		13
Winter Term 2		
SPCH 100 or SPCH 100H or SPCH 101 or SPCH 101H or SPCH 106	Interpersonal Communication or Interpersonal Communication - Honors or Public Address or Public Address - Honors or Small Group Communication	3
Units		3
Spring Term 2		
BIOL 125	Evolution, Ecology & Biodiversity	5
CHEM 112	General Chemistry II	5
PHYS 111 or PHYS 111H or PHYS 201 or PHYS 201H	College Physics A or College Physics A - Honors or Physics A: Mechanics or Physics A: Mechanics - Honors	4
Units		14

Course	Title	Units
Summer Term 2		
ARCH 250	History of Architecture: Prehistory to Mannerism	3
or ARCH 251	or History of Architecture: Baroque to the Present Day	
or ART 100	or Art History - Fundamentals of Global Art History	
or ART 105	or Art History - Topics in Contemporary Art	
or ART 108	or History of Photography	
or ART 110	or Introduction to the Visual Arts	
or ART 199	or Motion Picture Appreciation	
or ART 199H	or Motion Picture Appreciation - Honors	
or DANC 102	or History of Dance	
or ENGL 290	or Ethnic Voices in Film	
or ENGL 293	or Children's Literature	
or ENGL 293H	or Children's Literature - Honors	
or ENGL 298	or Literature of the Bible	
or KIN 166	or American Food And Culture: Global Origins, History, and Current Impacts	
or MUSE 113	or History of Rock and Roll	
or PHIL 101	or Great Religions of the World	
or SOC 130	or Introduction to LGBTQ Studies	
or THEA 101	or Introduction to Theatre Arts	
or THEA 101H	or Introduction to Theatre Arts - Honors	
Units		3
Fall Term 3		
CHEM 210	Organic Chemistry A	3
CHEM 211L	Organic Chemistry A Laboratory	1
PHYS 112	College Physics B	4
or PHYS 202	or Physics B: Thermodynamics and Electromagnetism	
ETHN 101	Introduction to Ethnic Studies	3
or ETHN 116	or Introduction to Chicano/Latino Studies	
Units		11
Winter Term 3		
POLI 103	American Government and Politics	3
or POLI 103H	or American Government and Politics - Honors	
Units		3
Spring Term 3		
CHEM 220	Organic Chemistry B	3
CHEM 221L	Organic Chemistry B Laboratory	1
PHYS 203	Physics C: Waves, Optics & Modern Physics	5
HIST 107	History of the United States before 1877	3
or HIST 107H	or History of the United States before 1877 - Honors	
or HIST 108	or History of the United States since 1877	
or HIST 108H	or History of the United States since 1877 - Honors	
or HIST 111	or African-American History to 1876	
or HIST 112	or African-American History since 1876	
or HIST 160	or History of Women in the United States	
ENGL 290	Ethnic Voices in Film	3
or ENGL 293	or Children's Literature	
or ENGL 293H	or Children's Literature - Honors	
or ENGL 298	or Literature of the Bible	
or KIN 166	or American Food And Culture: Global Origins, History, and Current Impacts	
or PHIL 101	or Great Religions of the World	
or SOC 130	or Introduction to LGBTQ Studies	
Units		15
Total Units		96

Note: Course selections may affect total unit value.

Career Information

Career Opportunities

There are a variety of careers you can do with this major.

To explore more about this major, schedule an appointment (<https://www.citruscollege.edu/stdntsrvtcenter/Pages/ApptSchedule.aspx>) with a career counselor.