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

Banner Code: 1_AST_BIOL
Control Number: 35918
Financial Aid Eligible

Students graduating with an Associate in Science in Biology for Transfer Degree are well positioned to complete a Bachelor's Degree in a similar major within the California State University system with 60 units of upper-division coursework. Students who complete the Biology AS-T degree are guaranteed admission to the CSU system, but not to a particular campus or major. Students must maintain a minimum grade point average (GPA) of at least 2.0 in all CSU-transferable coursework. While a minimum 2.0 is required for CSU admission, some majors may require a higher GPA. Please consult a counselor for more information.

This curriculum is designed to allow students to study a range of biological topics in cell and molecular biology, survey the diversity of organisms on our planet, and receive additional STEM preparation. The coursework prepares students to employ the scientific method, think critically and apply reasoning skills to analyze real world situations. All students receiving the AS-T degree in Biology should be fully prepared for transfer to a California State University and have the foundation needed to pursue a baccalaureate degree to prepare for careers as biologists in fields such as research, industry and education. The requirements for the degree include two semesters of biology courses, two semesters of chemistry, two semesters physics and one semester of mathematics. It is strongly recommended that biology majors take an additional mathematics class and two semesters of organic chemistry in addition to the degree requirements, however this cannot be included as a requirement due to unit limitations.

Program Outcomes

1. Use the scientific method to design, carry out, summarize, and evaluate tests of biological hypotheses using modern laboratory equipment.
2. Describe the biological processes that occur within or among organisms (e.g., protein synthesis, cell-to-cell communication, genetic transmission, digestion, reproduction, nutrient flow through an ecosystem).
3. Describe the variations observed in organisms and explain how populations have evolved through time.
4. Students will be eligible and prepared for admission (SB 1440 and Education Code 66746) to California State University system schools.

Associate Degree for Transfer Requirements

The following is required for all AA-T or AS-T degrees:

1. Minimum of 60 CSU-transferable semester units.
2. Minimum GPA of at least 2.0 in all CSU transferable coursework. While a minimum of 2.0 is required for admission, some majors require a higher GPA. Consult with a counselor for more information.
3. Completion of a minimum of 18-semester units in the major as detailed in the Degree and Certificate section of this catalog. All courses in the major must be completed with a grade of C (or "P") or better.
4. Certified completion of the California State University General Education-Breadth pattern (CSU General Education Breadth — Option 2 (https://catalog.cccd.edu/orange-coast/general-education-patterns/associate-degree-general-education-option-2/)) OR the Intersegmental General Education Transfer Curriculum (IGETC — Option 3 (https://catalog.cccd.edu/orange-coast/general-education-patterns/associate-degree-general-education-option-3/)).
5. A minimum of 12 units in residence at OCC.

Course	Title	Units
Required Courses		
Core Courses		
BIOL A180	Introduction to Biology for Majors 1: Cell and Molecular Biology	4
BIOL A185	Introduction to Biology for Majors 2: Ecology, Evolution, Diversity, and Physiology	5
List A		
CHEM A180	General Chemistry A	5
CHEM A185	General Chemistry B	5
MATH A180/A180H	Calculus 1	4
Select one of the following:		8
PHYS A120 & PHYS A125	Algebra Based Physics: Mechanics and Algebra Based Physics:Electricity/ Magnetism	
Or		
PHYS A185 & PHYS A280	Calculus Based Physics: Mechanics and Calculus Based Physics: Electricity/ Magnetism	
Program Major Units		*31*
CSU General Education Breadth or IGETC for STEM		*31-33*
Transferable electives as needed to satisfy unit requirement		*Varies*
Total Minimum Degree Units		**60**

1. * This TMC presumes completion of IGETC or CSU-GE Breadth for STEM, allowing for completion of 6 units of non-STEM GE work after transfer.
2. Required Core Options 1 and 2 represent Options 1-4 on the TMC.
3. List B – Additional Major Preparation if possible based on unit limitation and required articulation exists (0-4 units).
Select one (1) additional course that is articulated as a major preparation at a CSU.

Program Sequence - CSU

These sequences at Orange Coast College are general course curriculum maps for students to finish all major and general education requirements for two-year completion of degrees, and/or fulfillment of transfer requirements. The course sequence may include course prerequisites and other placement requirements. **Students are advised to meet with an Orange Coast College Counselor to review course selections and sequences to ensure that completion of this program will meet a student's transfer and career goals.**

Course	Title	Units
Year 1		
Semester 1		
MATH A180	Calculus 1	4
CHEM A180	General Chemistry A	5
CSU GE AREA A1 - CHOOSE ONE		3
CSU GE AREA A2 - CHOOSE ONE		3
	Units	**15**
Semester 2		
BIOL A180	Introduction to Biology for Majors 1: Cell and Molecular Biology	4
CHEM A185	General Chemistry B	5
HIST A170 or HIST A170H or HIST A175 or HIST A175H	History of the United States to 1876 [1] or History of the United States to 1876 Honors or History of the United States Since 1876 or History of the United States Since 1876 Honors	3
CSU GE AREA A3 - CHOOSE ONE		3-4
	Units	**15-16**
Year 2		
Semester 1		
BIOL A185	Introduction to Biology for Majors 2: Ecology, Evolution, Diversity, and Physiology [2]	5
PHYS A120 or PHYS A185	Algebra Based Physics: Mechanics or Calculus Based Physics: Mechanics	4
MATH A185	Calculus 2 [3]	
CSU GE AREA C1 - CHOOSE ONE		3
ELECTIVE (DEGREE APPLICABLE)		2-3
	Units	**14-15**
Semester 2		
PHYS A125 or PHYS A280	Algebra Based Physics:Electricity/Magnetism or Calculus Based Physics: Electricity/Magnetism	4
PSCI A180 or PSCI A180H	American Government [1] or American Government Honors	3
CSU GE AREA D - CHOOSE ONE		3
CSU GE AREA E - CHOOSE ONE		3
CSU GE AREA F - CHOOSE ONE		3
	Units	**16**
	Total Units	**60-62**

1

American Ideals Requirement – CSU graduation requirement

2

Student can take BIOL A182/182L and BIOL A183/183L as an alternative to BIOL A185

3

MATH A185 - take only if student decides to take PHYS A185-PHYS A280 sequence

NOTES

1. This TMC presumes completion of IGETC or CSU-GE Breadth for STEM, allowing for completion of 6 units of non-STEM GE work after transfer.
2. Required Core Options 1 and 2 represent Options 1-4 on the TMC.
3. List B – Additional Major Preparation if possible based on unit limitation and required articulation exists (0-4 units).
Select one (1) additional course that is articulated as a major preparation at a CSU.

Program Sequence - IGETC

These sequences at Orange Coast College are general course curriculum maps for students to finish all major and general education requirements for two-year completion of degrees, and/or fulfillment of transfer requirements. The course sequence may include course prerequisites and other placement requirements. **Students are advised to meet with an Orange Coast College Counselor to review course selections and sequences to ensure that completion of this program will meet a student's transfer and career goals.**

Course	Title	Units
Year 1		
Semester 1		
MATH A180	Calculus 1	4
CHEM A180	General Chemistry A	5
IGETC GE AREA 1A - CHOOSE ONE		3
IGETC GE AREA 3A - CHOOSE ONE		3
	Units	**15**
Semester 2		
BIOL A180	Introduction to Biology for Majors 1: Cell and Molecular Biology	4
CHEM A185	General Chemistry B	5
HIST A170 or HIST A170H or HIST A175 or HIST A175H	History of the United States to 1876 [1] or History of the United States to 1876 Honors or History of the United States Since 1876 or History of the United States Since 1876 Honors	3
IGETC GE AREA 1B -CHOOSE ONE		3-4
	Units	**15-16**
Year 2		
Semester 1		
BIOL A185	Introduction to Biology for Majors 2: Ecology, Evolution, Diversity, and Physiology [2]	5
MATH A185	Calculus 2 [3]	4
PHYS A120 or PHYS A185	Algebra Based Physics: Mechanics or Calculus Based Physics: Mechanics	4
IGETC GE AREA 4 - CHOOSE ONE		3
	Units	**16**
Semester 2		
PHYS A125 or PHYS A280	Algebra Based Physics:Electricity/Magnetism or Calculus Based Physics: Electricity/Magnetism	4
PSCI A180 or PSCI A180H	American Government [4] or American Government Honors	3
IGETC GE AREA 4 - CHOOSE ONE		3

Course	Title	Units
IGETC GE AREA 1C - CHOOSE ONE or LOTE: Foreign Language [5,6]		3-5
ELECTIVE (UC TRANSFERABLE)		1-3
	Units	**14-18**
	Total Units	**60-65**

1

American Ideals Requirement - IGETC GE AREA 3B and CSU Graduation Requirement OR take another course from IGETC GE AREA 3B

2

Students can take BIOL A182/182L and BIOL A183/183L as an alternative to BIOL A185

3

MATH A185 - Only if student decides to take PHYS A185-PHYS A280 sequence

4

American Ideals Requirement - IGETC GE AREA 4 and CSU Graduation Requirement OR take another course from IGETC GE AREA 4

5

IGETC GE Area 1C- CSU Requirement

6

LOTE Requirement for UC only. If met LOTE through HS then do not need to take additional electives.

NOTES

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Select one (1) additional course that is articulated as a major preparation at a CSU.