BIOLOGICAL SCIENCES, ASSOCIATE OF ARTS (AA)

Overview

To be a biologist in the 21st Century will be an exciting and meaningful profession. Advances in biological knowledge are providing solutions to the most challenging problems in medicine, environmental resources, agriculture and human ecology. The Biological Sciences Department offers courses in biology, botany, anatomy, physiology, microbiology, natural history, marine biology, physical anthropology and courses for pre-professional areas such as medicine, physical therapy, dentistry, chiropractic and veterinary science.

Requirements

Associate Degree Graduation Requirements

Complete all of the following:

1. All Department Requirements listed below with a "C" or better or "P" in each course (at least 20% of the department requirements must be completed through SBCC).
2. One of the following three General Education options:
    a. OPTION 1: A minimum of 18 units of SBCC General Education Requirements (https://catalog.sbcc.edu/degrees-certificates-awards/#associatedegreestext) (Areas A-D) and Institutional Requirements (Area E) and Information Competency Requirement (Area F) OR
    b. OPTION 2: IGETC (https://catalog.sbcc.edu/transfer-curricula/#igetctext) Pattern OR
    c. OPTION 3: CSU GE Breadth (https://catalog.sbcc.edu/transfer-curricula/#csugebtext) Pattern
3. A total of 60 degree-applicable units (SBCC courses numbered 100 and higher).
4. Maintain a cumulative GPA of 2.0 or better in all units attempted at SBCC.
5. Maintain a cumulative GPA of 2.0 or better in all college units attempted.
6. 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
Total Units		**24.00**

Recommended for Transfer

These additional courses should be considered when planning a program of study for transfer as a biology major.

Code	Title	Units
CHEM 211 & CHEM 221	Organic Chemistry I and Organic Chemistry Laboratory I	5.3
CHEM 212 & CHEM 222	Organic Chemistry II and Organic Chemistry Laboratory II	5.5
MATH 117		4
Complete one sequence from the following:		
MATH 130 & MATH 131	Calculus for Biological Sciences, Social Sciences and Business I and Calculus For Biological Sciences, Social Sciences And Business II	
MATH 150 & MATH 160	Calculus with Analytic Geometry I and Calculus with Analytic Geometry II	
Complete one sequence from the following:		
PHYS 105 & PHYS 106	General Physics and General Physics	
PHYS 110 & PHYS 111	Introductory Physics and Introductory Physics	
PHYS 121 & PHYS 122 & PHYS 123	Mechanics Of Solids And Fluids and Electricity and Magnetism and Heat, Light and Modern Physics	

Learning Outcomes

1. Articulate the principles of evolutionary theory, the history of the development of the theory and the role that evolution plays in the continuity and diversity of life.
2. Communicate the unifying principles governing the organization of organisms from molecules to populations.
3. Explain and apply fundamental ecological principles from populations and communities through ecosystems and the geographical distribution of life on Earth.
4. Summarize and illustrate an understanding of the development of the organism from fertilization to the adult form.
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 the mechanisms of integration of the subunits 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, molecular and cellular biology.
10. 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, molecular and cellular biology.

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.sbcc.edu/counselingcenter/counselingappointments.php).