

# BIOLOGY (BIOL)

## Credit Courses

### BIOL 100 Concepts Of Biology (4 Units)

Hours: 108 (54 lecture, 54 lab)

Basic concepts of biology. Designed for non-biological sciences majors with no prior general biology course. Satisfies SBCC General Education requirement in Natural Sciences.

SBCC General Education: SBCCGE Area A

Transfer Information: CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, CSU Transferable, UC Transferable

UC Transfer Limit: No credit for BIOL 100 if taken after BIOL 101, 102 or 103.

### BIOL 101 Plant Biology (4 Units)

Prerequisites: MATH 107 or MATH 110C or MATH 137C or SS 110C or equivalent based on SBCC's Assessment Center placement via multiple measures.

Course Advisories: Eligibility for ENG 110 or 110H.

Hours: 108 (54 lecture, 54 lab)

Principles of biology, with emphasis on major plant groups. Anatomy, physiology, evolution, and diversity of the archaea, bacteria, algae, fungi and plantae. Required for the Biological Sciences major. Satisfies SBCC General Education requirement in Natural Sciences.

SBCC General Education: SBCCGE Area A

Transfer Information: CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, CSU Transferable, UC Transferable

C-ID: BIOL 135S, BIOL 140, BIOL 155.

### BIOL 102 Animal Biology (5 Units)

Prerequisites: MATH 110C or MATH 137C or MATH 107 or SS 110C or equivalent based on SBCC's Assessment Center placement via multiple measures.

Course Advisories: BIOL 101, ENG 110 or ENG 110H.

Hours: 162 (54 lecture, 108 lab)

Principles of animal taxonomy, evolution, population and community ecology; protist and animal diversity and adaptations; emphasis on vertebrate anatomy and physiology. Required for the Biological Sciences major.

SBCC General Education: SBCCGE Area A

Transfer Information: CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, CSU Transferable, UC Transferable

C-ID: BIOL 135S, BIOL 140, BIOL 150.

### BIOL 103 Cell and Molecular Biology (5 Units)

Prerequisites: CHEM 155 or CHEM 104, MATH 107 or MATH 110C or MATH 137C or SS 110C or equivalent based on SBCC's Assessment Center placement via multiple measures.

Course Advisories: ENG 110 or ENG 110H.

Hours: 162 (54 lecture, 108 lab)

Cell structure and function: molecular architecture, reproduction and growth; mechanisms of genetics; intercellular communication; cell and organ system physiology; life's origin. Study scientific literature with instruction in critical thinking, composition and logical analyses of ideas and experiments. Required for Biological Sciences majors. Satisfies SBCC General Education requirement in Communication and Analytical Thinking.

SBCC General Education: SBCCGE Area A, SBCCGE Area D2

Transfer Information: CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 103 maximum credit, 5 units.

C-ID: BIOL 135S, BIOL 190.

### BIOL 103A Cell and Molecular Biology (3.5 Units)

Prerequisites: CHEM 155 or CHEM 104 MATH 107 or MATH 110C or MATH 137 or MATH 149 or SS 110C or equivalent based on SBCC's Assessment Center placement via multiple measure.

Hours: 63 (63 lecture)

Cell structure, function and molecular mechanisms of: metabolism, molecular transport, gene expression, mutations and repair, cell signaling, and cell division and death. Introduction to standard and novel laboratory techniques, and critical analysis of scientific literature and data. Required for Biological Sciences majors.

Transfer Information: CSUGE Area B2, IGETC Area 5B, CSU Transferable

### BIOL 103L Cell and Molecular Biology Laboratory (1.5 Unit)

Corequisites: BIOL 103A.

Hours: 81 (81 lab)

Prerequisite or Investigations of molecular properties, gene regulation and genetic mutations using molecular biological and biochemical approaches. Use of traditional and modern laboratory techniques including, but not limited to DNA and protein extraction, Western blot, Molecular Cloning, Genome editing and PCR. Development and testing of hypotheses, critical analysis and interpretation of data, and composition of formal lab reports in independent and collaborative settings. Required for Biological Sciences majors.

Transfer Information: CSUGE Area B3, IGETC Area 5C, CSU Transferable

### BIOL 110 Natural Science (3 Units)

Hours: 54 (54 lecture)

Physical and chemical principles underlying biological architecture and function. In combination with BIOL 141, BIOL 110 satisfies General Education requirement in Natural Sciences.

SBCC General Education: SBCCGE Area A, SBCCGE Area A Lecture

Transfer Information: CSUGE Area B1, CSUGE Area B2, IGETC Area 5A, IGETC Area 5B, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 110 and 110H combined: maximum credit, one course.

### BIOL 112 Evolution and Adaptation (3 Units)

Hours: 54 (54 lecture)

Principles of biological evolution, diversity of life on earth, and a survey of living and extinct organisms. Investigates theories of life's origin, modes of speciation and adaptations of dominant life forms through the ages.

SBCC General Education: SBCCGE Area A Lecture

Transfer Information: CSUGE Area B2, IGETC Area 5B, CSU Transferable, UC Transferable

### BIOL 116 Biological Illustration (4 Units)

Course Advisories: ART 120.

Hours: 108 (54 lecture, 54 lab)

Traditional and contemporary techniques of scientific illustration of biological subjects for technical and medical print and electronic publications.

Transfer Information: CSU Transferable

### BIOL 118 Nature Photography (3 Units)

Hours: 54 (54 lecture)

Photography of biological subjects. Camera, light and the special methods of field and wildlife photography.

Transfer Information: CSU Transferable

**BIOL 120 Natural History (4 Units)**

Hours: 108 (54 lecture, 54 lab)

Survey of the natural environment through studies of Earth's ecosystems, with emphasis on the plant and animal inhabitants and the influences of cosmic, geological and meteorological phenomena. Weekly field trips.

SBCC General Education: SBCCGE Area A

Transfer Information: CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, CSU Transferable, UC Transferable

**BIOL 122 Ecology (3 Units)**

Hours: 54 (54 lecture)

Organisms and populations as integrated elements of communities and ecosystems. Covers population structure; growth and evolution; relationships between species including competition, predation and coevolution; community structure and development; biodiversity; and biogeography.

SBCC General Education: SBCCGE Area A Lecture

Transfer Information: CSUGE Area B2, IGETC Area 5B, CSU Transferable, UC Transferable

**BIOL 123 Ecology Laboratory (1 Unit)**

Corequisites: BIOL 122.

Hours: 54 (54 lab)

Laboratory and field investigations of ecological principles.

SBCC General Education: SBCCGE Area A Lab

Transfer Information: CSUGE Area B3, IGETC Area 5C, CSU Transferable, UC Transferable

**BIOL 124 Biological Oceanography (4 Units)**

Hours: 108 (54 lecture, 54 lab)

Relationships between marine plants and animals and physical characteristics of Earth's oceans. Emphasis on marine organisms found in the open sea, their characteristics and ecological relationships. Biological sampling techniques and physical measurements studied in laboratory and at sea.

SBCC General Education: SBCCGE Area A

Transfer Information: CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 124 combined with EARTH 151: maximum credit, one course.

**BIOL 125 Marine Biology (4 Units)**

Hours: 108 (54 lecture, 54 lab)

Study of marine plants and animals, with emphasis on local organisms and their ecological adaptations. Laboratory includes visits to local coastal and marine ecosystems.

SBCC General Education: SBCCGE Area A

Transfer Information: CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 125 and 126 combined: maximum credit, one course.

**BIOL 126 Aquatic Ecosystems (3 Units)**

Hours: 54 (54 lecture)

Diversity of life associated with marine and freshwater aquatic ecosystems; ecological relationships and adaptations to life in water.

Transfer Information: CSUGE Area B2, IGETC Area 5B, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 125 and 126 combined: maximum credit, one course.

**BIOL 130 Methods in Field Biology (3 Units)**

Hours: 90 (36 lecture, 54 lab)

Through weekly field trips and 2-3 weekend field experiences, students study flora and fauna of California using current biological and ecological field research methods, collect and analyze data, demonstrate leadership and group work skills, and write and present a research proposal.

Students must be able to hike in rough terrain and carry bulky equipment.

Transfer Information: CSU Transferable

**BIOL 133 Ecology of Morro Bay Area (1 Unit)**

Hours: 36 (9 lecture, 27 lab)

Field course focusing on organisms and ecology of California coastal ecosystems (e.g., mudflats, salt marsh, rocky outer coast). Weekend, overnight field trip required.

Transfer Information: CSU Transferable

**BIOL 140 Principles of Biology (3 Units)**

Hours: 54 (54 lecture)

Basic principles of cells, genetics, evolution, biodiversity and ecology.

Designed for Natural History majors. Satisfies Natural Science General Education requirement when combined with Bio 141.

SBCC General Education: SBCCGE Area A Lecture

Transfer Information: CSUGE Area B2, IGETC Area 5B, CSU Transferable, UC Transferable

UC Transfer Limit: No credit for BIOL 140 if taken after BIOL 100, 101, 102 or 103.

**BIOL 141 Biology Laboratory (2 Units)**

Corequisites: BIOL 110 or BIOL 112 or BIOL 140.

Hours: 72 (18 lecture, 54 lab)

Prerequisite or Laboratory investigation of biological principles and techniques of investigation.

SBCC General Education: SBCCGE Area A, SBCCGE Area A Lab

Transfer Information: CSUGE Area B3, IGETC Area 5C, CSU Transferable, UC Transferable

UC Transfer Limit: No credit for BIOL 141 unless taken after or concurrently with BIOL 112 or 140.

**BIOL 142 Marine Science (3 Units)**

Hours: 54 (54 lecture)

Introduction to physical oceanography and marine biology. Exploration of ocean ecosystems and organisms including tropics, poles, temperate and deep-sea regions. Marine environmental issues and solutions.

Transfer Information: CSUGE Area B1, CSUGE Area B2, IGETC Area 5A, CSU Transferable, UC Transferable

**BIOL 144 Biogeography (3 Units)**

Hours: 54 (54 lecture)

Survey of the history, distribution and diversity of life and the methods by which biodiversity is defined and measured.

Transfer Information: CSUGE Area B2, IGETC Area 5B, CSU Transferable, UC Transferable

**BIOL 150 Biodiversity (3 Units)**

Hours: 54 (54 lecture)

Broad introduction to life on Earth including diversity, adaptations and evolutionary history; principles of ecology and evolution; and examination of how life evolved and the tree of life is constructed using fossil evidence, comparative morphology and genomics.

Transfer Information: CSUGE Area B2, IGETC Area 5B, CSU Transferable, UC Transferable

**BIOL 161 DNA and Society (3 Units)**

Hours: 54 (54 lecture)

Introduction to DNA structures and functions, heredity, genetics, biotechnology, cloning, genetically modified organisms, and stem cells from a biological perspective; relevant ethical issues and implications for society and the individual will be explored. Satisfies SBCC General Education requirement in Natural Sciences.

Transfer Information: CSUGE Area B2, IGETC Area 5B, CSU Transferable, UC Transferable

**BIOL 171 Human Evolution (3 Units)**

Hours: 54 (54 lecture)

Evolution of Humans from early primate ancestors to modern humans including cultural, genetic and anatomical changes.

Transfer Information: CSUGE Area B2, IGETC Area 5B, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 171, ANTH 101, 101H combined: maximum credit, one course.

**BIOL 172 Symbiosis (3 Units)**

Hours: 54 (54 lecture)

Origin and nature of biological partnerships. Symbiotic relations from microbial landscapes to global ecology. Emphasis on ecological, behavioral and chemical exchanges between organisms and ecosystems.

Transfer Information: CSUGE Area B2, IGETC Area 5B, CSU Transferable, UC Transferable

**BIOL 291 Seminars in Biology (2 Units)**

Hours: 36 (36 lecture)

Topics of current interest in the Biological Sciences are presented in seminar format by invited researchers and students enrolled in the course. Emphasis on research and presentation skills, including analysis of primary literature.

Transfer Information: CSU Transferable

**BIOL 295 Internship In Biology (2-4 Units)**

Limitations on Enrollment: Other: Completion of two courses (in applicable discipline) at SBCC prior to enrolling in an Internship course.

Hours: 210 (210 lab)

Structured, on-the-job experience in a field directly related to the student's area of interest in the biological sciences.

Transfer Information: CSU Transferable

**BIOL 298 Independent Reading in Biology (1-4 Units)**

Hours: 192 (192 lab)

Independent literature search and/or reading of material on a topic in biology. A final report, including an annotated bibliography, is required.

Transfer Information: CSU Transferable

**BIOL 299 Independent Research In Biology (1-4 Units)**

Limitations on Enrollment: Student must have completed 12 units at SBCC with a G.P.A. of 2.5 and a minimum of 6 units with a G.P.A. of 3.0 in the Biological Sciences Department.

Hours: 192 (192 lab)

Independent, systematic research investigation of a problem in biology. A final report on research conducted is required. May be taken multiple times for credit. Course restricted to 3 repetitions

Transfer Information: CSU Transferable