

# BIOLOGY (BIOL)

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## BIOL 1 General Biology

**4 Units** (Degree Applicable, CSU, UC)

UC Credit Limitation

Lecture: 54 Lab: 54

**Prerequisite:** *Eligibility for ENGL 68*

**Advisory:** *READ 90*

Major principles and concepts, including cellular biology, energy relationships, biological systems, heredity, evolution and ecology for non-science majors.

## BIOL 2 Plant and Animal Biology

**4 Units** (Degree Applicable, CSU, UC, C-ID #: BIOL 140)

UC Credit Limitation

Lecture: 54 Lab: 54

**Prerequisite:** *BIOL 1 or BIOL 4 or BIOL 4H and eligibility for MATH 110 or MATH 130*

Organismal biology including concepts in systematics, evolution, plant and animal physiology, ecology, and biotic relationships. Field trips are required.

## BIOL 3 Ecology and Field Biology

**4 Units** (Degree Applicable, CSU, UC)

Lecture: 54 Lab: 54

**Advisory:** *Eligibility for ENGL 1A or ENGL 1AH or ENGL 1AM or AMLA 1A*

Identification and ecological relationships of common local plants and animals. Emphasizes evolutionary relationships; ecology including animal behavior, communities, ecosystems, wilderness and wildlife preservation, and population dynamics. Techniques of collecting and preserving. Many laboratory meetings conducted off campus; most trips require walking and/or hiking. Hiking, weekend and other field trips required.

## BIOL 4 Biology for Majors

**4 Units** (Degree Applicable, CSU, UC)

UC Credit Limitation

Lecture: 54 Lab: 71

**Prerequisite:** *(CHEM 10 or CHEM 40) and (Eligibility for MATH 110 or MATH 110H)*

**Advisory:** *Eligibility for ENGL 1A or ENGL 1AH or ENGL 1AM or AMLA 1A*

Principles of biology required for advanced study, including cellular and molecular biology, bioenergetics, genetics, reproduction, evolution, biodiversity, and ecology. General Biology for science majors. One hour discussion group per week. Field trips with extensive hiking required.

## BIOL 4H Biology for Majors - Honors

**4 Units** (Degree Applicable, CSU, UC)

UC Credit Limitation

Lecture: 54 Lab: 71

**Prerequisite:** *Acceptance into the Honors Program; (CHEM 40 or CHEM 10) and (Eligibility for MATH 110 or MATH 110H)*

Principles of biology required for advanced study including concepts of cellular and molecular biology, bioenergetics, genetics, reproduction, evolution, biodiversity and ecology. An honors course designed to provide an enriched experience. Students may not receive credit for both BIOL 4 and BIOL 4H. Field trips with extensive hiking required.

## BIOL 5 Contemporary Health Issues

**3 Units** (Degree Applicable, CSU, UC, C-ID #: PHS 100)

Lecture: 54

Contemporary health issues known to affect the quality and longevity of life. Topics include sexuality and reproduction, stress management, fitness and nutrition, substance use and abuse, and environmental quality. Emphasis on prevention of illness and injuries.

## BIOL 6 Humans and the Environment

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

**Prerequisite:** *Eligibility for ENGL 68*

Ecological concepts to aid understanding the Earth's environmental crisis and determining courses of action to correct the problem. Emphasis will be placed on specific problems of population, pollution, preservation of wildlife and wilderness, and open space. A historical appraisal of human attitudes toward the land and of the necessity of developing a new land ethic.

## BIOL 6L Humans and the Environment Laboratory

**2 Units** (Degree Applicable, CSU, UC)

Lab: 108

**Prerequisite:** *BIOL 6 (may be taken concurrently)*

Investigates major principles and problems of humans and the environment in the field and in the biological science laboratory. Most laboratory meetings will be conducted at off-campus locations. Some trips will require significant amounts of walking. Course includes one weekend and one all day field trip.

## BIOL 8 Cell and Molecular Biology

**4 Units** (Degree Applicable, CSU, UC, C-ID #: BIOL 190)

Lecture: 54 Lab: 54

**Prerequisite:** *(BIOL 4 or BIOL 4H) and (CHEM 50 or CHEM 50H)*

Cell and molecular biology including eukaryotic cells, eukaryotic organelles, protein structure and functions; DNA and RNA structure and functions; protein synthesis; genome organization in viruses, prokaryotes, and eukaryotes; gene cloning; protein and DNA technology and applications of genetic engineering.

## BIOL 13 Human Reproduction, Development and Aging

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

**Prerequisite:** *Eligibility for ENGL 68*

Human Development, from conception to death. Conception, growth, maturation and aging are studied as a natural continuum, influenced by our biophysical and psychosocial environment. Includes developmental theories and scientific methods used to study development. Field trips to several off-campus sites are required

## BIOL 15 Human Sexuality

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

**Prerequisite:** *Eligibility for ENGL 1A or ENGL 1AH or ENGL 1AM or AMLA 1A*

Surveys biological, behavioral, cultural and ethical aspects of human sexuality. Contains mature and sexually explicit content.

**BIOL 15H Human Sexuality - Honors**

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

**Prerequisite:** *Acceptance into the Honors Program*

Surveys biological, behavioral, cultural and ethical aspects of human sexuality. Contains mature and sexually explicit content. An honors course designed to provide an enriched experience. Students may not receive credit for both BIOL 15 and BIOL 15H.

**BIOL 17 Neurobiology and Behavior**

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

An integrated analysis of the biological, ecological and evolutionary bases of animal behavior (ethology.) Historical and evolutionary contexts are emphasized through a detailed consideration of the psychobiological, ecological, ontological and sociobiological determinants of animal behavior. Field trip required.

**BIOL 20 Marine Biology**

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

Marine environment including the principles of marine science, biology of marine invertebrates and vertebrates, structure and function of marine ecosystems, and human impact on the ocean. Field trip required.

**BIOL 21 Marine Biology Laboratory**

**1 Unit** (Degree Applicable, CSU, UC)

Lab: 54

**Corequisite:** *BIOL 20 (May have been taken previously)*

Field and laboratory aspects of the marine environment. Emphasizes the structure and functional biology of marine invertebrates and vertebrates, ecology of intertidal organisms, and ecology of estuaries. Completion or concurrent enrollment in BIOL 20 is required. Field trips are required.

**BIOL 25 Conservation Biology**

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

**Prerequisite:** *Eligibility for ENGL 1A or ENGL 1AH or ENGL 1AM or AMLA 1A*

Concepts of conservation biology for natural resources, including biogeography, biodiversity and extinction, environmental law, public lands, and conservation organizations. Emphasis on strategies important to addressing biological conservation and sustainable management of natural and managed ecosystems. A field trip is required.

**BIOL 34 Fundamentals of Genetics**

**3 Units** (Degree Applicable, CSU, UC)

Lecture: 54

**Prerequisite:** *BIOL 4 or BIOL 4H*

Theory and applications of genetics. Major topics include Mendelian and molecular genetics, mechanisms of inheritance, gene expression, linkage and chromosome mapping, mutations and evolution, population genetics, and ethical and moral implications of biotechnology.

**BIOL 34L Fundamentals of Genetics Laboratory**

**1 Unit** (Degree Applicable, CSU, UC)

Lab: 54

**Corequisite:** *BIOL 34 (May have been taken previously).*

Experiments and problem solving in genetics including Mendelian Genetics, linkage and recombination, cell division, mutation, molecular genetics including use of polymerase chain reaction (PCR) and electrophoresis, population genetics, and bioinformatics.

**BIOL 99A Independent Studies in Biology**

**1-2 Units** (Degree Applicable, CSU)

Lecture: 18-36

**Prerequisite:** *Approved Independent Study Learning Contract*

Offers selected students recognition for their academic interests and ability and opportunity to explore their disciplines in greater depth. The content of each course and the methods of study vary from semester to semester and depend on the particular project under consideration. Instructor authorization needed prior to enrollment. This course focuses on projects in the discipline of biology.