

BIOLOGY

BIO-1

General Biology

4.00 units

UC, CSU

Prerequisite: None.

Description: Introductory course designed for non-science majors that offers an integrated study of the basic principles of biology, with emphasis on the principles of structure and function, genetics, development, evolution, and ecology. Discussions on the philosophy, concepts, and implications of modern biology will be included. Students may not receive credit for both BIO-1 and BIO-1H. 54 hours lecture and 54 hours laboratory. (Letter grade only)

BIO-1H

Honors General Biology

4.00 units

UC, CSU

Prerequisite: None.

Limitation on enrollment: Enrollment in the Honors program.

Description: The course is designed for the non-science major. Students will explore the basic principles of biology, with particular emphasis on the molecular and cellular basis of life as well as genetics, development, evolution and ecology. Discussions on the philosophy, unifying concepts and applications/implications of biology will be included. The Honors course offers an enriched experience for accelerated students through smaller class size; a focus on the evidentiary basis of biological models; and the application of higher level critical thinking skills. Moreover, a thematic/concept-based approach to the course material will be used rather than the traditional topic-based, survey format. The laboratory component will involve completion of directed research projects that culminate in the submission and presentation of research papers, oral presentations and/or poster presentations in the appropriate scientific format. Students may not receive credit for both BIO-1 and BIO-1H. 54 hours lecture and 54 hours laboratory.(Letter grade only)

BIO-2

Zoology

5.00 units

CSU

Prerequisite: None.

Advisory: BIO-1 or BIO-5 or BIO-6 or BIO-7 or BIO-61 or CHE-1A or CHE-1AH.

Description: An intensive study of the Animal Kingdom for all life science majors, designed to prepare students for upper-division courses in organismal biology, zoology, ecology, pre-veterinary, pre-medical and scientific research fields. Emphasizes comparative animal structure, function, behavior, evolutionary history, classification, and ecology. 54 hours lecture and 108 hours laboratory.(Letter grade only)

BIO-2A

Invertebrate Zoology

5.00 units

UC, CSU

Prerequisite: None.

Description: This is a science-majors intensive study of invertebrate animals, emphasizing their structure, function, behavior, evolution, classification, and ecology. 54 hours lecture and 108 hours laboratory.(Letter grade only)

BIO-2B

Vertebrate Zoology

5.00 units

UC, CSU

Prerequisite: None.

Advisory: BIO-2A

Description: This is a science-majors intensive study of vertebrate animals, emphasizing their structure, function, behavior, evolution, classification, and ecology. 54 hours lecture and 108 hours laboratory.(Letter grade only)

BIO-3

Field Botany

4.00 units

UC, CSU

Prerequisite: None.

Description: Introduction to the classification of native and introduced plants with special emphasis on identification of species. Several field trips. 54 hours lecture and 54 hours laboratory.(Letter grade only)

BIO-4
Human Biology**4.00 units**
UC, CSU*Prerequisite: None.*

Description: A non-major introductory course in biology which offers an integrated study of the basic principles of biology as revealed in the human body. Emphasis is placed on cellular and system organization in relation to specific function and common disorders affecting the body; the interaction between the human body and its environment. Controversial, thought-provoking topics related to modern biology and medical advances involving genetic engineering will be included. This course satisfies district graduation and transfer requirements for a science lecture and laboratory course. 54 hours lecture and 54 hours laboratory.(Letter grade only)

BIO-5
General Botany
(C-ID:AG-PA 104)**4.00 units**
UC, CSU*Prerequisite: None.*

Description: Introduction to the plant sciences with principal emphasis on the structures, functions and ecology of common members of each of the major plant divisions. Designed for nonmajors and majors in health science, forestry, agriculture, environmental science, landscape design, horticulture and general nature studies. 54 hours lecture and 54 hours laboratory.(Letter grade only)

BIO-6
Introduction to Zoology**4.00 units**
UC, CSU*Prerequisite: None.*

Description: Introduction to the structure, function, behavior, ecology and evolution of major invertebrate and vertebrate animal groups. Designed for the non-science major as a survey of animal biology. 54 hours lecture and 54 hours laboratory. (Letter grade only)

BIO-7
Marine Biology**4.00 units**
UC, CSU*Prerequisite: None.*

Description: An ecological study of the marine environment. Emphasis will be placed on the local marine algae, plants, and animals and their interactions with the physical environment. Frequent field trips are combined with laboratory observations to acquaint the student with the identification and understanding of the common marine organisms of the Southern California coastline. 54 hours lecture and 54 hours laboratory. (Letter grade only)

BIO-8
Principles of Ecology**4.00 units**
UC, CSU*Prerequisite: None.*

Description: Ecology is the study of the interactions between organisms and their environment. Basic principles include evolution and natural selection, climate and other abiotic factors, population growth and genetics, community interactions, species diversity, biogeography, and biome recognition. Human impacts on the above will also be discussed. This course requires field trips. 54 hours lecture and 54 hours laboratory. (Letter grade only)

BIO-9
Introduction to the Natural History of Southern California**3.00 units**
UC, CSU*Prerequisite: None.*

Description: An introduction to the identification, description, and adaptations of plant and animal species found in southern California. Examples of habitat types that will be covered include local mountains, deserts, and coastal marine ecosystems. This course is designed to offer students an opportunity to discover what factors have shaped habitat types in southern California, what types of organisms are found in these varying habitats, and how southern California compares to other regions of biologic interest. 36 hours lecture and 54 hours laboratory.(Letter grade only)

BIO-10
Life Science Principles**3.00 units**
UC, CSU*Prerequisite: None.*

Description: For non-life science majors. An introduction to the principles of life sciences through the study of basic biological concepts of living organisms involving structure, behavior, evolutionary relationships and the social and environmental implications of life science. No credit at the University of California if taken following BIO-1 or 1H. 54 hours lecture.(Letter grade only)

BIO-14
Soil Science and Management **3.00 units**
UC, CSU

Prerequisite: None.

Description: An introduction to physical properties and classification of soils, physical and chemical properties of soil that governs soil reactions and interactions, nutrient regeneration, and management principles in relation to air, water, nutrients and organic matter. 54 hours lecture.(Letter grade only)

BIO-15
Soil Science and Management Laboratory **2.00 units**
UC, CSU

Prerequisite: None.

Description: A supplementary laboratory course to BIO-14 (Soil Science and Management), focusing on the basics of soil science, physical and biogeochemical properties, and interpretation for use and management. This course will give students hands-on perspectives of soil science, ranging from agricultural, wild lands, watershed, and environmental impacts. 108 hours laboratory.(Letter grade only)

BIO-16
Human Reproduction and Sexual Behavior **3.00 units**
UC, CSU
 (C-ID:PSY 130)

Prerequisite: None.

Description: Human anatomy, physiology and behavior as related to sexual reproduction, including discussion of fertilization, pregnancy, childbirth and birth control. Consideration also will be given to homosexuality, sexually transmitted disease, sex education, and sexual intercourse and response. 54 hours lecture. (Letter grade only)

BIO-18
Human Genetics **3.00 units**
UC, CSU

Prerequisite: None.

Advisory: High school biology or any college life science course with laboratory.

Description: A general education course for non-biology majors and allied health students who are interested in the underlying mechanisms of human heredity. Emphasis will be given to the role of genetics and environment on cells, individuals, family and human populations. Discussion on human genetic disorders and the social implications of modern human genetics will be included. 54 hours lecture.(Letter grade only)

BIO-19
Environmental Science **3.00 units**
UC, CSU

Prerequisite: None.

Description: A study of humans in relation to the environment that emphasizes population ecology, nutrient cycles and energy flow, pollution, food production, and conservation of natural resources. 54 hours lecture.(Letter grade only)

BIO-20
Plants and Human Affairs **3.00 units**
UC, CSU

Prerequisite: None.

Description: A history of the use and management of plants and fungi by humans. Agricultural, culinary, medicinal, cultural, technological, and horticultural uses of plants will be covered. Plants, fungi, and their products will be examined in lecture and laboratory activities including field trips. 36 hours lecture and 54 hours laboratory.(Letter grade only)

BIO-31A
Regional Field Biology Studies **1.00 unit**
CSU

Prerequisite: None.

Description: A field course with trips to regional points of biologic interest. This class is designed around its field excursions to sites with varying biologic interest. The course will include introductions to the local flora and fauna as well as basic geologic features and cultural history. 54 hours laboratory.(Letter grade only)

BIO-31B
Regional Field Biology Studies **2.00 units**
CSU

Prerequisite: None.

Description: A field course with trips to regional points of biologic interest. This class is designed around its field excursions to sites with varying biologic interest. The course will include introductions to the local flora and fauna as well as basic geologic features and cultural history. 108 hours laboratory.(Letter grade only)

BIO-31C
Regional Field Studies - Neotropics **3.00 units**
CSU

Prerequisite: None.

Description: A field biology course that offers field trips and excursions to neotropical points of biologic interest. A study of the unique environmental conditions, plant and animal species diversity, factors that shape local communities and ecosystems, and cultural history of local areas. 162 hours laboratory.(Letter grade only)

BIO-31D
Regional Field Studies - Eurasia **3.00 units**
CSU

Prerequisite: None.

Description: A field biology course that offers field trips and excursions to points of biologic interest in Eurasia. A study of the unique environmental conditions, plant and animal species diversity, factors that shape local communities and ecosystems, and cultural history of local areas. 162 hours laboratory.(Letter grade only)

BIO-31E
Regional Field Studies - South America **3.00 units**
CSU

Prerequisite: None.

Description: A field biology course that offers field trips and excursions to points of biologic interest in South America. A study of the unique environmental conditions in South America, plant and animal species diversity, factors that shape local communities and ecosystems, and cultural history of local areas. 162 hours laboratory.(Letter grade only)

BIO-35
Health Science **3.00 units**
UC, CSU

Prerequisite: None.

Description: A general education course that offers a basic study of human health and health care as revealed in the anatomy and physiology of the body, nutrition, exercise, stress management, weight management, protection from degenerative and communicable diseases, personal safety, environmental health, wellness, and professional medical care. Students will explore making responsible decisions regarding all aspects of healthy life style including getting fit, disease prevention and treatments, substances use and abuse, human sexuality, and selection of health providers. This course satisfies the California requirement in drug, alcohol, tobacco and nutrition education for teacher certification. 54 hours lecture. (Letter grade only)

BIO-40
Biometrics **4.00 units**
UC, CSU

Prerequisite: MAT-35.

Advisory: BIO-1.

Description: Applied statistical analysis of biological data. The understanding, interpretation, and performance of data analysis in a research context. 54 hours lecture and 54 hours laboratory.(Letter grade only)

BIO-45
Survey of Human Anatomy and Physiology **3.00 units**
UC, CSU

Prerequisite: None.

Description: An introductory and survey course of structural and functional aspects of the human body. Emphasis is placed on cell organization, human tissues, and discussion of each of the human systems. 54 hours lecture.(Letter grade only)

BIO-50A**Anatomy and Physiology I**

(C-ID:BIOL 115S=BIO 2A+BIO 2B)

4.00 units

UC, CSU

Prerequisite: BIO-1 or BIO-1H or BIO-4 or BIO-55 or BIO-60 or BIO-60H.

Description: First of a two course sequence that introduces students to the basic concepts and principles of anatomy and physiology. This course will provide a foundation for advanced study of the human body. The course covers body orientation and organization, cells and tissues, the skeletal and muscular systems, and the eye and ear. Designed to meet the prerequisites for professional programs, e.g. nursing, dental hygiene, and physical therapy. 36 hours lecture and 108 hours laboratory.(Letter grade only)

BIO-50B**Anatomy and Physiology II**

(C-ID:BIOL 115S=BIO 2A+BIO 2B)

4.00 units

UC, CSU

Prerequisite: BIO-50A.

Description: First of a two course sequence that introduces students to the basic concepts and principles of anatomy and physiology. This course will provide a foundation for advanced study of the human body. The course covers body orientation and organization, cells and tissues, the skeletal and muscular systems, and the eye and ear. Designed to meet the prerequisites for professional programs, e.g. nursing, dental hygiene, and physical therapy. 36 hours lecture and 108 hours laboratory.(Letter grade only)

BIO-55**Microbiology****4.00 units**

UC, CSU

Prerequisite: CHE-2A or CHE-2B or CHE-3, and BIO-1 or BIO-1H or BIO-50A or BIO-60 or BIO-60H.

Description: General characteristics of microorganisms with emphasis on morphology, growth, control, metabolism and reproduction; their role in disease, body defenses, and application to the biomedical field. 54 hours lecture and 54 hours laboratory.(Letter grade only)

BIO-60**Introduction to Molecular and Cellular Biology**

(C-ID:BIOL 190)(C-ID:BIOL 135S=BIO 60+BIO 61)

5.00 units

UC, CSU

*Prerequisite: CHE-1A or CHE-1AH**Advisory: MAT-35, ENG-50, ENG-80or qualifying placement level.*

Description: An intensive course for all Life Science majors designed to prepare the student for upper division courses in molecular biology, cell biology, developmental biology, evolution, and genetics. Course material includes principles of biochemistry, prokaryotic and eukaryotic cell structure and function, metabolism including photosynthesis and respiration, cell division and its control, classical and molecular genetics, signal transduction, early animal development, evolution and the diversity of life at the cellular level. 72 hours lecture and 54 hours laboratory.(Letter grade only)

BIO-61**Introduction to Organismal and Population Biology**

(C-ID:BIOL 140)(C-ID:BIOL 135S=BIO 60+BIO 61)

5.00 units

UC, CSU

Prerequisite: BIO-60 or BIO-60H.

Description: An intensive course designed for all Life Science majors to prepare the student for upper division courses in organismal and population biology. Course materials include plant structure and function, animal systems and behavior, ecological diversity and dynamics, and evolutionary theory, including population genetics. This course along with Biology 60 is intended to fulfill a year of transferable lower division general biology. Some field trips are required. 72 hours lecture and 54 hours laboratory. (Letter Grade, or Pass/No Pass option.)

BIO-85**Special Topics in Biology****1.00 unit**

CSU

*Prerequisite: None.**Limitation on enrollment: Intended for students who are involved in faculty-led research or other projects.*

Description: Provides a foundation for conducting research and/or activities in the biological sciences with emphasis on the scientific method. Focuses on procedures and protocols appropriate for literature reviews, laboratory and field studies including equipment use and maintenance, field and lab safety procedures, and addressing ethical concerns in biological research. 54 hours laboratory.(Letter grade only)