

# COURSES

## BIOLOGICAL SCIENCES COURSES

### **BIO 001A General Biology: Cells (3.0 Units/2.0 Lab) 5.0 UNITS**

Prerequisite CHM 001A ; Prerequisite MAT 000C or any higher math ; and Prerequisite BIO 010 or Prerequisite BIO 011 ; Advisory CHM 001B This course is a comprehensive introduction to cell and molecular biology, and is designed for students intending to transfer to majors in the biological sciences as well as for those seeking to enter professional programs such as medicine or pharmacy. Grade Only.

### **BIO 001AH General Biology: Cells-Honors (3.0 Units/2.0 Lab) 5.0 UNITS**

This honors course is a comprehensive introduction to cell and molecular biology, and is designed for students intending to transfer to majors in the biological sciences as well as for those seeking to enter professional programs such as medicine or pharmacy. Students may not receive credit for both BIOSC 001A and BIOSC 001AH. This section requires enrollment in the Honors Transfer Project. More information and the online application can be found at <http://honors.missioncollege.edu>.

### **BIO 001B General Biology: Organisms (3.0 Units/2.0 Lab) 5.0 UNITS**

Prerequisite BIO 001A This course examines the unity and diversity of multicellular life, ecological and evolutionary principles, and form/function relationships in plants and animals. The course is designed for students majoring in the biological sciences or seeking entry to professional programs such as Medicine, Pharmacy, and Dentistry.

### **BIO 004 Microbiology (3.0 Units/2.0 Lab) 5.0 UNITS**

Prerequisite CHM 001A or Prerequisite CHM 060 or Prerequisite CHM 030A or Prerequisite CHM 030B ; and Prerequisite BIO 010 and Prerequisite BIO 010L , or Prerequisite BIO 011 or Prerequisite BIO 022 or Prerequisite BIO 041 or Prerequisite BIO 043 or Prerequisite BIO 048 This course is intended for nursing and other health-science majors. Lecture topics include the morphology and physiology of the major groups of microorganisms, microbial genetics, mechanisms of infection and disease, and the human immune response to infection. Laboratory activities focus on the culture and identification of bacteria of medical importance.

### **BIO 010 Introduction to Biology (3.0 Units) 3.0 UNITS**

BIO 010 is an introductory course in biology designed for the non-biological sciences major. Topics include cell structure and function, energy exchange and life processes, taxonomy, ecology, heredity, diversification and evolution. This lecture course may be taken with or without BIOSC 010L, Introduction to Biology Lab.

### **BIO 010L Introduction to Biology Lab (1.0 Unit) 1.0 UNIT**

Corequisite BIO 010 or Prerequisite BIO 010 This is an introductory general biology laboratory course designed for non-science majors. All students who enroll in this lab course must also enroll in a BIO 010 lecture.

### **BIO 011 Human Biology (3.0 Units/1.0 Unit) 4.0 UNITS**

This course is an introduction to biology concepts and principles, using humans as a model. BIOSC 011 satisfies the same general education requirement as BIOSC 010.

### **BIO 012 Emerging Infectious Diseases (3.0 Units) 3.0 UNITS**

In this introductory biology course, learn how infectious agents cause disease, and what factors are leading to the emergence of new diseases such as mad cow, SARS, and drug-resistant tuberculosis.

### **BIO 014 Introductory Neuroscience (3.0 Units) 3.0 UNITS**

This course is an introduction to the organization and functions of the nervous system. The physiology of the brain and senses are discussed. Emotions, sleep, language, attention, memory, and a survey of nervous system disorders are explored.

### **BIO 014H Introductory Neuroscience Honors (3.0 Units) 3.0 UNITS**

Total Lecture: 54 hours. Advisory: (ENG 001A or ENG 001AX) and REA 054. Acceptable for credit: University of California, California State University. This honors course is an introduction to the organization and functions of the nervous system. The physiology of the brain and senses are discussed.

Emotions, sleep, language, attention, memory and a survey of nervous system disorders are explored. Pass/No Pass Option

### **BIO 016 Marine Biology (3.0 Units/1.0 Unit) 4.0 UNITS**

This four unit course introduces students of all disciplines to ocean ecology and marine life. Topics are explored through classroom learning and seven required field trips to local marine habitats and research facilities in the San Francisco and Monterey Bays. Some field trips may extend beyond regularly scheduled class meeting time. Students arrange their own transportation to the field sites.

### **BIO 017 Genetics and Society (3.0 Units) 3.0 UNITS**

This course is a broad survey of genetics, with a focus on the societal impacts of topics in genetics such as human genetic disease, biotechnology, reproductive technologies, and evolution. This course is a broad survey of genetics, with a focus on the societal impacts of topics in genetics such as human genetic disease, biotechnology, reproductive technologies, and evolution. It is designed for the general education student.

### **BIO 017H Genetics and Society - Honors (3.0 Units) 3.0 UNITS**

This course is a broad survey of genetics, with a focus on the societal impacts of topics in genetics such as human genetic disease, biotechnology, reproductive technologies, and evolution. The honors component involves an in-depth analysis of specific topics, using current information from research journals. Students cannot get credit for both BIOSC 017 and BIOSC 017H. This section requires enrollment in the Honors Transfer Project. More information and the online application can be found at <http://honors.missioncollege.edu>.

### **BIO 018 The Biology Of Cancer (3.0 Units) 3.0 UNITS**

Total Lecture: 54 hours. Acceptable for credit: University of California, California State University. This course introduces the basic principles underlying the development and treatment of cancer. Normal cell biology processes are contrasted with the genetic and cellular changes that lead to the development of cancer. Current topics in scientific and clinical research on cancer biology will be explored. Pass/No Pass Option. CSUGE: B2; IGETC: 5B.

### **BIO 018H The Biology Of Cancer - Honors (3.0 Units) 3.0 UNITS**

Total Lecture: 54 hours. Acceptable for credit: University of California, California State University. This honors course introduces the basic principles underlying the development and treatment of cancer. Normal cell biology processes are contrasted with the genetic and cellular changes that lead to the development of cancer. Current topics in scientific and clinical research on cancer biology will be explored. This is the honors version of BIO 018. Students cannot get credit for both BIO 018 and BIO 018H. Enrollment in the Honors Program is required. Pass/No Pass Option. CSUGE: B2; IGETC: 5B.

### **BIO 019 Oceans: Life in the Sea (3.0 Units) 3.0 UNITS**

This non-majors course surveys the biological principles of marine science. It provides an overview of the ocean environment, diversity of marine life, basic ecological principles and types of marine ecosystems. The relationship between humans and the ocean is emphasized, focusing on conservation biology and sustainability.

### **BIO 022 Anatomy & Physiology for Allied Health Workers (3.0 Units/1.0 Unit) 4.0 UNITS**

This course is an overview of the normal structure and function of the human body and is designed to provide a foundation for the study of disease and dysfunction in the clinical setting. BIOSC 022 is designed to meet the state board requirements for VN and PT programs.

### **BIO 025 Environmental Biology (3.0 Units) 3.0 UNITS**

This course is designed for student of all disciplines to introduce a wide range of contemporary biological topics that will affect their lives; e.g., population growth and control, environmental problems, genetic manipulation, nutrition, energy issues, etc.

### **BIO 030 Tropical Ecology (3.0 Units) 3.0 UNITS**

The amazing diversity of life in the tropics is the subject of this introductory level class. Students explore rainforest inhabitants and their relationships, and learn about their value and conservation. This lecture course may be taken with or without BIOSC 030L, Tropical Ecology Lab.

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### **BIO 031L Tropical Ecology Field Studies (1.0 Unit) 1.0 UNIT**

Total Lab: 54 hours Acceptable for credit: University of California (Pending), California State University In this introductory level laboratory class, students carry out research methods that ecologists use to observe and investigate tropical ecosystems. This course includes a field trip to Costa Rica. Students who take this course are not required to complete BIO 30, the lecture course in Tropical Ecology. Pass/No Pass Option.

### **BIO 032 California Plants and Animals (3.0 Units/1.0 Unit) 4.0 UNITS**

This field course explores the ecology of California flora and fauna through studies of plants and animals in terrestrial and aquatic ecosystems within the San Francisco Bay region.

### **BIO 042 Principles of Plant Biology (3.0 Units/2.0 Lab) 5.0 UNITS**

Prerequisite High School or College biology course and Prerequisite MAT 000C and Prerequisite CHM 001A This is a course for biology majors that examines principles of botany through comprehensive studies of the major plant, fungi and algal phyla, with emphasis on structure, function and evolution of vascular plants. Ecological principles are also discussed.

### **BIO 047 Human Anatomy (3.0 Units/2.0 Lab) 5.0 UNITS**

Prerequisite BIO 010 and Prerequisite BIO 010L ; or Prerequisite BIO 011 , or Prerequisite BIO 022 , or Prerequisite BIO 041 , or Prerequisite BIO 043 This course is a detailed lecture and laboratory study of the gross and microscopic structures of the human body in preparation for careers in nursing, physical therapy, occupational therapy, kinesiology, etc.

### **BIO 048 Human Physiology (3.0 Units/2.0 Lab) 5.0 UNITS**

Prerequisite BIO 047 ; and Prerequisite CHM 001A or Prerequisite CHM 001AH or Prerequisite CHM 030A or Prerequisite CHM 060 ; Advisory MAT 000C or Advisory MAT 000CM This course provides students with a basic understanding of the physiological mechanisms underlying body function, including the chemical and cellular basis for the workings of the nervous, muscular, cardiovascular, respiratory, renal and digestive systems. The laboratory portion familiarizes students with scientific analysis and research techniques.

### **BIO 048H Human Physiology - Honors (3.0 Units/2.0 Lab) 5.0 UNITS**

This course provides students with a basic understanding of the physiological mechanisms underlying body function, including the chemical and cellular basis for the workings of the nervous, muscular, cardiovascular, respiratory, renal and digestive systems. The laboratory portion familiarizes students with scientific analysis and research techniques. The honors component involves an in-depth analysis of specific topics, using current information from research journals. Students cannot get credit for both BIOSC 48 and BIOSC 48H. This section requires enrollment in the Honors Transfer Project. More information and the online application can be found at <http://honors.missioncollege.edu>.