

# BIOLOGY (BIOL)

## BIOL C100 3 Units (54 lecture hours)

### Introduction to Biology

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU; UC: Credit Limitation: No credit for BIOL C100 C100L if taken after BIOL C180; No credit for BIOL C100L unless BIOL C100 is taken previously or concurrently; No credit for BIOL C100C if taken after BIOL C100 BIOL C100L or BIOL C180.

Biology for non-science majors. A general study of the basic concepts of biology, including the human body and the environment. Emphasis on the characteristics of plant and animal life, human body systems, health, genetics, and the interaction of organisms in their environment. Graded or Pass/No Pass option.

## BIOL C100C 4 Units (54 lecture hours; 54 lab hours)

### Introduction to Biology Lecture/Lab

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU; UC: Credit Limitation: No credit for BIOL C100C if taken after BIOL C100 BIOL C100L or BIOL C180.

A general study of the basic concepts of biology including the human body and the environment. Emphasis on the characteristics of plant and animal life, human body systems, health, genetics, and the interaction of organisms in their environment. This lecture and lab course is suitable as a general education elective for non-science majors. Course combines content from BIOL C100 and BIOL C100L. Graded and Pass/No Pass option.

## BIOL C100L 1 Unit (54 lab hours)

### Introduction to Biology Lab

**Prerequisite(s):** BIOL C100 with a grade of C or better or concurrent enrollment.

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU; UC: Credit Limitation: No credit for BIOL C100 C100L if taken after BIOL C180; No credit for BIOL C100L unless BIOL C100 is taken previously or concurrently; No credit for BIOL C100C if taken after BIOL C100 BIOL C100L or BIOL C180.

Formerly BIOL C101. Biology lab for non-science majors. A general study of plant and animal life processes to acquaint the non-biology major with basic biological concepts and instruments in the laboratory. Graded or Pass/No Pass option.

## BIOL C102 3 Units (54 lecture hours)

### Introduction to the Concepts of Anatomy and Physiology

**Advisory:** ENGL C100.

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU; UC: Credit Limitation: Credit may be granted for either BIOL C102 or BIOL C221 or BIOL C220, BIOL C225.

This lecture-only course provides a general overview of the anatomy and physiology of the eleven human body systems. It is designed for the student with little or no biological background who would like to learn more about the structure and function of the human body, including anatomical and physiological terminology, the student who would like a preparatory course before embarking on the more advanced anatomy and physiology courses, and the student interested in the many of the Health Science majors, Science and Math Area of Emphasis, or the Allied Health Care Careers Certificate, or as a life science general education credit. Graded or pass/no pass option.

## BIOL C103 3 Units (54 lecture hours)

### Introduction to Marine Science

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU; UC: Credit Limitation: BIOL C103, BIOL C103L and MRSC C100, MRSC C100L: maximum credit, 4 units.

A general study of the marine environment. Examines the chemical, biological, and geological properties of the sea; the sea as a natural resource; and its geo-political and economic impact. This course is identical to MRSC C100. Graded or Pass/No Pass option.

## BIOL C103L 1 Unit (54 lab hours)

### Marine Science Lab

**Co-requisite(s):** BIOL C103 or taken previously with a grade of C or better.

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU; UC: Credit Limitation: BIOL C103, BIOL C103L and MRSC C100, MRSC C100L: maximum credit, 4 units

An orientation to marine science research process, techniques, equipment, institutions, and training/education centers. Investigations of physical and chemical properties of the sea; conditions of the air/sea/land interface; review of biological taxonomy and classification; study of longitude, latitude, ocean basin geography, and geology. Evaluation of the sea as a physical, chemical, biological, and recreational resource. Analyses of human efforts to control pollution, manage fisheries, and monitor the ocean world. This course is identical to MRSC C100L. Graded or Pass/No Pass option.

## BIOL C104 3 Units (54 lecture hours)

### Medical Terminology for Health Professionals

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU.

This course introduces students to the subject of Medical Terminology and prepares them for all careers in the medical field. It covers the study of the basic elements of medical terms as well as the basic anatomy and physiology of the human body. In addition, it covers the medical terms used to describe different pathological conditions, diagnostic tests, and therapeutic procedures. Graded or Pass/No Pass option. **C-ID:** HIT 103 X.

**BIOL C106 3 Units (54 lecture hours)****Human Ecology****Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU; UC: Credit Limitation: credit may be granted for either BIOL C106 or ECOL C100.

Provides students with an understanding of the biological implication of man's interplay with the planet. The course is focused on the biological prospects of the future as viewed by examining the biosphere and biogeochemical cycles. Future predictions and current topics will be analyzed in relationship to planet management. This course is identical to ECOL C100. Graded or Pass/No Pass option.

**BIOL C109 1 Unit (18 lecture hours)****Career Choices in Healthcare****Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

This one-unit course explores numerous healthcare career opportunities, including inpatient, outpatient, and ancillary services; as well as professional, allied health, and athletic training careers. Students will also evaluate their own personal interests as they learn about the variety of healthcare careers. Healthcare is one of the largest employers in Southern California and nationwide. This course is identical to HLTH C109. Graded or Pass/No Pass option.

**BIOL C120 3 Units (54 lecture hours)****Biology of Aging****Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU; UC: Credit Limitation: BIOL C120 and AGNG C122 combined: maximum credit, 1 course.

This course will explore normal versus abnormal changes in aging and the human ability to adapt. Each body system will be reviewed, focusing on how age changes relate to the development of disorders and diseases in later life. Methods of assisting older persons in adapting to acute and chronic illnesses and in health promotion and maintenance will be discussed. This course is identical to AGNG C122. Graded or Pass/No Pass option.

**BIOL C122 3 Units (54 lecture hours)****Bioethics****Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU; UC: Credit Limitation: PHIL C122 and BIOL C122 combined: maximum credit, 1 course.

Bioethics looks at the ethical implications of advancements in biology and medicine and at how they affect decisions on life, death, biotechnology, politics, law, and philosophy. This course is identical to PHIL C122 and fulfills the philosophy humanities requirement. Graded or Pass/No Pass option.

**BIOL C180 4 Units (63 lecture hours; 45 lab hours)****Cell and Molecular Biology****Prerequisite(s):** CHEM C180 with a grade of C or better or equivalent.**Advisory:** Eligibility for ENGL C100.**Grading Mode:** Standard Letter**Transfer Credit:** CSU; UC: Credit Limitations: no credit for BIOL C100 C100L if taken after BIOL C180; no credit for BIOL C100C if taken after BIOL C100 BIOL C100L or BIOL C180.

This course, intended for biological sciences and pre-health profession majors, explores principles and applications in cell and molecular biology. Topics include biological molecules; homeostasis; viruses; eukaryotic/prokaryotic cell structure and function; cell metabolism, including photosynthesis and respiration; cell communication; cell reproduction and its controls; classical (Mendelian) genetics; molecular genetics; and biotechnology. Letter Grade only. **C-ID:** BIOL 190, BIOL 135 S.

**BIOL C185 5 Units (54 lecture hours; 108 lab hours)****Diversity of Organisms****Prerequisite(s):** BIOL C180 with a grade of C or better.**Grading Mode:** Standard Letter**Transfer Credit:** CSU; UC.

This course is a survey of the basic biology and diversity of unicellular and multicellular organisms designed to satisfy the major requirements for an Associate or Baccalaureate degree in the Biological Sciences. It emphasizes general biological principles, such as phylogeny, classification, structure, function, evolution, and environmental interactions by focusing on ecological, evolutionary, anatomical and physiological relationships among major taxa of bacteria, archaeans, protists, fungi, plants, and animals. The laboratory portion of this course emphasizes hands-on learning through hypothesis development, data collection and analysis in the field and laboratory; dissection, microscopy, and identification of living and non-living specimens. Letter Grade only. **C-ID:** BIOL 140, BIOL 135 S.

**BIOL C194 0.5 Units (4 lecture hours; 16 lab hours)****Labs Skills in Cell and Molecular Biology****Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

This laboratory class teaches technical skills needed in biotechnology, specifically geared toward cellular and molecular biology techniques. Skills learned include the ability to apply the processes of scientific inquiry and experimental design to the study of biological concepts, the ability to use the compound microscope, aseptic technique, common techniques used in the biotech laboratory, and the use of laboratory equipment used in biotechnology. Graded or Pass/No Pass option.

**BIOL C195 0.5 Units (4 lecture hours; 16 lab hours)****Lab Skills in Anatomy****Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

This laboratory class teaches technical skills needed in understanding microscopic and gross anatomy. Skills learned include use of the compound microscope, understanding tissue and staining properties, and dissection techniques. Graded or Pass/No Pass option.

**BIOL C196 0.5 Units (4 lecture hours; 16 lab hours)****Lab Skills in Microbiology****Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

This laboratory class teaches students technical skills needed in microbiology. Skills learned include compound microscope, aseptic technique, gram staining, inoculation, and microbial plating and simple identification of microbes. Graded or Pass/No Pass option.

**BIOL C197 0.5 Units (4 lecture hours; 16 lab hours)****Lab Skills in Physiology****Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

This laboratory class teaches technical skills needed in assessing basic physiological measurements. Skills learned include measuring blood pressure, pulse, respiratory rate, spirometry, cardiac, sensory and motor examinations, and basic blood typing. Graded or Pass/No Pass option.

**BIOL C200 3 Units (54 lecture hours)****Pharmacology****Prerequisite(s):** BIOL C225 with a grade of C or better.**Advisory:** CHEM C110 or CHEM C180; eligibility for ENGL C100.**Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU.

This course, designed for students entering graduate health care programs, covers the basic principles of pharmacology; classification of drugs, methods, and routes of administration, distribution, absorption, excretion; desired and toxic effects; indication and contraindication for use. Graded or Pass/No Pass option. **C-ID:** HIT 107 X.

**BIOL C210 5 Units (54 lecture hours; 108 lab hours)****General Microbiology****Advisory:** CHEM C110 and BIOL C100 or C180 and eligibility for ENGL C100.**Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU; UC: Credit Limitation: BIOL C211, BIOL C211L, BIOL C210 combined: maximum credit, 5 units.

Major concepts of microbiology are discussed as they relate to the principal classes of microorganisms: bacteria, fungi, algae, protozoa, and viruses. Topics covered include 1) functional anatomy of prokaryotes and eukaryotes 2) microbial metabolism and genetics 3) characteristics and control of microbial growth 4) microbial taxonomy and methods of microbial classification 5) host-microbe interactions 6) mechanisms of microbial pathogenicity 7) immunology 8) biotechnology and human infectious diseases. The laboratory focuses on methods for identifying and characterizing microbes, including aseptic technique, microscopy, staining, cultivation, molecular biology, and bioinformatics. Both lecture and laboratory content relate to general and clinical applications. Graded or Pass/No Pass option.

**BIOL C211 3 Units (54 lecture hours)****General Microbiology Lecture****Advisory:** BIOL C100 and CHEM C110 and eligibility for ENGL C100.**Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU; UC: Credit Limitation: BIOL C211, BIOL C211L, BIOL C210 combined: maximum credit, 5 units.

Major concepts of microbiology are discussed as they relate to the principal classes of microorganisms: bacteria, fungi, algae, protozoa, and viruses. Topics covered include 1) functional anatomy of prokaryotes and eukaryotes, 2) microbial metabolism and genetics, 3) characteristics and control of microbial growth, 4) microbial taxonomy and methods of microbial classification, 5) host-microbe interactions, 6) mechanisms of microbial pathogenicity, 7) immunology, 8) biotechnology and human infectious diseases. This course covers the lecture content in BIOL C210. Graded or Pass/No Pass option.

**BIOL C211L 2 Units (108 lab hours)****General Microbiology Lab****Prerequisite(s):** BIOL C211 with a grade of C or better or concurrent enrollment.**Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU; UC: Credit Limitation: BIOL C211, BIOL C211L and BIOL C210 combined: maximum credit, 5 units.

Laboratory focuses on methods for identifying and characterizing microbes, including aseptic technique, microscopy, staining, cultivation, molecular biology and bioinformatics. This course covers the laboratory content in BIOL C210 and is meant to be taken with BIOL C211, the General Microbiology lecture. Graded or Pass/No Pass option.

**BIOL C220 5 Units (72 lecture hours; 54 lab hours)****Human Anatomy****Advisory:** BIOL C100 or BIOL C102 and ENGL C100 and MATH C100.**Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU; UC: Credit Limitation: Credit may be granted for either BIOL C102 or BIOL C221 or BIOL C220, BIOL C225.

Formerly BIOL C170. Introduction to the structure and design of the human body. Includes structural components, spatial relationships, and body system interactions. Students participate in the laboratory, which will include dissections. Appropriate for students interested in human anatomy and in pursuing a health field pathway; satisfies requirements for nursing, physician assistant, occupational therapy, physical therapy, pre-pharmacy majors, kinesiology majors, medical, dental, and other health field programs. Graded or Pass/No Pass option. **C-ID:** BIOL 110 B.

**BIOL C221 4 Units (54 lecture hours; 54 lab hours)****Introduction to Anatomy and Physiology****Grading Mode:** Standard Letter, Pass/No Pass**Transfer Credit:** CSU; UC: Credit Limitation: Credit may be granted for either BIOL C102 or BIOL C221 or BIOL C220, BIOL C225.

Formerly BIOL C105. This course with laboratory introduces students to the subject of Anatomy and Physiology of the human body. It highlights the interaction between different body systems to maintain homeostasis. This course prepares students for many programs in the medical field. Graded or Pass/No Pass option.

**BIOL C225 4 Units (54 lecture hours; 54 lab hours)****Human Physiology**

**Prerequisite(s):** BIOL C220 and CHEM C110, or C130, or C180 with a grade of C or better; or may be taken concurrently.

**Advisory:** ENGL C099 or eligible for ENGL C100 and MATH C030 or C045 or eligible for MATH C100 or higher.

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU; UC: Credit Limitation: Credit may be granted for either BIOL C102 or BIOL C221 or BIOL C220, BIOL C225.

Formerly BIOL C175. Emphasis is on integration of body systems and the interrelationships for maintaining body homeostasis. This course is designed for pre-medical health field majors including the pre-nursing, pre-physical therapy, pre-occupational therapy, pre-pharmacy, pre-physician assistant, pre-dental, and pre-medical student. Graded or Pass/No Pass option. **C-ID:** BIOL 120 B.

**BIOL C226 3 Units (54 lecture hours)****Pathophysiology**

**Prerequisite(s):** BIOL C220 and C225.

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU; UC.

Pathophysiology is the study of disease processes in the human. This course introduces the fundamentals of pathophysiology, focusing on essential concepts of physiologic changes and altered functions in the human body resulting from disease processes. Principles from anatomy, physiology, and chemistry provide the foundation for the study of pathophysiology, body systems, etiology and pathogenesis. Diagnostic procedures, preventative measures and current therapeutic regimens are explored. Graded or Pass/No Pass option. **C-ID:** HIT 105X.

**BIOL C281 4 Units (72 lecture hours)****Biochemistry**

**Prerequisite(s):** CHEM C220 with a grade of C or better.

**Advisory:** BIOL C180.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU.

An introduction to the chemistry of biology with a focus on the structure and function of biomolecules, metabolic processes, and hormonal regulation. This course serves to satisfy transfer requirements for some biology majors. This course is identical to CHEM C281. Letter Grade only.

**BIOL C283 4 Units (72 lecture hours)****Genetics**

**Prerequisite(s):** BIOL C180 and CHEM C180 or C185 with a grade of C or better.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU; UC.

This course covers the principles of Mendelian and non-Mendelian inheritance, eukaryotic and prokaryotic gene transmission, replication, mutation, recombination, gene expression and regulation, cell division, meiosis, human genetic diseases, and ethical implications of genetics. Emphasis is placed on problem solving. Letter Grade only.

**BIOL C291 1 Unit (90 other hours)****Work Based Learning**

**Prerequisite(s):** Complete 5.0 units in college-level biology coursework.

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU.

Course is designed to provide students with real-life experiences in Biological Science. On-campus work consists of instruction and experience in the maintenance and operation of equipment and materials used in the Biology Department. Students complete research projects that align with STEM fields in cooperation with an internship in which the student is employed, or serves as a volunteer, in a biology-related setting (e.g., hospital, lab, museum, park) under the supervision of a qualified professional or faculty member. Instructor permission required. Be employed or volunteer in a biology-related setting for 5 hours per week per unit of credit. Graded or Pass/No Pass option.

**BIOL C292 2 Units (180 other hours)****Work Based Learning**

**Prerequisite(s):** Complete 5.0 units in college-level biology coursework.

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU.

Course is designed to provide students with real-life experiences in Biological Science. On-campus work consists of instruction and experience in the maintenance and operation of equipment and materials used in the Biology Department. Students complete research projects that align with STEM fields in cooperation with an internship in which the student is employed, or serves as a volunteer, in a biology-related setting (e.g., hospital, lab, museum, park) under the supervision of a qualified professional or faculty member. Instructor permission required. Be employed or volunteer in a biology-related setting for 5 hours per week per unit of credit. Graded or Pass/No Pass option.

**BIOL C296 1 Unit (54 lab hours)****Advanced Anatomical Dissection**

**Prerequisite(s):** BIOL C220 with a minimum grade of A and instructor approval.

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU; UC.

This lab course provides prior anatomy students the opportunity to dissect a portion of a human cadaver. The student will independently perform the dissections during open laboratory times under the guidance of an anatomy instructor. At the end of the course, the student will have successfully dissected a selected section of a cadaver that can be used in future anatomy courses. Graded or Pass/No Pass option.

**BIOL C297****1 Unit (54 lab hours)****Advanced Anatomical Dissect 2**

**Prerequisite(s):** BIOL C220 with a minimum Grade of A and BIOL C296 with a minimum Grade of A; Instructor Approval.

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU.

This lab course provides prior anatomy students who have completed Advanced Anatomical Dissection the opportunity to master dissect a portion of a human cadaver. The student will independently perform the dissections during open laboratory times under the guidance of an anatomy instructor. At the end of the course, the student will have masterfully dissected a selected section of a cadaver that can be used in future anatomy courses. Graded or Pass/No Pass option.