

# 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.

## 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.

## BIOL C100L 1 Unit (54 lab hours)

### Introduction to Biology Lab

**Prerequisite(s):** BIOL C100 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.

## BIOL C102 3 Units (54 lecture hours)

### Introduction to the Concepts of Anatomy and Physiology

**Advisory:** ENGL C1000.

**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.

## 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. Enrollment Limitation: MRSC C100; students who complete BIOL C103 may not enroll in or receive credit for MRSC C100.

## 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. **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. Enrollment Limitation: ECOL C100; students who complete BIOL C106 may not enroll in or receive credit for ECOL C100.

## 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. Enrollment Limitation: HLTH C109; students who complete BIOL C109 may not enroll in or receive credit for HLTH C109.

## 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. Enrollment Limitation: AGNG C122; students who complete BIOL C120 may not enroll in or receive credit for AGNG C122.

- 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 fulfills the philosophy humanities requirement. Enrollment Limitation: PHIL C122; students who complete BIOL C122 may not enroll in or receive credit for PHIL C122.
- BIOL C180** **4 Units (54 lecture hours; 54 lab hours)**  
**Cell and Molecular Biology**  
**Prerequisite(s):** CHEM C180.  
**Advisory:** Eligibility for ENGL C1000.  
**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. **C-ID:** BIOL 190, BIOL 135 S.
- BIOL C185** **5 Units (54 lecture hours; 108 lab hours)**  
**Diversity of Organisms**  
**Prerequisite(s):** BIOL C180.  
**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. **C-ID:** BIOL 140, BIOL 135 S.
- BIOL C200** **3 Units (54 lecture hours)**  
**Pharmacology**  
**Prerequisite(s):** BIOL C225.  
**Advisory:** CHEM C110 or CHEM C180; eligibility for ENGL C1000.  
**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. **C-ID:** HIT 107 X.
- BIOL C210** **5 Units (54 lecture hours; 108 lab hours)**  
**General Microbiology**  
**Advisory:** CHEM C110, BIOL C100 or BIOL C180, and eligibility for ENGL C1000.  
**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.
- BIOL C220** **5 Units (72 lecture hours; 54 lab hours)**  
**Human Anatomy**  
**Advisory:** BIOL C100 or BIOL C102 and ENGL C1000 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. **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.
- BIOL C225** **4 Units (54 lecture hours; 54 lab hours)**  
**Human Physiology**  
**Prerequisite(s):** BIOL C220 and CHEM C110 or CHEM C130 or CHEM C180; or may be taken concurrently.  
**Advisory:** A course taught at the level of Preparation for College Composition or appropriate English placement and a course taught at the level of intermediate algebra or appropriate math placement.  
**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. **C-ID:** BIOL 120 B.

<p><b>BIOL C226</b> <b>3 Units (54 lecture hours)</b>  <b>Pathophysiology</b>  <b>Prerequisite(s):</b> BIOL C220 and BIOL C225.  <b>Grading Mode:</b> Standard Letter, Pass/No Pass  <b>Transfer Credit:</b> 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. <b>C-ID:</b> HIT 105X.</p>	<p><b>BIOL C292A</b> <b>2 Units (108 lab hours)</b>  <b>Work Experience Education</b>  <b>Grading Mode:</b> Standard Letter, Pass/No Pass  <b>Transfer Credit:</b> CSU.            Formerly: BIOL C292. This course enhances each work experience education (WEE) participant's job skills by bridging the gap between educational theory and on-the-job practices through individualized performance objectives related to the student's career or occupational goal. Note: 54 hours of paid or non-paid work in biological sciences and related fields, for each one-semester credit. This course aligns with updates to California Education Code (Title V) related to work experience education, revised August 2023.</p>
<p><b>BIOL C281</b> <b>4 Units (72 lecture hours)</b>  <b>Biochemistry</b>  <b>Prerequisite(s):</b> CHEM C220.  <b>Advisory:</b> BIOL C180.  <b>Grading Mode:</b> Standard Letter  <b>Transfer Credit:</b> 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. Enrollment Limitation: CHEM C281; students who complete BIOL C281 may not enroll in or receive credit for CHEM C281.</p>	<p><b>BIOL C296</b> <b>1 Unit (54 lab hours)</b>  <b>Advanced Anatomical Dissection</b>  <b>Prerequisite(s):</b> BIOL C220 with a minimum grade of A and instructor approval.  <b>Grading Mode:</b> Standard Letter, Pass/No Pass  <b>Transfer Credit:</b> 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.</p>
<p><b>BIOL C283</b> <b>4 Units (72 lecture hours)</b>  <b>Genetics</b>  <b>Prerequisite(s):</b> BIOL C180 and CHEM C180 or CHEM C185.  <b>Grading Mode:</b> Standard Letter  <b>Transfer Credit:</b> 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.</p>	<p><b>BIOL C297</b> <b>1 Unit (54 lab hours)</b>  <b>Master Advanced Anatomical Dissection</b>  <b>Prerequisite(s):</b> BIOL C220 with a minimum Grade of A and BIOL C296 with a minimum Grade of A; Instructor Approval.  <b>Grading Mode:</b> Standard Letter, Pass/No Pass  <b>Transfer Credit:</b> 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.</p>
<p><b>BIOL C291A</b> <b>1 Unit (54 lab hours)</b>  <b>Work Experience Education</b>  <b>Grading Mode:</b> Standard Letter, Pass/No Pass  <b>Transfer Credit:</b> CSU.            Formerly: BIOL C291. This course enhances each work experience education (WEE) participant's job skills by bridging the gap between educational theory and on-the-job practices through individualized performance objectives related to the student's career or occupational goal. Note: 54 hours of paid or non-paid work in biological sciences and related fields, for each one-semester credit. This course aligns with updates to California Education Code (Title V) related to work experience education, revised August 2023.</p>	<p><b>BIOL C299</b> <b>1 Unit (18 lecture hours)</b>  <b>Research and Experimental Design</b>  <b>Grading Mode:</b> Standard Letter  <b>Transfer Credit:</b> CSU.            Introduction to the culture of science and research. Students will read and discuss research articles, write brief reports, give oral presentations and learn about lab safety, research ethics, scientific discourse and future career prospects.</p>

**BIOL C299L**

**1 Unit (54 lab hours)**

**Research Skills Laboratory**

**Prerequisite(s):** BIOL C299.

**Grading Mode:** Pass/No Pass

**Transfer Credit:** CSU.

Research under the supervision of a faculty member intended for students who are eager for laboratory research experience. This laboratory class teaches experimental design and methods applied in biology, biotechnology, chemistry, and ecology, specifically geared toward life sciences. Methods such as those applied in cellular and molecular biology, 3D printing, ecological field studies, and data management will be studied and applied to original research projects. Skills learned include the ability to apply the processes of scientific inquiry 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 and ecology.