ART 085C  SCULPTURE: INTERMEDIATE  3.0 UNITS
Total Lecture: 36 hours, Total Lab: 72 hours
Prerequisite: ART 085B
Acceptable for credit: University of California, California State University
This course is an advanced course in sculpture which provides students with an opportunity to build on previous experience and explore new techniques. ART 085C focuses on different aspects of course content with supervised participatory experience. Materials Fee. Pass/No Pass Option.

ART 085D  SCULPTURE: ADVANCED  3.0 UNITS
Total Lecture: 36 hours, Total Lab: 72 hours
Prerequisite: ART 085C
Acceptable for credit: University of California, California State University
This course focuses on different aspects of sculpture providing students with supervised participatory experience in which artistic skills are enhanced by repetition and practice. Materials Fee. Pass/No Pass Option.

ART 088A  METAL SCULPTURE CASTING: INTRODUCTION  3.0 UNITS
Total Lecture: 36 hours, Total Lab: 72 hours
Advisory: ART 085A or ART 03B
Acceptable for credit: California State University
This course is a basic course in metal sculpture casting. Students develop skills in lost wax and lost styrofoam techniques with an emphasis on three-dimensional design. Materials Fee. Pass/No Pass Option.

ART 088B  METAL SCULPTURE CASTING: BEGINNING  3.0 UNITS
Total Lecture: 36 hours, Total Lab: 72 hours
Prerequisite: ART 088A
Acceptable for credit: California State University
This course is a study of the metal casting process which introduces new techniques and skill-building assignments, as well as development of a personal form. Materials Fee. Pass/No Pass Option.

ART 088C  METAL SCULPTURE CASTING: INTERMEDIATE  3.0 UNITS
Total Lecture: 36 hours, Total Lab: 72 hours
Prerequisite: ART 088B
Acceptable for credit: California State University
This course focuses on different aspects of metal sculpture casting. It provides students with supervised participatory experience in which artistic skills are enhanced by repetition and practice. Materials Fee. Pass/No Pass Option.

ART 088D  METAL SCULPTURE CASTING: ADVANCED  3.0 UNITS
Total Lecture: 36 hours, Total Lab: 72 hours
Prerequisite: ART 088C
Acceptable for credit: California State University
This course focuses on different aspects of metal sculpture casting. It provides students with supervised participatory experience in which artistic skills are enhanced by repetition and practice. Materials Fee. Pass/No Pass Option.

ART 091  DIRECTED STUDIES  1.0 UNITS
Total Lab: 54 hours
Students may apply for Directed Studies in any art or art history course currently offered, provided they have successfully completed the first year of the course applied for and obtain consent of the instructor. Directed Studies course unit credit to be determined by the instructor based on the student’s objectives. This course is approved for credit by exam. Pass/No Pass Option.

AST 001  ASTRONOMY  3.0 UNITS
Total Lecture: 54 hours
Acceptable for credit: University of California, California State University
This course is a descriptive astronomy lecture only course covering the entire panorama of the universe, including early human observations, the origin and structure of the solar system, and the properties, origin and evolution of stars, galaxies and cosmology. Grade only. CSUGE: B1; IGETC: 5A.

AST 003  ASTRONOMY WITH LAB  4.0 UNITS
Total Lecture: 54 hours, Total Lab: 54 hours
Advisory: MAT 903
Acceptable for credit: University of California, California State University
This course covers the entire panorama of the universe from the observations of the night sky to the origin and structure of the planets, stars, galaxies and the universe. The laboratory portion of the course includes practical experience with the methods of astronomy using computers and other equipment. Students cannot get credit for both AST 003 and AST 003H. Enrollment in the Honors Transfer Project is required. Grade only. CSUGE: B1, B3; IGETC: 5A, 5C.

AST 003H  ASTRONOMY WITH LAB – HONORS  4.0 UNITS
Total Lecture: 54 hours, Total Lab: 54 hours
Acceptable for credit: University of California, California State University
This course covers the entire panorama of the universe from the observations of the night sky to the origin and structure of the planets, stars, galaxies and the universe. The laboratory portion of the course includes practical experience with the methods of astronomy using computers and other equipment. Students cannot get credit for both AST 003 and AST 003H. Enrollment in the Honors Transfer Project is required. Grade only. CSUGE: B1, B3; IGETC: 5A, 5C.

AST 004  · ASTROBIOLOGY - LIFE IN THE UNIVERSE  3.0 UNITS
Total Lecture: 54 hours
Acceptable for Credit: California State University, University of California
This course applies the disciplines of astrophysics, biology, chemistry, geology, and planetary science to the possibility of life in the Universe outside of Earth. Students study the astronomical, geological and physical environmental factors that determine habitability. Students further consider the chemical basis for life, the origin and evolution of life on Earth, the constraints of life on Earth, and the markers of life that may be seen in other places in the solar system as well as outside of the solar system. Pass/No Pass Option.

BIO 001A  GENERAL BIOLOGY: CELLS  5.0 UNITS
Total Lecture: 54 hours, Total Lab: 108 hours
Prerequisite: CHM 001A OR CHM 001AH AND
Prerequisite: MAT 000C AND BIO 010, OR
Prerequisite: CHM 001A OR CHM 001AH AND
Prerequisite: MAT 000C AND BIO 011
Acceptable for credit: University of California, California State University
This course is a comprehensive introduction to cell and molecular biology, and is designed for students pursuing degrees in biology or professional programs such as medicine or pharmacy. Topics addressed in lecture and lab include biochemistry, the structure and function of prokaryotic and eukaryotic cells, cellular metabolism, and prokaryotic and eukaryotic gene expression and regulation. This course may be offered via distance learning. Grade only. C-ID # BIOL 130S, BIOL 135S. CSUGE: B2, B3; IGETC: 5B, 5C.
BIO 001AH  GENERAL BIOLOGY: CELLS – HONORS  5.0 UNITS
Total Lecture: 54 hours, Total Lab: 108 hours
Advisory: CHM 001B
Prerequisite: CHM 001A OR CHM 001AH AND CHM 003A OR CHM 003AH
Prerequisite: MAT 000C AND BIO 010, OR
Prerequisite: CHM 001A OR CHM 001AH AND CHM 003A OR CHM 003AH
Prerequisite: MAT 000C AND BIO 011
Acceptable for Credit: California State University
This honors course is a comprehensive introduction to cell and molecular biology, and is designed for students pursuing degrees in biology or professional programs such as medicine or pharmacy. Topics addressed in lecture and lab include biochemistry, the structure and function of prokaryotic and eukaryotic cells, cellular metabolism, and prokaryotic and eukaryotic gene expression and regulation. Students may not receive credit for both BIO 001A and BIO 001AH. Enrollment in the Honors Transfer Project is required. This course may be offered via distance learning. Grade only. CSUGE: B2, B3

BIO 001B  GENERAL BIOLOGY: ORGANISMS  5.0 UNITS
Total Lecture: 54 hours, Total Lab: 108 hours
Prerequisite: BIO 001A or BIO 001AH
Acceptable for credit: University of California, California State University
BIO 001B is an introduction to organisms and higher levels of biological organization. It 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. This course may be offered via distance learning. Grade only. C-ID # BIOL 130S, BIOL 135S. CSUGE: B2, B3; IGETC: 5B, 5C.

BIO 004  MICROBIOLOGY  5.0 UNITS
Total Lecture: 54 hours, Total Lab: 108 hours
Prerequisite: BIO 011 AND CHM 030A OR CHM 030AH
Prerequisite: BIO 011 AND CHM 060 OR CHM 060H
Prerequisite: BIO 001A AND CHM 001A OR CHM 001AH
Prerequisite: BIO 001A AND CHM 030A OR CHM 030AH
Prerequisite: BIO 001A AND CHM 060 OR CHM 060H
Prerequisite: BIO 010 AND BIO 010L AND CHM 001A OR CHM 001AH
Prerequisite: BIO 010 AND BIO 010L AND CHM 030A OR CHM 030AH
Prerequisite: BIO 010 AND BIO 010L AND CHM 060 OR CHM 060H
Prerequisite: BIO 022 AND CHM 001A OR CHM 001AH
Prerequisite: BIO 022 AND CHM 030A OR CHM 030AH
Prerequisite: BIO 022 AND CHM 060
Acceptable for credit: University of California, California State University
This survey course in microbiology is intended for nursing and other health-science majors. Lecture topics include the morphology and physiology of the major groups of microorganisms, bacterial and viral genetics, mechanisms of infection and disease, and the human immune response to infection. Laboratory activities focus on techniques employed in the culture and identification of bacteria of medical importance. This course may be offered via distance learning. Grade only. CSUGE: B2, B3; IGETC: 5B, 5C.

BIO 010  INTRODUCTION TO BIOLOGY  3.0 UNITS
Total Lecture: 54 hours
Acceptable for credit: University of California, California State University
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 BIO 010L, Introduction to Biology Lab. This course may also be offered via distance learning. Pass/No Pass Option. CSUGE: B2, IGETC: 5B.

BIO 010L  INTRODUCTION TO BIOLOGY LAB  1.0 UNIT
Total Lab: 54 hours
Prerequisite or Corequisite BIO 010
Acceptable for credit: University of California, California State University
This is an introductory general biology laboratory course designed for non-science majors. It reinforces biological principles presented in BIO 010 using laboratory and field exercises. Pass/No Pass Option. CSUGE: B3; IGETC: 5C.

BIO 011  HUMAN BIOLOGY  4.0 UNITS
Total Lecture: 54 hours, Total Lab: 54 hours
Acceptable for credit: University of California, California State University
This course is an introduction to biology, with an emphasis on human beings. The principles and concepts of biology are covered, including the scientific method, cells, genetics, evolution, ecology and basic anatomy and physiology of humans. This course may also be offered via distance learning. Pass/No Pass Option. CSUGE: B2, B3; IGETC: 5B, 5C.

BIO 012  EMERGING INFECTIOUS DISEASES  3.0 UNITS
Total Lecture: 54 hours
Acceptable for credit: University of California, California State University
This course is an introduction to infectious diseases and the microbes that cause them. Recent outbreaks of human diseases are explored, as well as interrelationships between infectious disease agents, human biology, and the environment. Clinical approaches and surveillance methods to detect, investigate, and monitor emerging pathogens and bioterrorism agents are discussed. This course may be offered via distance learning. Pass/No Pass Option. CSUGE: B2; IGETC: 5B.

BIO 014  INTRODUCTORY NEUROSCIENCE  3.0 UNITS
Total Lecture: 54 hours
Acceptable for credit: University of California, California State University
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. This course may be offered via distance learning. Pass/No Pass Option. CSUGE: B2; IGETC: 5B.

BIO 014H  INTRODUCTORY NEUROSCIENCE HONORS  3.0 UNITS
Total Lecture: 54 hours
Advisory: ENG 001 A AND REA 054 or
Advisory: 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  4.0 UNITS
Total Lecture: 54 hours, Total Lab: 54 hours
Acceptable for credit: University of California, California State University
Marine Biology is an introduction to ocean environments and marine life. General ecological principles, biodiversity and marine conservation issues are emphasized. Human activities that modify ocean ecosystems are examined. Discussions include overviews of characteristics and the inhabitants of a variety of marine ecosystems, such as: rocky and sandy shores, estuaries, kelp forests, coral reefs, continental shelves, the open ocean and the deep sea. This field-intensive course has seven required field trips in the San Francisco and Monterey bays, allowing students to investigate ocean life in our local marine environments. This four-unit science course with lab is open to students of all majors. Materials Fee. Pass/No Pass Option. CSUGE: B2, B3; IGETC: 5B, 5C.
BIO 017  GENETICS AND SOCIETY  3.0 UNITS
Total Lecture: 54 hours
Anti-Requisite: BIO 017H
Acceptable for credit: University of California, California State University
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. This course may be offered via distance learning. Pass/No Pass Option. CSUGE: B2; IGETC: 5B.

BIO 017H  GENETICS AND SOCIETY - HONORS  3.0 UNITS
Total Lecture: 54 hours
Anti-Requisite: BIO 017
Acceptable for credit: University of California, California State University
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 BIO 017 and BIO 017H. Enrollment in the Honors Transfer Project is required. This course may be offered via distance learning. Pass/No Pass Option. CSUGE: B2; IGETC: 5B.

BIO 019  OCEANS: LIFE IN THE SEA  3.0 UNITS
Total Lecture: 54 hours
Acceptable for credit: University of California, California State University
This non-majors course surveys the biological principles of marine science. It provides an overview of the ocean environment and examines the diversity of marine life, basic ecological principles and major marine ecosystems. The relationship between humans and the ocean is emphasized, with a focus on conservation biology and sustainability. Pass/No Pass Option. CSUGE: B2; IGETC: 5B.

BIO 022  ANATOMY AND PHYSIOLOGY FOR ALLIED HEALTH WORKERS  4.0 UNITS
Total Lecture: 54 hours, Total Lab: 54 hours
Advisory: MAT 903 or High School Algebra I, or equivalent
Acceptable for credit: California State University
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. Laboratory work includes dissection of preserved materials. BIO 022 is designed to meet the state board requirements for the vocational nursing and psychiatric technician programs. Grade only. CSUGE: B2, B3.

BIO 025  ENVIRONMENTAL BIOLOGY  3.0 UNITS
Total Lecture: 54 hours
Acceptable for credit: University of California, California State University
This course provides a scientific examination of the ecological interrelationships between humans and the environment. By understanding general ecological principles and major ecosystems on earth, we can evaluate how the human population impacts our planet by its growth and resource use, and what the implications are for ecosystems, biodiversity, as well as human health and welfare. Topics include: human population growth, food and water supplies, pollution, global climate change, energy use and sustainable development. Grade only. CSUGE: B2, E; IGETC: 5B.

BIO 030  TROPICAL ECOLOGY  3.0 UNITS
Total Lecture: 54 hours
Acceptable for credit: University of California, California State University
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 BIO 030L, Tropical Ecology Lab. This course may be offered via distance learning. Pass/No Pass Option. CSUGE: B2.

BIO 030L  TROPICAL ECOLOGY FIELD STUDIES  1.0 UNIT
Total Arranged Lab: 54 hours
Co-Requisite: BIO 030
Anti-Requisite: BIO 031L
Acceptable for credit: University of California, California State University
In this introductory level class, students carry out research methods that ecologists use to observe and investigate tropical ecosystems. This lab course may be taken with or without BIO 030, Tropical Ecology. Pass/No Pass Option.

BIO 031L  TROPICAL ECOLOGY FIELD STUDIES  1.0 UNIT
Total Arranged 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  4.0 UNITS
Total Lecture: 54 hours, Total Lab: 54 hours
Acceptable for credit: University of California, California State University
This field course explores the ecology of California flora and fauna through the study of plants and animals in terrestrial and aquatic ecosystems, with a primary focus on the San Francisco Bay region. The role of abiotic and biotic factors in communities is emphasized. Students examine the natural history of common plants and animals in different ecosystems, as well as their adaptations to the environment. Native American uses of flora and fauna are discussed. Laboratory and field investigations are conducted using the scientific method and environmental sampling techniques. Selected regional conservation issues and endangered species are discussed. Recommended for non-science majors to fulfill laboratory science requirement (4-units). Pass/No Pass Option. CSUGE: B2, B3; IGETC: 5B, 5C.

BIO 047  HUMAN ANATOMY  5.0 UNITS
Total Lecture: 54 hours, Total Lab: 108 hours
Advisory: Concurrent enrollment in BIO 047S is recommended for all students.
Prerequisite: BIO 010 AND BIO 010L OR
Prerequisite: BIO 011 OR
Prerequisite: BIO 022 OR
Prerequisite: BIO 001A OR
Prerequisite: BIO 001AH
Acceptable for credit: University of California, California State University
This course is an in-depth study of the microscopic and gross anatomical structure of the human body, including some corresponding pathology. It is designed to meet the prerequisite for programs in nursing, physical therapy, kinesiology, occupational therapy, etc. Laboratory work includes: examination of models, histological specimens, and animal specimens. Grade only. C-ID # BIOL 110B. CSUGE: B2, B3; IGETC: 5B, 5C.

BIO 048  HUMAN PHYSIOLOGY  5.0 UNITS
Total Lecture: 54 hours, Total Lab: 108 hours
Prerequisite: BIO 047 AND CHM 001A OR CHM 001AH OR
Prerequisite: BIO 047 AND CHM 030A OR
Prerequisite: BIO 047 AND CHM 060
Advisory: MAT 000C or High School Algebra II, or equivalent
Acceptable for credit: University of California, California State University
This course provides students with a basic understanding of the physiological mechanisms underlying body function in order to provide a foundation for more in-depth study and practical application. With an emphasis on cause and effect, details of the chemical and cellular basis for the workings of the nervous, muscular, cardiovascular, respiratory, renal and digestive systems are emphasized. Laboratory investigations of physiological processes familiarize students with scientific analysis and research techniques. Grade only. C-ID # BIOL 120B. CSUGE: B2; IGETC: 5B.
### BUSINESS (BUS)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 010</td>
<td>GLOBAL BUSINESS</td>
<td>3.0</td>
<td>This course provides a comprehensive overview of global business including international management, finance, law, global strategy and marketing. Emphasis is on the firm in the global competitive context, decisions to enter markets, how to compete in global markets, and how to develop and implement a global strategy. This course may also be offered via distance learning. Pass/No Pass Option.</td>
</tr>
<tr>
<td>BUS 011</td>
<td>INTERNATIONAL BUSINESS LAW</td>
<td>3.0</td>
<td>This course introduces the legal environment of international business, explains the basic principles of international business law and challenges students to consider legal implications of any international business strategy or transaction. This course may also be offered via distance learning. Pass/No Pass Option.</td>
</tr>
<tr>
<td>BUS 012</td>
<td>INTERNATIONAL FINANCIAL MANAGEMENT</td>
<td>3.0</td>
<td>This course will focus on the fundamental principles of corporate finance in today's global business environment. It introduces international finance with a focus on the important role of modern multinational corporations in global commerce. This class provides a wide range of managerial topics and emphasizes the most recent changes in the international environment. This course may also be offered via distance learning. Pass/No Pass Option.</td>
</tr>
<tr>
<td>BUS 021</td>
<td>INTRODUCTION TO BUSINESS COMPUTING</td>
<td>3.0</td>
<td>This course introduces computer hardware, software and technology applications in business. Information systems and the strategies for managing them change quickly, but the principles that guide both remain timeless. These principles form the backbone of this comprehensive survey of the field, designed for a student's first course in information technology. By presenting the details as well as the big picture, this course puts the lessons of managing information systems into an understandable context. The overall principle is that the right information, if it is delivered to the right person, in the right fashion, and at the right time, can improve and ensure organizational effectiveness and efficiency. This course may also be offered via distance learning. Pass/No Pass Option.</td>
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<tr>
<td>BUS 022</td>
<td>PRINCIPLES OF E-BUSINESS</td>
<td>3.0</td>
<td>This course provides an overview of how to use common software packages for business applications including word processing, spreadsheets, graphic presentations and how to use the Internet. This hands-on computer work will augment the basic concepts covered in BUS 021. This course may also be offered via distance learning. Pass/No Pass Option.</td>
</tr>
<tr>
<td>BUS 023</td>
<td>SOCIAL MEDIA MARKETING</td>
<td>3.0</td>
<td>Social media (such as Twitter, Facebook, blogging, etc.) are technologies that enable individuals to create, collaborate, and share messages with audiences of all sizes. Students will explore the possibilities and limitations of social media and will have hands-on experience with several forms of social media technology. This course may also be offered via distance learning. Pass/No Pass Option.</td>
</tr>
<tr>
<td>BUS 028A</td>
<td>BUSINESS LAW I</td>
<td>3.0</td>
<td>This course provides an introduction to the laws in the United States with an emphasis on matters relating to the conduct of business and commerce. Specific topics covered include an overview of law making, governmental regulation, dispute resolution, courts and the court system, court cases and procedures, agency relationships, employment law, business formation and contracts. This course may also be offered via distance learning. Pass/No Pass Option.</td>
</tr>
<tr>
<td>BUS 037</td>
<td>FUNDAMENTALS OF PROJECT MANAGEMENT</td>
<td>3.0</td>
<td>In this course, students will learn the secrets to successful project management: how to create a plan, implement it, monitor progress, correct as necessary and deliver as promised. This course prepares students with the necessary skills required to successfully manage a project and to prepare for the PMP® (Project Management Professional) or CAPM® (Certified Associate in Project Management) certification exams. This course may also be offered via distance learning. Pass/No Pass Option.</td>
</tr>
<tr>
<td>BUS 038</td>
<td>APPLIED PROJECT MANAGEMENT</td>
<td>3.0</td>
<td>In this course, students apply project management skills to real life project situations. Students also learn how to control project schedules, budgets, and scope using a variety of techniques. In-class exercises and case studies lead students to skills they can immediately apply to their own projects. This course may also be offered via distance learning. Pass/No Pass Option.</td>
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</tbody>
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