Biological Sciences

BIOL 100 INTRODUCTION TO THE LIFE SCIENCES

Study of the nature of the physical and chemical aspects of life, the concepts of cellular biology, life as it exists on earth today, plant and animal interrelationships and interdependencies, and the role of humans in the world of living things. *Grade Option (Letter Grade or Pass/No Pass). Degree Credit.*

Units: 3

Hours/semester: 48-54 Lecture; 96-108 Homework

AA/AS Degree Requirements: Area 5B

Transfer Credit: CSU, UC, (Cal-GETC Area 5B)

BIOL 130 HUMAN BIOLOGY

Study of biological principles using the human body as a model. Topics are structure and function of major organ systems and some common disorders. Heredity, evolution, and human ecological roles are also discussed. *Letter Grade Only. Degree Credit.*

Units: 3

Hours/semester: 48-54 Lecture; 96-108 Homework

AA/AS Degree Requirements: Area 5B

Transfer Credit: CSU, UC, (Cal-GETC Area 5B)

BIOL 132 HUMAN BIOLOGY LABORATORY

Laboratory exercises concerning mammalian anatomy and physiology and using the scientific method to analyze and interpret data and then draw appropriate conclusions. This course is a supplement to BIOL 130 Human Biology. *Letter Grade Only. Degree Credit.*

Units: 1

Hours/semester: 48-54 Lab

Prerequisites: Completion of, or concurrent enrollment in BIOL 130

AA/AS Degree Requirements: Area 5C*

Transfer Credit: CSU, UC, (Cal-GETC Area 5C*)

BIOL 133 EMERGING INFECTIOUS DISEASES

An exploration of the biology of infectious diseases through the lens of the scientific method and core principles of life science. Students investigate microbial pathogens and their interactions with hosts through observation, hypothesis testing, experimentation, and data analysis. Concepts from microbiology, cell biology, human biology, and immunology are applied to explain how infections emerge, develop, adapt, and spread. Case studies such as HIV/AIDS and COVID-19 illustrate how genetic variation, antimicrobial resistance, climate change, and globalization drive the evolution and reemergence of infectious diseases. The course cultivates scientific literacy, evidence-based reasoning, and an understanding of the power and limitations of science in addressing global health challenges. *Letter Grade Only. Degree Credit.*

Units: 3

Hours/semester: 48-54 Lecture; 96-108 Homework

AA/AS Degree Requirements: Area 5B

Transfer Credit: CSU, UC

BIOL 225 BIOLOGY OF ORGANISMS

Designed for biology majors, this course focuses on the form and physiology of plants and animals, organism interactions and ecology, and how populations change over time. The tree of life is used an organizing theme. Key topics include plant and animal form and function, plant and animal physiology, homeostasis, food chains, food webs, population dynamics, natural selection, population genetics, and micro- and macroevolution. *Letter Grade Only. Degree Credit.*

Units: 5

Hours/semester: 48-54 Lecture; 96-108 Lab; 96-108 Homework

Prerequisites: Successful completion of Intermediate Algebra or equivalent, or placement by other measures as applicable.

AA/AS Degree Requirements: Area 5B

Transfer Credit: CSU, UC, (Cal-GETC Area 5B)

C-ID: BIOL 140; BIOL 135 S (both BIOL 225 + 230)

BIOL 230 CELL AND MOLECULAR BIOLOGY

This course is designed for biology majors and is an introduction to life functions at the cellular and molecular levels. Students learn about cellular structure and the macromolecular architecture of the cell, the functional processes of cellular energetics, metabolic regulation, photochemical activities, reproduction, molecular and Mendelian genetics, regulation of gene expression, and methods of recombinant DNA technology. *Letter Grade Only. Degree Credit.*

Units: 5

Hours/semester: 48-54 Lecture; 96-108 Lab; 96-108 Homework

Prerequisites: CHEM 210 and BIOL 210, or 215 (offered at Skyline College), or 220 (offered at College of San Mateo), or 225.

AA/AS Degree Requirements: Area 5B

Transfer Credit: CSU, UC, (Cal-GETC Area 5B)

C-ID: BIOL 190; BIOL 135 S (both BIOL 225 + 230)

BIOL 240 GENERAL MICROBIOLOGY

This course introduces microorganisms in nature: their cellular and molecular structure and functions, metabolisms, genetics, gene regulation, and techniques and procedures used by microbiologists. Emphasis is on microbes that play important roles in human daily life, especially those that cause disease and impact the environment. Laboratory emphasizes isolation, cultivation, and identification of bacteria. *Letter Grade Only. Degree Credit.*

Units: 4

Hours/semester: 48-54 Lecture; 48-54 Lab; 96-108 Homework

Prerequisites: BIOL 110 or BIOL 130 and BIOL 132 or BIOL 210 or 215 (offered at Skyline College), or 220 (offered at College of San Mateo) or BIOL 225 or BIOL 230 or BIOL 250 or BIOL 260 and CHEM 192 or CHEM 210 or CHEM 410 or equivalent (any college level biology course with a lab and any college level chemistry course with a lab).

AA/AS Degree Requirements: Area 5B

Transfer Credit: CSU, UC, (Cal-GETC Area 5B)

BIOL 250 HUMAN ANATOMY

Structural organization of the human body: gross and microscopic structure of the integumentary, skeletal, muscular, nervous, sensory, endocrine, cardiovascular, lymphatic, respiratory, digestive, excretory, and reproductive systems, from cellular to organ system levels of organization. This course is primarily intended for nursing, allied health, kinesiology, and other health related majors. *Letter Grade Only. Degree Credit.*

Units: 4

Hours/semester: 48-54 Lecture; 48-54 Lab; 96-108 Homework

Prerequisites: BIOL 100 or BIOL 101 (offered at Skyline) or BIOL 110 or BIOL 130

AA/AS Degree Requirements: Area 5B

Transfer Credit: CSU, UC, (Cal-GETC Area 5B)

C-ID: BIOL 110 B

BIOL 260 HUMAN PHYSIOLOGY

Study of the physiological principles, function, integration and homeostasis of the human body at the cellular, tissue, organ, organ system and organism level: integumentary system, bone, skeletal, smooth and cardiac muscles, nervous system, sensory organs, cardiovascular system, lymphatic and immune systems, respiratory system, urinary system, digestive system, endocrine system, and reproductive system. This course is primarily intended for Nursing, Allied Health, Kinesiology, and other health related majors. *Letter Grade Only. Degree Credit.*

Units: 5

Hours/semester: 48-54 Lecture; 96-108 Lab; 96-108 Homework

Prerequisites: BIOL 250 and CHEM 192 or CHEM 210 or CHEM 410

AA/AS Degree Requirements: Area 5B

Transfer Credit: CSU, UC, (Cal-GETC Area 5B)

C-ID: BIOL 120 B

BIOL 310 NUTRITION

Comprehensive introduction to scientific principles of nutrition and the interrelationships of metabolism; nutrient functions, structure and food sources; health consequences of nutrient excesses, deficiencies and diet related chronic diseases. Emphasis is placed on evaluating the nutrient content of foods, applying information to personal diet, and using reference tools. *Letter Grade Only. Degree Credit.*

Units: 3

Hours/semester: 48-54 Lecture; 96-108 Homework

AA/AS Degree Requirements: Area 7B

Transfer Credit: CSU, UC

C-ID: NUTR 110

BIOL 695 INDEPENDENT STUDY

Designed for students who are interested in furthering their knowledge via self-paced, individualized instruction provided in selected areas or directed study to be arranged with instructor and approved by the division dean using the Independent Study Form. Varying modes of instruction can be used -- laboratory, research, skill development, etc. For each unit earned, students are required to devote three hours per week throughout the semester. Students may take only one Independent Study course within a given discipline. *Grade Option (Letter Grade or Pass/No Pass). Degree Credit.*

Units: 0.5 - 3

Hours/semester: 24-162 Lab

Transfer Credit: CSU

BIOL C1000 INTRODUCTION TO BIOLOGY WITH LAB

This combined lecture and laboratory course provides the non-biology major with an introduction to living things and their environment. Students use experimentation and investigation to develop important critical thinking skills. Students learn about the process of science, the building blocks of life, the role and regulation of DNA, how populations change over time, the movement of energy within and between life forms, and how species interact with each other and their surroundings. By the end of the course, students will be able to apply an understanding of biological concepts to current issues and their impacts on society. (Formerly BIOL 110) *Letter Grade Only. Degree Credit.*

Units: 4

Hours/semester: 48-54 Lecture; 48-54 Lab; 96-108 Homework

AA/AS Degree Requirements: Area 5B

Transfer Credit: CSU, UC, (Cal-GETC Area 5B)