

BIOLOGICAL SCIENCES

Biological Sciences includes the following disciplines: Biology, Biomedical Sciences (anatomy, physiology, microbiology, nutrition), Botany (study of plants), and Zoology (study of animals).

The Biological Sciences Department offers a diverse set of courses and degrees that prepare students for advancement in the areas of cellular and molecular biology, ecology and evolution, health science, environmental studies, natural history, and marine science. Additionally, numerous courses designed for non-majors provide opportunities to fulfill Natural Science requirements while developing a foundational understanding of the complexity and diversity of organisms, as well as how humans and other species function as individuals and as components of ecosystems.

The department's five associate degrees are designed to provide the knowledge, skills, and experience needed for successful transfer to a four-year institution or professional program. The Biological Sciences Associate in Arts (AA) and Associate in Science for Transfer (AS-T) degrees provide preparation for job opportunities and transfer in areas such as Biochemistry, Cellular and Molecular Biology, Ecology, Evolutionary Biology, Marine Biology, Pharmacology, and Pre-Medicine. The Natural History AA Degree provides preparation for transfer in areas such as Natural History and Fisheries & Wildlife Management, and can be completed fully online. The Liberal Arts AA: Bio-Medical Sciences Emphasis and the Nutrition and Dietetics AS-T degrees offer a strong foundation for students interested in pursuing a career in the health sciences.

Students can also pursue Departmental Awards in the areas of Biomedical Sciences, Marine Sciences, and Natural History.

Programs of Study

Associate Degrees for Transfer

- Biological Sciences, Associate in Science for Transfer (AS-T) (<https://catalog.sbccc.edu/academic-departments/biological-sciences/biological-sciences-as-t/>)
- Nutrition and Dietetics, Associate in Science for Transfer (AS-T) (<https://catalog.sbccc.edu/academic-departments/biological-sciences/nutrition-dietetics-as-t/>)

Associate Degrees

- Biological Sciences, Associate of Arts (AA) (<https://catalog.sbccc.edu/academic-departments/biological-sciences/biological-sciences-aa/>)
- Liberal Arts, Associate of Arts (AA): Bio-Medical Sciences Emphasis (<https://catalog.sbccc.edu/academic-departments/biological-sciences/liberal-arts-aa-bio-medical-sciences-emphasis/>)
- Natural History, Associate of Science (AS) (<https://catalog.sbccc.edu/academic-departments/biological-sciences/natural-history-as/>)

Department Awards

- Bio-Medical Sciences, Departmental Award (D) (<https://catalog.sbccc.edu/academic-departments/biological-sciences/bio-medical-sciences-departmental-award/>)
- Marine Science, Departmental Award (D) (<https://catalog.sbccc.edu/academic-departments/biological-sciences/marine-science-departmental-award/>)

- Natural History, Departmental Award (D) (<https://catalog.sbccc.edu/academic-departments/biological-sciences/natural-history-departmental-award/>)

Credit Courses

Students looking to fulfill a Natural Sciences degree or transfer requirement can choose from courses in Biology, Bio-Medical Sciences, Botany, and Zoology. There are a wide variety of courses offered to help students meet their goals.

Biology (BIOL)

BIOL 100 Concepts Of Biology (4 Units)

Hours: 108 (54 lecture, 54 lab)

Basic concepts of biology. Designed for non-biological sciences majors with no prior general biology course. Satisfies SBCC General Education requirement in Natural Sciences.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: No credit for BIOL 100 if taken after BIOL 101, 102 or 103.

BIOL 101 Plant Biology (4 Units)

Prerequisites: MATH 107 or MATH 110C or MATH 137C or SS 110C or equivalent based on SBCC's Assessment Center placement via multiple measures.

Course Advisories: Eligibility for ENGL C1000 or ENGL C1000E or ENGL C1000H.

Hours: 108 (54 lecture, 54 lab)

Principles of biology, with emphasis on major plant groups. Anatomy, physiology, evolution, and diversity of the archaea, bacteria, algae, fungi and plantae. Required for the Biological Sciences major. Satisfies SBCC General Education requirement in Natural Sciences.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

C-ID: BIOL 135S, BIOL 140, BIOL 155.

BIOL 102 Animal Biology (5 Units)

Prerequisites: MATH 110C or MATH 137C or MATH 107 or SS 110C or equivalent based on SBCC's Assessment Center placement via multiple measures.

Course Advisories: BIOL 101, ENGL C1000 or ENGL C1000E or ENGL C1000H.

Hours: 162 (54 lecture, 108 lab)

Principles of animal taxonomy, evolution, population and community ecology; protist and animal diversity and adaptations; emphasis on vertebrate anatomy and physiology. Required for the Biological Sciences major.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

C-ID: BIOL 135S, BIOL 140, BIOL 150.

BIOL 103 Cell and Molecular Biology (5 Units)

Prerequisites: CHEM 155 or CHEM 104, MATH 107 or MATH 110C or MATH 137C or SS 110C or equivalent based on SBCC's Assessment Center placement via multiple measures.

Course Advisories: ENGL C1000 or ENGL C1000E or ENGL C1000H.

Hours: 162 (54 lecture, 108 lab)

Cell structure and function: molecular architecture, reproduction and growth; mechanisms of genetics; intercellular communication; cell and organ system physiology; life's origin. Study scientific literature with instruction in critical thinking, composition and logical analyses of ideas and experiments. Required for Biological Sciences majors. Satisfies SBCC General Education requirement in Communication and Analytical Thinking.

SBCC General Education: SBCCGE Area A, SBCCGE Area D2

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 103 maximum credit, 5 units.

C-ID: BIOL 135S, BIOL 190.

BIOL 103A Cell and Molecular Biology (3.5 Units)

Prerequisites: CHEM 155 or CHEM 104 MATH 107 or MATH 110C or MATH 137 or MATH 149 or SS 110C or equivalent based on SBCC's Assessment Center placement via multiple measure.

Hours: 63 (63 lecture)

Cell structure, function and molecular mechanisms of: metabolism, molecular transport, gene expression, mutations and repair, cell signaling, and cell division and death. Introduction to standard and novel laboratory techniques, and critical analysis of scientific literature and data. Required for Biological Sciences majors.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, CSU Transferable

BIOL 103L Cell and Molecular Biology Laboratory (1.5 Unit)

Corequisites: BIOL 103A.

Hours: 81 (81 lab)

Prerequisite or Investigations of molecular properties, gene regulation and genetic mutations using molecular biological and biochemical approaches. Use of traditional and modern laboratory techniques including, but not limited to DNA and protein extraction, Western blot, Molecular Cloning, Genome editing and PCR. Development and testing of hypotheses, critical analysis and interpretation of data, and composition of formal lab reports in independent and collaborative settings. Required for Biological Sciences majors.

Transfer Information: Cal-GETC Area 5C, CSUGE Area B3, IGETC Area 5C, CSU Transferable

BIOL 110 Natural Science (3 Units)

Hours: 54 (54 lecture)

Physical and chemical principles underlying biological architecture and function. In combination with BIOL 141, BIOL 110 satisfies General Education requirement in Natural Sciences.

SBCC General Education: SBCCGE Area A, SBCCGE Area A Lecture

Transfer Information: Cal-GETC Area 5A, Cal-GETC Area 5B, CSUGE Area B1, CSUGE Area B2, IGETC Area 5A, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 110 and 110H combined: maximum credit, one course.

BIOL 112 Evolution and Adaptation (3 Units)

Hours: 54 (54 lecture)

Principles of biological evolution, diversity of life on earth, and a survey of living and extinct organisms. Investigates theories of life's origin, modes of speciation and adaptations of dominant life forms through the ages.

SBCC General Education: SBCCGE Area A Lecture

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

BIOL 116 Biological Illustration (4 Units)

Course Advisories: ART 120.

Hours: 108 (54 lecture, 54 lab)

Traditional and contemporary techniques of scientific illustration of biological subjects for technical and medical print and electronic publications.

Transfer Information: CSU Transferable

BIOL 118 Nature Photography (3 Units)

Hours: 54 (54 lecture)

Photography of biological subjects. Camera, light and the special methods of field and wildlife photography.

Transfer Information: CSU Transferable

BIOL 120 Natural History (4 Units)

Hours: 108 (54 lecture, 54 lab)

Survey of the natural environment through studies of Earth's ecosystems, with emphasis on the plant and animal inhabitants and the influences of cosmic, geological and meteorological phenomena. Weekly field trips.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

BIOL 122 Ecology (3 Units)

Hours: 54 (54 lecture)

Organisms and populations as integrated elements of communities and ecosystems. Covers population structure; growth and evolution; relationships between species including competition, predation and coevolution; community structure and development; biodiversity; and biogeography.

SBCC General Education: SBCCGE Area A Lecture

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

BIOL 123 Ecology Laboratory (1 Unit)

Corequisites: BIOL 122.

Hours: 54 (54 lab)

Laboratory and field investigations of ecological principles.

SBCC General Education: SBCCGE Area A Lab

Transfer Information: Cal-GETC Area 5C, CSUGE Area B3, IGETC Area 5C, CSU Transferable, UC Transferable

BIOL 124 Biological Oceanography (4 Units)

Hours: 108 (54 lecture, 54 lab)

Relationships between marine plants and animals and physical characteristics of Earth's oceans. Emphasis on marine organisms found in the open sea, their characteristics and ecological relationships. Biological sampling techniques and physical measurements studied in laboratory and at sea.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 124 combined with EARTH 151: maximum credit, one course.

BIOL 125 Marine Biology (4 Units)

Hours: 108 (54 lecture, 54 lab)

Study of marine plants and animals, with emphasis on local organisms and their ecological adaptations. Laboratory includes visits to local coastal and marine ecosystems.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 125 and 126 combined: maximum credit, one course.

BIOL 126 Aquatic Ecosystems (3 Units)

Hours: 54 (54 lecture)

Diversity of life associated with marine and freshwater aquatic ecosystems; ecological relationships and adaptations to life in water.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 125 and 126 combined: maximum credit, one course.

BIOL 130 Methods in Field Biology (3 Units)

Hours: 90 (36 lecture, 54 lab)

Through weekly field trips and 2-3 weekend field experiences, students study flora and fauna of California using current biological and ecological field research methods, collect and analyze data, demonstrate leadership and group work skills, and write and present a research proposal.

Students must be able to hike in rough terrain and carry bulky equipment.

Transfer Information: CSU Transferable

BIOL 133 Ecology of Morro Bay Area (1 Unit)

Hours: 36 (9 lecture, 27 lab)

Field course focusing on organisms and ecology of California coastal ecosystems (e.g., mudflats, salt marsh, rocky outer coast). Weekend, overnight field trip required.

Transfer Information: CSU Transferable

BIOL 140 Principles of Biology (3 Units)

Hours: 54 (54 lecture)

Basic principles of cells, genetics, evolution, biodiversity and ecology. Designed for Natural History majors. Satisfies Natural Science General Education requirement when combined with Bio 141.

SBCC General Education: SBCCGE Area A Lecture

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: No credit for BIOL 140 if taken after BIOL 100, 101, 102 or 103.

BIOL 141 Biology Laboratory (2 Units)

Corequisites: BIOL 110 or BIOL 112 or BIOL 140.

Hours: 72 (18 lecture, 54 lab)

Prerequisite or Laboratory investigation of biological principles and techniques of investigation.

SBCC General Education: SBCCGE Area A Lab

Transfer Information: Cal-GETC Area 5C, CSUGE Area B3, IGETC Area 5C, CSU Transferable, UC Transferable

UC Transfer Limit: No credit for BIOL 141 unless taken after or concurrently with BIOL 112 or 140.

BIOL 142 Marine Science (3 Units)

Hours: 54 (54 lecture)

Introduction to physical oceanography and marine biology. Exploration of ocean ecosystems and organisms including tropics, poles, temperate and deep-sea regions. Marine environmental issues and solutions.

Transfer Information: CSUGE Area B1, CSUGE Area B2, SBCCGE Area 5, CSU Transferable, UC Transferable

BIOL 144 Biogeography (3 Units)

Hours: 54 (54 lecture)

Survey of the history, distribution and diversity of life and the methods by which biodiversity is defined and measured.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

BIOL 150 Biodiversity (3 Units)

Hours: 54 (54 lecture)

Broad introduction to life on Earth including diversity, adaptations and evolutionary history; principles of ecology and evolution; and examination of how life evolved and the tree of life is constructed using fossil evidence, comparative morphology and genomics.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

BIOL 161 DNA and Society (3 Units)

Hours: 54 (54 lecture)

Introduction to DNA structures and functions, heredity, genetics, biotechnology, cloning, genetically modified organisms, and stem cells from a biological perspective; relevant ethical issues and implications for society and the individual will be explored. Satisfies SBCC General Education requirement in Natural Sciences.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

BIOL 171 Human Evolution (3 Units)

Hours: 54 (54 lecture)

Evolution of Humans from early primate ancestors to modern humans including cultural, genetic and anatomical changes.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: BIOL 171, ANTH 101, 101H combined: maximum credit, one course.

BIOL 172 Symbiosis (3 Units)

Hours: 54 (54 lecture)

Origin and nature of biological partnerships. Symbiotic relations from microbial landscapes to global ecology. Emphasis on ecological, behavioral and chemical exchanges between organisms and ecosystems.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

BIOL 291 Seminars in Biology (2 Units)

Hours: 36 (36 lecture)

Topics of current interest in the Biological Sciences are presented in seminar format by invited researchers and students enrolled in the course. Emphasis on research and presentation skills, including analysis of primary literature.

Transfer Information: CSU Transferable

BIOL 295 Internship In Biology (2-4 Units)

Limitations on Enrollment: Other. Completion of two courses (in applicable discipline) at SBCC prior to enrolling in an Internship course.

Hours: 210 (210 lab)

Structured, on-the-job experience in a field directly related to the student's area of interest in the biological sciences.

Transfer Information: CSU Transferable

BIOL 298 Independent Reading in Biology (1-4 Units)

Hours: 192 (192 lab)

Independent literature search and/or reading of material on a topic in biology. A final report, including an annotated bibliography, is required.

Transfer Information: CSU Transferable

BIOL 299 Independent Research In Biology (1-4 Units)

Limitations on Enrollment: Student must have completed 12 units at SBCC with a G.P.A. of 2.5 and a minimum of 6 units with a G.P.A. of 3.0 in the Biological Sciences Department.

Hours: 192 (192 lab)

Independent, systematic research investigation of a problem in biology. A final report on research conducted is required. May be taken multiple times for credit. Course restricted to 3 repetitions

Transfer Information: CSU Transferable

Bio-Medical Sciences (BMS)**BMS 100 The Human Body (4 Units)**

Course Advisories: One semester High School Biology.

Hours: 108 (54 lecture, 54 lab)

Structure and function of the human body. Non-technical introduction to anatomy, physiology, exercise, fitness and nutrition. Laboratory experiments in human physiology; study of human anatomical materials. Satisfies SBCC General Education requirement in Natural Sciences, and Anatomy and Physiology requirements for SBCC LVN program. Does not satisfy requirements for ADN majors.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: No credit for BMS 100 if taken after BMS 107 or 108; BMS 100, 107, 108, and 146 combined: maximum credit, two courses.

BMS 107 Human Anatomy (4 Units)

Hours: 108 (54 lecture, 54 lab)

Structure of the human body. Laboratory includes study of a human anatomical specimen and comparative anatomy. Transferable to all four-year institutions, including nursing schools.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: BMS 100, 107, 108 and 146 combined: maximum credit, two courses.

C-ID: BIOL 110B.

BMS 107D Human Anatomy Discussion (1 Unit)

Corequisites: BMS 107.

Hours: 18 (18 lecture)

Concurrent Discussion and problem solving course designed for students currently enrolled in BMS 107.

Transfer Information: CSU Transferable, UC Transferable

BMS 108 Human Physiology (4 Units)

Course Advisories: BMS 107, CHEM 101 or CHEM 104.

Hours: 108 (54 lecture, 54 lab)

Functions of the human body. Laboratory emphasizes recording physiological data from each student. Transferable to all four-year institutions, including nursing schools. Satisfies SBCC General Education requirement in Natural Sciences.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: BMS 100, 107, 108, and 146 combined: maximum credit, two courses.

C-ID: BIOL 120B.

BMS 108D Human Physiology Discussion (1 Unit)

Corequisites: BMS 108.

Hours: 18 (18 lecture)

Concurrent Discussion and problem-solving course designed for students currently enrolled in BMS 108.

Transfer Information: CSU Transferable, UC Transferable

BMS 110 Physiology of Exercise (3 Units)

Course Advisories: BMS 107 and BMS 108.

Hours: 54 (54 lecture)

This course provides an in-depth analysis into the effects of acute and chronic physical activity on the structure and function of the human body. Specific emphasis on the chemistry, anatomy, physiology, and physical principles of exercise will be provided. The course will also include analyses of cellular respiration, biomechanics, the musculoskeletal system, body composition, ergogenic aids, athletic performance and other variables influencing exercise training, performance, and adaptations.

Transfer Information: CSU Transferable, UC Transferable

BMS 110L Physiology of Exercise Laboratory (1 Unit)

Corequisites: BMS 110.

Hours: 54 (54 lab)

Prerequisite or Laboratory investigations of the effects of acute and chronic physical activity on the structure and function of the human body utilizing various fitness assessment methodologies.

Transfer Information: CSU Transferable, UC Transferable

BMS 118 Human Microanatomy (3 Units)

Hours: 54 (54 lecture)

Functional histology of the human body. Cell structure and function; architecture, control and integration of cells in tissues of all major organs.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, CSU Transferable, UC Transferable

BMS 119A Human Dissection: Head and Neck (1 Unit)

Prerequisites: BMS 107.

Hours: 54 (54 lab)

Directed dissection of the head and neck of a cadaver.

Transfer Information: CSU Transferable, UC Transferable

BMS 119B Human Dissection: Appendages (1 Unit)

Prerequisites: BMS 1119A.

Hours: 54 (54 lab)

Directed dissection of the appendages of a cadaver.

Transfer Information: CSU Transferable, UC Transferable

BMS 119C Human Dissection: Torso (1 Unit)

Prerequisites: BMS 119B.

Hours: 54 (54 lab)

Directed dissection of the external and internal structures of the torso of a cadaver.

Transfer Information: CSU Transferable, UC Transferable

BMS 127 Medical Microbiology (4 Units)

Prerequisites: CHEM 101 or one year of high school chemistry or CHEM 104 or CHEM 155.

Course Advisories: BMS 108, BIOL 100.

Hours: 108 (54 lecture, 54 lab)

Surveys the microorganisms that contribute to human health and human disease. Biology of bacteria, viruses, fungi and a variety of Eukaryotic organisms will be investigated; emphases includes the structural and metabolic diversity of microorganisms, and the molecular and cellular basis of host-microbe interactions.

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

BMS 128 Human Nutrition (3 Units)

Hours: 54 (54 lecture)

Nutritional needs of the human body. Studies individual, local, national and world nutritional efforts.

Transfer Information: CSUGE Area E, SBCCGE Area 7, CSU Transferable, UC Transferable

C-ID: NUTR 110.

BMS 128L Human Nutrition Laboratory (1 Unit)

Corequisites: BMS 128.

Hours: 54 (54 lab)

Laboratory investigations of human nutrition; nutritional analysis of food; and guidelines for prevention of chronic diseases through diet.

Transfer Information: CSU Transferable, UC Transferable

BMS 136 Biology Of Human Sexuality (3 Units)

Hours: 54 (54 lecture)

Biological aspects of human sexuality. Fundamental principles and current research focused on the anatomy and physiology of reproductive systems, hormonal control of reproduction, diversity of sexual responses, sexual arousal, basic genetics and heredity, early human development, pregnancy, birth, causes and treatments of infertility, sexually transmitted infections, contraception, age-related changes in sexual function and behavior, sexual dysfunction and comparative sexual behaviors.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, CSUGE Area E, IGETC Area 5B, SBCCGE Area 5, SBCCGE Area 7, CSU Transferable, UC Transferable

BMS 146 Human Form and Function (3 Units)

Course Advisories: CHEM 101.

Hours: 54 (54 lecture)

Descriptive introduction to the structure and function of the human body.

SBCC General Education: SBCCGE Area A Lecture

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: BMS 100, 107, 108, and 146 combined: maximum credit, two courses.

BMS 146L Human Form and Function Laboratory (1 Unit)

Corequisites: BMS 146.

Hours: 54 (54 lab)

Prerequisite or Laboratory exercises covering the structure and function of the human body for non-clinical students entering the HIT/CIM programs. Along with BMS 146 it satisfies SBCC General Education requirement in Natural Sciences. Does not satisfy requirements for SBCC LVN or ADN majors.

SBCC General Education: SBCCGE Area A Lab

Transfer Information: CSUGE Area B3, CSU Transferable, UC Transferable

BMS 157 General Microbiology (4 Units)

Prerequisites: CHEM 101 or one year of high school chemistry with a minimum grade of C or CHEM 104 or CHEM 155.

Course Advisories: BIOL 100, BMS 108.

Hours: 108 (54 lecture, 54 lab)

Surveys the biology and ecology of various microbiological taxa: bacteria, archaea, viruses, fungi, protists, and microscopic animals. Emphasis placed on their symbiotic roles in nature, as well as on their evolution, taxonomy, metabolism, and genetics. Associated biotechnological techniques and industrial applications are explored.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

Botany (BOT)**BOT 100 Concepts of Botany (4 Units)**

Hours: 108 (54 lecture, 54 lab)

Plant structure and function; the role of plants in the biosphere and society. Laboratory includes field studies. Designed for non-Biological Sciences majors with no prior general botany course.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: No credit for BOT 100 if taken after BOT 121; BOT 100, 121, and 122 combined: maximum credit, two courses.

BOT 121 Plant Diversity (4 Units)

Hours: 108 (54 lecture, 54 lab)

Plant diversity, adaptations and evolutionary history; principles of ecology and evolution.

SBCC General Education: SBCCGE Area A

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: BOT 100, 121, and 122 combined: maximum credit, two courses.

BOT 122 Flowering Plant Identification (3 Units)

Hours: 90 (36 lecture, 54 lab)

Botanical classification, methods of identification, and recognition of important California plant species and families.

Transfer Information: Cal-GETC Area 5B, Cal-GETC Area 5C, CSUGE Area B2, CSUGE Area B3, IGETC Area 5B, IGETC Area 5C, SBCCGE Area 5, CSU Transferable, UC Transferable

UC Transfer Limit: BOT 100, 121 and 122 combined: maximum credit, two courses.

C-ID: AG-EH 112L.

BOT 123 Field Botany (3 Units)

Hours: 90 (36 lecture, 54 lab)

Flora and major plant communities of California. Evolution via natural selection (i.e., plant adaptations and selective pressures), geographic distribution of plant communities, indigenous uses, field identification, and biological conservation. Field lectures, laboratories, and camping. Multiple field trips varying from one to four days in length.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

BOT 125 Fire Ecology (4 Units)

Hours: 108 (54 lecture, 54 lab)

The evolution and ecology of fire in CA plant communities; identification of dominant plants and their adaptations; the scientific method and conducting experiments in the lab and field; the plant kingdom; plant cells, anatomy, and physiology; mean fire return intervals (MFRI); fire behavior and the influences of weather, climate, human activities, and fuel; scientific surveys of plant communities and fuel loads; fire prevention and fire-fighting tools and practices and their relationship to ecology and natural fire regimes.

Transfer Information: CSU Transferable

Zoology (ZOOL)

ZOOL 110 Animal Physiology (3 Units)

Hours: 54 (54 lecture)

How animals work. Animal physiological systems, perception of and responses to external stimuli, integration of activities, maintenance of the internal environment, locomotion and reproduction.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

ZOOL 122 Animal Diversity (3 Units)

Hours: 54 (54 lecture)

Introduction to zoology, including animal diversity, anatomy and physiology, adaptations and evolution. Principles of ecology are also covered.

SBCC General Education: SBCCGE Area A Lecture

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

ZOOL 123 Animal Diversity Laboratory (1 Unit)

Corequisites: ZOOL 122.

Hours: 54 (54 lab)

Laboratory and field investigations of animals. Covers animal diversity, anatomy and physiology, and principles of ecology and evolution.

SBCC General Education: SBCCGE Area A Lab

Transfer Information: Cal-GETC Area 5C, CSUGE Area B3, IGETC Area 5C, CSU Transferable, UC Transferable

ZOOL 124 Insect Biology (3 Units)

Hours: 54 (54 lecture)

Introduction to anatomy, physiology, ecology, behavior and diversity of insects and other terrestrial arthropods.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

ZOOL 137 Ornithology (3 Units)

Hours: 54 (54 lecture)

Systematics, distribution, physiology, behavior and ecology of birds.

Emphasis on diversity, functional morphology and evolutionary history.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable

ZOOL 138 Biology of Birds (1.5 Unit)

Hours: 45 (18 lecture, 27 lab)

Eight-week short course. Anatomy, physiology, evolution and behavior of birds. Field trips are timed to coincide with migratory periods and emphasize identification and classification.

Transfer Information: CSU Transferable, UC Transferable

ZOOL 140 Animal Behavior (3 Units)

Hours: 54 (54 lecture)

Introduction to animal behavior. An evolutionary examination of invertebrate and vertebrate behavior, including innate and learned behavior, foraging and self-defense strategies, sexual selection, mating systems and social behavior.

Transfer Information: Cal-GETC Area 5B, CSUGE Area B2, IGETC Area 5B, SBCCGE Area 5, CSU Transferable, UC Transferable