BIOLOGY (BIOL)

BIOL A020 **1 Unit (18 lecture hours)**
Making Connections in Cell and Molecular Biology
Co-requisite(s): BIOL A180.

Grading Mode: Pass/No Pass
Not Transferable.

This course complements Biology A180 lecture and laboratory and will provide essential additional opportunities for students to develop study skills in cell and molecular biology. The curriculum is designed to improve critical thinking, content application, and science writing. Opportunities to work in a collaborative environment will also be provided in order to reinforce this aspect of scientific inquiry. Speakers from and/or field trips to visit laboratories from transfer institutions may be provided to allow students to see direct application of the skill set promoted in Biology A180. This course will be the equivalent to the one hour study skills/ discussion section that most four-year universities offer. Offered on a pass-no pass basis only. NOT DEGREE APPLICABLE.

BIOL A100 **4 Units (54 lecture hours; 54 lab hours)**
Principles of Biology
Grading Mode: Standard Letter
Transfer Credit: CSU; UC: Credit Limitation: No credit for BIOL A100 or BIOL A100H if taken after BIOL A180.

A general study of life processes with emphasis on biological chemistry, cells, molecular biology, heredity, ecology, evolution, and the diversity of life. Suitable as a general education elective for the non-science major. This course may also be offered online.

BIOL A100H **4 Units (54 lecture hours; 54 lab hours)**
Principles of Biology Honors
Grading Mode: Standard Letter
Transfer Credit: CSU; UC: Credit Limitation: No credit for BIOL A100 or BIOL A100H if taken after BIOL A180.

A general study of life processes with emphasis on biological chemistry, cells, molecular biology, heredity, ecology, evolution, and the diversity of life. Suitable as a general education elective for the non-science major.

BIOL A101 **4 Units (54 lecture hours; 54 lab hours)**
The Biology of Cooking
Advisory: CHEM A100 or AP Chemistry.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

Ever wondered why grilled meat tastes so good? Why meringues are made with egg whites and not egg yolks? Why tomatoes are considered a fruit instead of a vegetable? These questions (and more!) will be answered in demonstration-filled classes as we use the reagents of the kitchen to teach the basic principles of biology and the scientific method.

BIOL A114 **2 Units (18 lecture hours; 18 lab hours)**
Basic Microbiology
Grading Mode: Standard Letter
Transfer Credit: CSU.

Microbiology as applied to disease, treatment, immunity and the environment. Introduction to history, theory, and techniques of microbiology as applied to microbial nutrition, disease, immunity, control and the environment.

BIOL A120 **1 Unit (18 lecture hours)**
Anatomy Discussion
Advisory: Concurrent enrollment in BIOL A220.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

Student-centric discussion of topics covered within BIOL A220 (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. Taught from a functional perspective, it emphasizes the relationship of structure (Anatomy) to function (Physiology). This course is primarily intended for students concurrently enrolled in BIOL A220 (Human Anatomy), as well as nursing, allied health, kinesiology, and other health-related majors.

BIOL A125 **3 Units (54 lecture hours)**
Human Biology
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU; UC.

A transferable general education biology course for students not majoring in the life sciences. Emphasis on relationships of biology to human beings with emphasis on molecular genetics, heredity, major body systems, disease, and human interactions with the environment. Graded or Pass/No Pass option.

BIOL A172 **1 Unit (9 lecture hours; 27 lab hours)**
Nature of Birds
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

An introductory course to bird identification, their life, and their habitats. Emphasis will be on the physical characteristics of birds, how birds evolved, their classification, diet, behavior, reproduction strategies, flight mechanics, migration patterns, and characteristics of their natural habitat. There will be at least four field trips. Graded or Pass/No Pass option.

BIOL A180 **4 Units (63 lecture hours; 45 lab hours)**
Introduction to Biology for Majors 1: Cell and Molecular Biology
Prerequisite(s): Completion of CHEM A130 or concurrent enrollment in one of the following: CHEM A180 or CHEM A185 or CHEM A220 or CHEM A225; CHEM A180 qualifying exam does not substitute for CHEM A130 prerequisite or CHEM A180 corequisite; Non-native speaking students must be eligible to enter ESL A031 and ESL A035.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

Designed for the major in the biological sciences and pre-health profession majors. Emphasizing central concepts of biology, including biochemistry, cell biology, membrane dynamics, molecular genetics, classical genetics, and biotechnology. **C-ID:** BIOL 190.

BIOL A182 **3 Units (54 lecture hours)**
Zoology
Prerequisite(s): MATH A030.

Advisory: BIOL A180; Any college level Biology and/or Chemistry course.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

Includes basic aspects of phylogeny, morphology, physiology and behavior of vertebrate and invertebrate animals. Emphasizes comparing the variety of mechanisms animals have evolved to solve common biological problems. **C-ID:** BIOL 150 when BIOL A182L is also completed.

BIOL A182H **3 Units (54 lecture hours)**
Zoology Honors
Prerequisite(s): MATH A030.

Advisory: BIOL A180; Any college level Biology and/or Chemistry course.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

Includes basic aspects of phylogeny, morphology, physiology and behavior of vertebrate and invertebrate animals. Emphasizes comparing the variety of mechanisms animals have evolved to solve common biological problems.

BIOL A182L **1 Unit (9 lecture hours; 45 lab hours)**
Zoology Lab
Prerequisite(s): BIOL A182 or BIOL A182H, or concurrent enrollment.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

A laboratory course emphasizing animal phylogeny, anatomy, and physiology using representative types.

BIOL A183 **3 Units (54 lecture hours)**
Botany
Prerequisite(s): MATH A030.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

Includes the dynamics of plants and their processes with particular emphasis on the structure and function of living plants. **C-ID:** BIOL 155 when BIOL A183L is also completed.

BIOL A183L **1 Unit (54 lab hours)**
Botany Lab
Prerequisite(s): BIOL A183 or concurrent enrollment; and MATH A030 or higher (or appropriate placement).

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

A course in the dynamics of plants and their processes with particular emphasis on the structure and function of living things. Field Trip Required. Lab.

BIOL A185 **5 Units (54 lecture hours; 108 lab hours)**
Introduction to Biology for Majors 2: Ecology, Evolution, Diversity, and Physiology
Prerequisite(s): BIOL A180.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

An introduction to the evolution, ecology, physiology, anatomy, and life history of all major groups of organisms, including bacteria, archaea, fungi, plants, animals, other eukaryotes, and viruses. Students also develop their scientific experimentation skills, including statistical data analysis and writing. Fieldtrip required. **C-ID:** BIOL 140.

BIOL A200 **2 Units (16 lecture hours; 64 lab hours)**
Advanced Anatomy Practicum
Prerequisite(s): BIOL A220.

Grading Mode: Standard Letter
Transfer Credit: CSU.

Advanced exploration and discussion of topics and concepts within Human Anatomy, which include: 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. Taught from a functional perspective, it emphasizes the relationship of structure (Anatomy) to function (Physiology). Laboratory participation and instructor shadowing are required. This course is primarily intended for students who have successfully completed BIOL A220 (Human Anatomy) and desire to further their knowledge and understanding of Human Anatomy, while being mentored by instructors in laboratory discussion and presentation, and instructing, mentoring and tutoring current anatomy students. BIOL A200 students will be expected to assist BIOL A220 (Human Anatomy) students utilizing newly acquired educational techniques in the following: dissection; identification of specimens and structures on both the micro- and macroscopic level.

BIOL A210 **5 Units (54 lecture hours; 108 lab hours)**
General Microbiology
Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

Fundamentals of bacteriology, mycology, protozoology, and virology. Includes food, water and medical microbiology, factors in resistance, infection, and disease. Human normal flora and the immune response are included. Microbial ecology, genetics, and bioenergetics are covered. Recommended for biological science majors.

BIOL A220 **5 Units (54 lecture hours; 108 lab hours)**
Human Anatomy
Grading Mode: Standard Letter
Transfer Credit: CSU; UC: Credit Limitation: Credit for either BIOL A221 or BIOL A220 and BIOL A225.

Structural organization of the human body: gross and microscopic structure of the integumentary, skeletal, muscular, nervous, sensory, endocrine, cardiovasuclar, lymphatic, respiratory, digestive, excretory, and reproductive systems from cellular to organ system levels of organization. Taught from a functional perspective, it emphasizes the relationship of structure (Anatomy) to function (Physiology). Laboratory participation is required. This course is primarily intended for nursing, allied health, kinesiology, and other health-related majors. **C-ID:** BIOL 110B.

BIOL A221 **4 Units (54 lecture hours; 54 lab hours)**
Anatomy-Physiology
Grading Mode: Standard Letter
Transfer Credit: CSU; UC: Credit Limitation: Credit for either BIOL A221 or BIOL A220 and BIOL A225.

Anatomy and physiology as a combined discipline. Designed for Career and Certificate Programs. Suitable as a general education elective for the non-science major. This course may also be offered online.

BIOL A225 **5 Units (54 lecture hours; 108 lab hours)**
Human Physiology
Prerequisite(s): CHEM A110, CHEM A130 or CHEM A180.

Advisory: BIOL A220 or BIOL A221.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC: Credit Limitation: Credit for either BIOL A221 or BIOL A220 and BIOL A225.

This course studies the physiological principles, function, integration and homeostasis of the human body at all levels of biological organization with an emphasis on the relationship of structure (Anatomy) and function (Physiology). Basic concepts and practical applications are stressed. Laboratory participation is required. This course meets requirements for pre-nursing, physical therapy and physical education majors. **C-ID:** BIOL 120B.

BIOL A280 **4 Units (67.5 lecture hours; 40.5 lab hours)**
Evolutionary Ecology
Prerequisite(s): BIOL A180.

Advisory: BIOL A182 or BIOL A182H, and BIOL A183; or BIOL A185.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

For majors in the biological sciences. Evolutionary and ecological principles and their relevance at several levels of organization. Includes principles governing classification of life, principles of evolution, conditions for life, adaptations to the environment, analysis of ecological niches, population, and community/ecosystem ecology from an evolutionary viewpoint. Field trips are required for this course. Lecture/Lab.

BIOL A281 **2 Units (36 lecture hours)**
Biochemistry
Prerequisite(s): BIOL A180 and CHEM A220.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

An introduction to the chemistry of biology. This course is designed to satisfy transfer requirements for some biology majors.

BIOL A282 **2 Units (36 lecture hours)**
Molecular Biology
Prerequisite(s): BIOL A180 and CHEM A220.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

An introduction to molecular biology emphasizing gene structure and function. This course is designed to satisfy transfer requirements for biology majors.

BIOL A283 **4 Units (72 lecture hours)**
Genetics
Prerequisite(s): BIOL A180 and CHEM A180.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

This course covers the principles of Mendelian inheritance; gene transmission in prokaryotes and eukaryotes; recombination and mutation; gene regulation, replication, and expression; cell division; and biochemical genetics. Additional emphasis is placed on problem solving.