

# BIOLOGY

The Biological Sciences curriculum provides a foundation for further study and careers in multiple fields within the life sciences. Our generalized courses give students majoring in other subjects a broad and comprehensive experience in biology. Our specialized courses serve students transferring to four-year, graduate, or professional schools; upon transfer, these students will be prepared for further study in a variety of disciplines, including but not limited to Botany, Cell/Molecular Biology, Ecology, Health Sciences, Marine Biology, Pharmacology, and Zoology. Subsequent careers in biotechnology, dentistry, medicine, nursing, research, teaching, among others, all rely on a strong background in the Biological Sciences.

## BIOL V01 Principles of Biology 3 Units

*In-Class Hours:* 52.5 lecture

This course provides an introduction to the basic concepts of biology including basic chemistry and biochemistry, cells and cellular processes, physiology, morphology, behavior, heredity, molecular biology, taxonomy, and ecology. Concepts are taught in a framework that emphasizes the scientific method, evolutionary principles and history, and the interaction between humans and the environment. This course is designed for non-biology majors.

**Grade Modes:** Letter Graded

**Credit Limitations:** see counselor.

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** A1

**Transfer Credit:** CSU, UC

**UC Credit Limitations:** None

**CSU GE-Breadth:** B2

**IGETC:** 5B

## BIOL V01L Principles of Biology Laboratory 1 Unit

*In-Class Hours:* 52.5 laboratory

*Prerequisites:* BIOL V01 or concurrent enrollment

This course provides a hands-on overview of the basic concepts of biology, including biochemistry, cells and cellular processes, physiology, morphology, behavior, heredity, molecular biology, taxonomy, and ecology. Concepts are taught in a framework that emphasizes the scientific method, evolutionary principles and history, and the interaction between humans and the environment. This course is designed for non-biology majors.

**Grade Modes:** Letter Graded

**Field Trips:** May be required

**Credit Limitations:** see counselor.

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** A1

**Transfer Credit:** CSU, UC

**UC Credit Limitations:** None

**CSU GE-Breadth:** B3

**IGETC:** 5C

## BIOL V03 Evolution, Ecology, and Organismal Biology 4 Units

*Formerly:* BIOL V20B; BIOL 20B

*In-Class Hours:* 52.5 lecture, 52.5 laboratory

*Prerequisites:* CHEM V20/CHEM V20L or equivalent, and Intermediate Algebra or 1 year of high school algebra with a grade of C or better or placement as determined by the college's multiple measures assessment process

*C-ID:* BIOL 140, BIOL 135S, BIOL 140

This course is a survey of the basic biology and diversity of unicellular and multicellular organisms. The course examines the mechanisms of evolution and interactions between organisms and their environment. It emphasizes classification, structure, function, and evolutionary adaptations of organisms to their environments (including eubacteria, archaea, protists, plants, fungi, and animals).

*Advisories/Rec Prep:* BIOL V01/BIOL V01L, or 1 year of high school biology with a grade of C

**Grade Modes:** Letter Graded

**Field Trips:** Will be required

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** A1

**Transfer Credit:** CSU, UC

**UC Credit Limitations:** None

**CSU GE-Breadth:** B2, B3

**IGETC:** 5B, 5C

## BIOL V04 Cell and Molecular Biology 4 Units

*Formerly:* BIOL V20A

*In-Class Hours:* 52.5 lecture, 52.5 laboratory

*Prerequisites:* CHEM V20/CHEM V20L or equivalent, and Intermediate Algebra or 1 year of high school algebra with a grade of C or better or placement as determined by the college's multiple measures assessment process

*C-ID:* BIOL 190, BIOL 135S

This course will cover prokaryotic and eukaryotic cell structure and function, biological molecules, homeostasis, cell reproduction and its controls, molecular genetics, classical / Mendelian genetics, cell metabolism including photosynthesis and respiration, and cellular communication. The philosophy of science, methods of scientific inquiry and experimental design are foundational to the course.

*Advisories/Rec Prep:* BIOL V01/BIOL V01L, or 1 year of high school biology with a grade of C

**Grade Modes:** Letter Graded

**Field Trips:** May be required

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** A1

**Transfer Credit:** CSU, UC

**UC Credit Limitations:** None

**CSU GE-Breadth:** B2, B3

**IGETC:** 5B, 5C

**BIOL V10 Introduction to Environmental Issues 3 Units***Same-As:* ESRM V01*In-Class Hours:* 52.5 lecture

This course is an examination and analysis of the biological sciences within the context of the interrelationship between human populations and their natural surroundings. The characteristics of natural systems are described and the effects and impacts of human activities on these systems are considered. The course introduces the principles of scientific inquiry and experimental methodology in the study of ecological concepts and environmental issues. Alternatives and approaches to deal with environmental problems are considered and evaluated.

**Grade Modes:** Letter Graded**Field Trips:** May be required**Credit Limitations:** see counselor.**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** A1**Transfer Credit:** CSU, UC**UC Credit Limitations:** None**CSU GE-Breadth:** B2, E**IGETC:** 5B**BIOL V12 Human Biology 3 Units***In-Class Hours:* 52.5 lecture

This is an introductory course in the principles of biology, with special emphasis on the structure and function of the human being. It provides a study of body systems and their relationship to health or disease as well as a discussion of the roles and effects of human beings in the biological world.

**Grade Modes:** Letter Graded**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** A1**Transfer Credit:** CSU, UC**UC Credit Limitations:** None**CSU GE-Breadth:** B2, E**IGETC:** 5B**BIOL V14 Field Biology 4 Units***In-Class Hours:* 52.5 lecture, 52.5 laboratory

This course is designed to introduce students to the study of biology in a field setting. Emphasis will be placed on the adaptation of organisms to their particular environment. Topics will include evolution, niche, population dynamics, community, ecosystems, energy flow and terrestrial biomes. Field trips will stress identification and classification of common plants and animals.

**Grade Modes:** Letter Graded, Student Option- Letter/Credit, Pass/No Pass Grading**Field Trips:** Will be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** A1**Transfer Credit:** CSU, UC**UC Credit Limitations:** None**CSU GE-Breadth:** B2, B3**IGETC:** 5B, 5C**BIOL V18 Human Heredity 3 Units***Formerly:* BIOL 18*In-Class Hours:* 52.5 lecture

This course is an introduction to the basic principles of modern genetics with specific reference to the human being. Through the study of mechanisms of human inheritance, the origin and nature of human differences will be examined. Social, political and psychological ramifications of biological laws governing heredity and organic evolution will be emphasized.

**Grade Modes:** Letter Graded**Field Trips:** May be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** A1**Transfer Credit:** CSU, UC**UC Credit Limitations:** None**CSU GE-Breadth:** B2, D, E**IGETC:** 5B**BIOL V29 Marine Biology 3 Units***In-Class Hours:* 52.5 lecture

This course provides an introduction to the diversity of marine organisms and the physical and biological processes that influence their life history, behavior, distribution, and anatomical structure. Topics also address the interactions of these organisms and processes in a variety of habitats, marine ecology, and marine conservation.

**Grade Modes:** Letter Graded**Field Trips:** May be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** A1**Transfer Credit:** CSU, UC**UC Credit Limitations:** None**CSU GE-Breadth:** B2**IGETC:** 5B**BIOL V29L Marine Biology Laboratory 1 Unit***In-Class Hours:* 52.5 laboratory*Prerequisites:* BIOL V29 or concurrent enrollment

This laboratory course provides an introduction to the diversity of marine organisms and the physical and biological processes that influence their structure, life history, and behavior.

**Grade Modes:** Letter Graded**Field Trips:** Will be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** A1**Transfer Credit:** CSU, UC**UC Credit Limitations:** None**CSU GE-Breadth:** B3**IGETC:** 5C

**BIOL V90 Directed Studies in Biology 1-6 Units**

*In-Class Hours:* 52.5-315.0 laboratory

This course offers specialized study opportunities for students who wish to pursue projects not included in the regular curriculum. Students are accepted only by a written project proposal approved by the discipline prior to enrollment.

**Grade Modes:** Letter Graded, Student Option- Letter/Credit, Pass/No Pass Grading

**Field Trips:** May be required

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** None

**Transfer Credit:** CSU

**UC Credit Limitations:** None

**CSU GE-Breadth:** None

**IGETC:** None

**BIOL V95 Biology Internship I 1-4 Units**

*Corequisites:* enrolled in 7 units to include internship

This course offers students who are volunteers (unpaid) an opportunity to obtain work experience related to their field of study. Students are accepted as a result of consultation with a designate faculty member in the discipline and the acceptance of an approved work proposal.

**Catalog Notes:** Offered on a pass/no pass basis only.

*Advisories/Rec Prep:* completion of or concurrent enrollment in one course in the discipline

**Grade Modes:** Pass/No Pass Grading

**Field Trips:** Will be required

**Credit Limitations:** see counselor; for UC, determined after admission.

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** None

**Transfer Credit:** CSU

**UC Credit Limitations:** None

**CSU GE-Breadth:** None

**IGETC:** None

**BIOL V96 Biology Internship II 1-4 Units**

*Corequisites:* enrolled in 7 units to include internship

This course offers students who are employed in the field an opportunity to expand their work experience related to their field of study. Students are accepted as a result of consultation with a designated faculty member in the discipline and the acceptance of an approved work proposal.

**Catalog Notes:** Offered on a pass/no pass basis only.

*Advisories/Rec Prep:* completion of or concurrent enrollment in one course in the discipline

**Grade Modes:** Pass/No Pass Grading

**Field Trips:** Will be required

**Credit Limitations:** see counselor; for UC, determined after admission.

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** None

**Transfer Credit:** CSU

**UC Credit Limitations:** None

**CSU GE-Breadth:** None

**IGETC:** None

- Pre-Allied Health Sciences, Certificate of Achievement (<http://catalog.vcccd.edu/ventura/programs-courses/biology/pre-allied-health-coa/>)

- Biology, Associate in Science for Transfer (<http://catalog.vcccd.edu/ventura/programs-courses/biology/biology-ast/>)
- Health Sciences, Associate in Science (<http://catalog.vcccd.edu/ventura/programs-courses/biology/health-sciences-aa/>)