

BIOLOGY (BIO)

BI0100 / Biology Concepts

4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture

Introductory course covering basic principles and concepts of biology. Methods of scientific inquiry and behavior of matter and energy in biological systems are explored. Prerequisites: None. Course Notes: Field trips may be required at students' expense.

Fulfills: Natural Sciences Quantitative [SQ]; Natural Sciences Quantitative [SQ]-in combo

Division: Biological Sciences

BI0101 / Introduction to Human Genetics for Non-Majors

4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture

Study of inheritance in humans, at the organismal, cellular and molecular levels. Includes exploration of gene expression, isolation and manipulation of DNA, Mendelian genetics, pedigree analysis, as well as chromosomal abnormalities and genetic diseases. Prerequisites: None.

Fulfills: Natural Sciences Quantitative [SQ]; Natural Sciences Quantitative [SQ]-in combo

Division: Biological Sciences

BI0102 / Cells to Systems: An Introduction to Biology for Non-Majors

4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture

Study of living things. Builds from basic molecular components to structure and physiology of cells and organ systems of animals and plants. Prerequisites: None.

Fulfills: Natural Sciences Quantitative [SQ]; Natural Sciences Quantitative [SQ]-in combo

Division: Biological Sciences

BI0105 / Environmental Biology

4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture

Fundamentals of ecology and their relevance to human impact on natural ecosystems. Prerequisites: None.

Fulfills: Natural Sciences Quantitative [SQ]; Natural Sciences Quantitative [SQ]-in combo

Division: Biological Sciences

BI0107 / Introduction to Biotechnology

4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture

Introduction to biotechnology and its global impact on society. Covers applications, laboratory techniques, limitations and the international economic benefits, risks, and legal and moral issues associated with biotechnology. Prerequisites: None.

Fulfills: Natural Sciences Quantitative [SQ]; Natural Sciences Quantitative [SQ]-in combo

Division: Biological Sciences

BI0108 / Plants and Society

4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture

A global study of plants in relation to humans; as a source of food, fiber, drugs, and other products; for aesthetic value, survival, and energy. Prerequisites: None.

Division: Biological Sciences

BI0109 / Natural History of the Southwest

4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture

Study of the common plants and animals of the Southwest including their distribution, adaptation, behavior, and ecology. Introduction to basic field and laboratory techniques used in the study of natural history. Specific field problems presented dealing with plant and animal analysis and ecological interrelationships. Prerequisites: None. Course Notes: Field trips may be required.

Fulfills: Natural Sciences General [SG]; Natural Sciences General [SG]-in combo

Division: Biological Sciences

BI0111 / Microbes and Society

4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture

Examination of the science of microbes and the impact of microbes on human affairs. Topics include principles of microbial diversity, cell structure, growth and reproduction, global processes, disease, and prevention of disease. Prerequisites: None.

Fulfills: Natural Sciences General [SG]; Natural Sciences General [SG]-in combo

Division: Biological Sciences

BI0145 / Marine Biology

4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture

A survey of marine environments and their biotic communities with emphasis on the natural history of marine organisms. Prerequisites: None.

Fulfills: Natural Sciences General [SG]; Natural Sciences General [SG]-in combo

Division: Biological Sciences

BI0149AF / Field Biology: Natural History of the Grand Canyon

1 Credit / 7.0 Periods for Laboratory

Survey of plants and animals of the Grand Canyon emphasizing ecological relationships and adaptation biology. Human activities in and impact upon the Canyon's ecosystems from prehistoric times to present considered. Course consists of on-campus lectures and 7-day raft trip through inner gorge of the Grand Canyon. Prerequisites: None.

Division: Biological Sciences

BI0149AH / Field Biology: Marine Biology in Mexico

1 Credit / 1.34 Periods for Lecture & Lab

Introduction to marine experiments, marine biology, and ecology. On-site field experience in Mexico. Emphasis on observation and study of marine organisms along the shore. Prerequisites: Permission of Instructor.

Course Notes: BI0149AH may be repeated for a total of three (3) credit hours.

Division: Biological Sciences

BI0149AK / Field Biology: Ecological and Environmental Field Experience

1 Credit / 7.0 Periods for Laboratory

Field expeditions in which ecological and environmental principles and concepts are observed and studied. Prerequisites: None. Course Notes: BI0149AK may be repeated for a total of four (4) credit hours.

Division: Biological Sciences

BI0149AL / Field Biology: Ecological and Environmental Field Experience

2 Credits / 14.0 Periods for Laboratory

Field expeditions in which ecological and environmental principles and concepts are observed and studied. Prerequisites: None. Course Notes: BI0149AL may be repeated for a total of four (4) credit hours.

Division: Biological Sciences

**BIO149AM / Field Biology: Ecological and Environmental Field Experience
3 Credits / 21.0 Periods for Laboratory**

Field expeditions in which ecological and environmental principles and concepts are observed and studied. Prerequisites: None.

Division: Biological Sciences

**BIO149AN / Field Biology: Ecological and Environmental Field Experience
4 Credits / 28.0 Periods for Laboratory**

Field expeditions in which ecological and environmental principles and concepts are observed and studied. Prerequisites: None.

Division: Biological Sciences

BIO156 / Introductory Biology for Allied Health**4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture**

An introductory biology course for allied health majors with an emphasis on humans. Topics include fundamental concepts of cell biology, histology, microbiology, and genetics. Prerequisites: A grade of C or better in RDG100, or RDG100LL, or higher, or eligibility for CRE101. One year of high school or one-semester of college level chemistry is strongly recommended.

Fulfills: Natural Sciences Quantitative [SQ]; Natural Sciences Quantitative [SQ]-in combo

Division: Biological Sciences

BIO156XT / Introductory Biology for Allied Health**4 Credits / 4.0 Periods for Laboratory, 3.0 Periods for Lecture**

An introductory biology course for allied health majors with an emphasis on humans. Topics include fundamental concepts of cell biology, histology, microbiology, and genetics. Prerequisites: A grade of C or better in RDG100, or RDG100LL, or higher, or eligibility for CRE101. One year of high school or one-semester of college level chemistry is strongly recommended.

Fulfills: Natural Sciences Quantitative [SQ]; Natural Sciences Quantitative [SQ]-in combo

Division: Biological Sciences

BIO160 / Introduction to Human Anatomy and Physiology**4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture**

Principles of scientific method. Structural organization, homeostasis and control mechanisms of the body. Specific chemistry concepts. Structure and function of the major systems of the body. Prerequisites: None.

Fulfills: Natural Sciences Quantitative [SQ]; Natural Sciences Quantitative [SQ]-in combo

Division: Biological Sciences

BIO181 / General Biology (Majors) I**4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture**

The study and principles of structure and function of organisms at the molecular and cellular levels. A detailed exploration of the chemistry of life, the cell, and genetics. Prerequisites: A grade of C or better in RDG100, or RDG100LL, or higher, or eligibility for CRE101. One year of high school or one semester of college-level biology and chemistry is strongly recommended.

Division: Biological Sciences

BIO181XT / General Biology (Majors) I**4 Credits / 4.0 Periods for Laboratory, 3.0 Periods for Lecture**

The study and principles of structure and function of organisms at the molecular and cellular levels. A detailed exploration of the chemistry of life, the cell, and genetics. Prerequisites: A grade of C or better in RDG100, or RDG100LL, or higher, or eligibility for CRE101. One year of high school or one semester of college-level biology and chemistry is strongly recommended.

Division: Biological Sciences

BIO182 / General Biology (Majors) II**4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture**

The study and principles of structure and function of living things at cellular, organismic, and higher levels of organization. A detailed exploration of the mechanisms of evolution, biological diversity, biology of organisms, and ecology. Prerequisites: A grade of C or better in BIO181, or BIO181XT, or permission of Department or Division. Course Notes: BIO182 may require field trips.

Division: Biological Sciences

BIO182XT / General Biology (Majors) II**4 Credits / 4.0 Periods for Laboratory, 3.0 Periods for Lecture**

The study and principles of structure and function of living things at cellular, organismic, and higher levels of organization. A detailed exploration of the mechanisms of evolution, biological diversity, biology of organisms, and ecology. Prerequisites: A grade of C or better in BIO181, or BIO181XT, or permission of Department or Division. Course Notes: BIO182XT may require field trips.

Division: Biological Sciences

BIO201 / Human Anatomy and Physiology I**4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture**

Study of structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system. Prerequisites: A grade of C or better in (BIO156, or BIO156XT, or BIO181, or BIO181XT, or one year of high school biology) and (RDG100, or RDG100LL, or higher, or eligibility for CRE101). CHM130 or higher or one year of high school chemistry suggested but not required.



SUN# BIO 2201

Fulfills: Natural Sciences General [SG]; Natural Sciences General [SG]-in combo

Division: Biological Sciences



BIO201XT / Human Anatomy and Physiology I**4 Credits / 4.0 Periods for Laboratory, 3.0 Periods for Lecture**

Study of structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system. Prerequisites: A grade of C or better in (BIO156, or BIO156XT, or BIO181, or BIO181XT, or one year of high school biology) and (RDG100, or RDG100LL, or higher, or eligibility for CRE101). CHM130 or higher or one year of high school chemistry suggested but not required.

Division: Biological Sciences

BIO202 / Human Anatomy and Physiology II**4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture**

Continuation of structure and function of the human body. Topics include endocrine, circulatory, lymphatic, respiratory, digestive, urinary, and reproductive systems; and fluid and electrolyte balance. Prerequisites: A grade of C or better in BIO201 or BIO201XT.

Division: Biological Sciences

BIO205 / Microbiology**4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture**

Study of microorganisms and their relationship to health, ecology, and related fields. Prerequisites: A grade of C or better in (BIO156, or BIO156XT, or BIO181, or BIO181XT, or one year of high school biology) and (RDG100, or RDG100LL, or higher, or eligibility for CRE101). CHM130 or higher or one year of high school chemistry suggested but not required.

Division: Biological Sciences

BIO220 / Biology of Microorganisms**4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture**

Detailed study of microbial cells, their structure, genetics, physiology and taxonomy. Prerequisites: A grade of C or better in BIO181. Corequisites: (CHM152 and CHM152LL) or (CHM154 and CHM154LL).

Division: Biological Sciences

BIO241 / Human Genetics**4 Credits / 3.0 Periods for Laboratory, 3.0 Periods for Lecture**

An introduction to the basic concepts of human heredity and cytogenetics including Mendelian, molecular, and population genetics. Prerequisites: A grade of C or better in BIO100, or BIO181, or equivalent, or permission of instructor.

Fulfills: Natural Sciences Quantitative [SQ]; Natural Sciences Quantitative [SQ]-in combo

Division: Biological Sciences

BIO283 / Bioinformatics and Scientific Computing**3 Credits / 4.0 Periods for Lecture & Lab**

Introduction to bioinformatics, including history, concepts, major genetic databases and access tools. Computer software and techniques for analyzing one nucleotide or protein sequence, searching for similar sequences, and aligning and comparing two or multiple sequences. Microarray analysis and phylogenetic trees. Application of standard software to bioinformatic computing tasks, including word processing of reports, and use of spreadsheets for statistical analysis and graphing. Text editors, Unix, Internet web site searching and construction, and ethics. Prerequisites: A grade of C or better in [(BIO156 or BIO181) and (MAT095, or MAT096, or MAT114, or MAT115, or MAT12+, OR an appropriate district placement for MAT15+ or higher)], or permission of Instructor or Department/Division Chair. Concurrent enrollment in, or previous completion of, BIO208 is strongly suggested but not required.

Crosslisted: CSC283

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