Biology (BIOL)

Courses

**BIOL 1015 General Biology: 5 semester hours.**
Basis of life, cell theory, structure and energy transformation, reproduction, and genetic variability. Origins of diversity of organisms.

**BIOL 1021 Biology Seminar: 1 semester hour.**
Discussion and presentations of current biological topics by students, faculty, and guest lecturers.

**BIOL 1025 General Biology: 5 semester hours.**

**BIOL 1031 Biology Seminar: 1 semester hour.**
Discussion and presentations of current biological topics by students, faculty, and guest lecturers.

**BIOL 1034 Botany: 4 semester hours.**
Morphology and physiology of flowering plants. Structure, method of reproduction, and biotic relationships of type representatives of lower plants.

**BIOL 1054 Anatomy and Physiology I: 4 semester hours.**
An introductory course examining the organization of a human body and the mechanisms for maintaining homeostasis. Topics include chemistry of life, cell and tissue structure, metabolism, skeleton, muscular, nervous, endocrine, and integumentary system. Designed for students who will pursue a career in nursing.

**BIOL 1064 Anatomy and Physiology II: 4 semester hours.**
An introductory course examining the organization of a human body and the mechanisms for maintaining homeostasis. Topics include metabolism, the cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems. Designed for students who will pursue a career in nursing.

**BIOL 1073 General Microbiology: 3 semester hours.**
Morphology and physiology of microorganisms related to health and sanitation; disinfection, growth, and control of those organisms causing common infectious diseases.

**BIOL 1111 College Biology Laboratory: 1 semester hour.**
Introductory laboratory course for non-biology majors. Emphasis on basic biological principles and their application to human life.

**BIOL 1113 College Biology I: 3 semester hours.**
Introductory course for non-biology majors. Emphasis on basic biological principles and their application to human life. Contemporary biology that covers the chemical basis of life, structure and function of the cell, molecular biology and genetics.

**BIOL 1123 College Biology II: 3 semester hours.**
A reflection of the interdependence of plants on animals and how man's existence is depending on successful interactions between plants and animals.

**BIOL 2054 Genetics: 4 semester hours.**
Analysis of the structure, function, and transmission of genetic materials.
Prerequisites: BIOL 1015 and BIOL 1025.

**BIOL 2063 Hlthcare Minort Com: 3 semester hours.**
Introduction to the major health concerns that afflict minority and underserved communities. This course will examine the infectious diseases of special concern to public health and will identify and present for discussion. The course will examine current health policy and the availability of health services as modifiable influences on the health status of minority and underserved communities.

**BIOL 3014 Human Physiology and Anatomy: 4 semester hours.**
For biology and physical education majors. Human structure, physiology, organ systems, and related principles.
Prerequisites: BIOL 1015 and BIOL 1025.

**BIOL 3024 Human Physiology and Anatomy: 4 semester hours.**
For biology and physical education majors. Human structure, physiology, organ systems, and related principles.
Prerequisites: BIOL 1015 and BIOL 1025.

**BIOL 3034 General Microbiology: 4 semester hours.**
Morphology, physiology, classification, and cultivation of the microorganism relevant to agriculture, pre-medicine, and industry.
Prerequisites: CHEM 1033 and BIOL 1015.

**BIOL 3044 Immunology: 4 semester hours.**
Fundamental aspects of immunology, antigenic systems, hypersensitivity, and serology.
Prerequisites: BIOL 1015 and BIOL 1025.

**BIOL 3054 Gross Anatomy: 4 semester hours.**
Introduce the basic principles and facts relating to the gross anatomy of the human body.
Prerequisites: BIOL 1015 and BIOL 1025.
BIOL 3063 Human Dis Epi Mthds: 3 semester hours.
An introduction to the basic methodology of epidemiology study. This course will address statistical measures used frequently with epidemiological study designs and the description/analysis of data. The course will also include a discussion of the usefulness of epidemiologic study design in clinical and non-clinical settings.

BIOL 3064 Animal Histology: 4 semester hours.
Microscopic study of tissues and organs of vertebrates. Relation of structure to function.
Prerequisites: BIOL 1015 and BIOL 1025.

BIOL 3073 Molecular Biology I: 3 semester hours.
The dynamics of carbohydrate, fat, protein and nucleic acid metabolism; recombinant DNA evolution, gene structure and function in specialized eukaryotic systems.
Prerequisites: BIOL 1025 and CHEM 2043.

BIOL 3083 Molecular Biology II: 3 semester hours.
Regulation of gene function in bacterial cells; the functioning of eukaryotic chromosomes; the extraordinary diversity of eukaryotic viruses.
Prerequisites: BIOL 1025 and CHEM 2043.

BIOL 3124 Cell Biology: 4 semester hours.
A study of the ultrastructure and macro-molecular organization of cells, with emphasis on eukaryotic cells. The convergence of structure and function in life phenomena will be highlighted.
Prerequisites: BIOL 1025 and CHEM 2043.

BIOL 3134 Synthetic Biology: 4 semester hours.
The interdisciplinary study of the implementation and application of synthetic biology applied to design and construction of new biological parts, devices and systems.
Prerequisites: BIOL 1015 and BIOL 1025 and BIOL 2054 and BIOL 3073.

BIOL 4012 Med Terminology: 2 semester hours.
Emphasis is on understanding basic medical terms and learning how they are used in documenting and reporting patient care procedures. Practical applications are provided by exercises and medical record analyses in each chapter.

BIOL 4013 Topics in Genomics: 3 semester hours.
The study of the human genome in a holistic manner. Physical mapping and large scale DNA sequencing of the human genome: gene expression and micro arrays; the application of genome data to the incidence of disease markers and gene based therapeutics.
Prerequisites: BIOL 1015 and BIOL 1025 and BIOL 2054 and CHEM 2033 and CHEM 2043.

BIOL 4014 Vertebrate Embryology: 4 semester hours.
Structure, principles, and progress in vertebrate development. Chickens and pigs as principle laboratory materials.
Prerequisites: BIOL 1015 and BIOL 1025.

BIOL 4024 Comparative Anatomy: 4 semester hours.
Anatomy of organs and organ systems, their function and evolution in major vertebrate types.
Prerequisites: BIOL 1015 and BIOL 1025.

BIOL 4034 Practicum in Biology: 4 semester hours.
Recent advances in biology. Emphasis placed on investigation and inquiry as a means of acquiring knowledge in biology.

BIOL 4051 Research: 1 semester hour.
Library and laboratory work in specific biological problems.

BIOL 4061 Research: 1 semester hour.
Library and laboratory work in specific biological problems.

BIOL 5003 Research in Zoology: 3 semester hours.
Selected individual research problems in any specified area in which the student has a sufficient background.

BIOL 5013 Genomics: 3 semester hours.
The study of the genomes on a holistic manner, thus providing information on the uses and shortcomings of genetic information. The application of genomic data to determine the incidences of disease; to identify disease markers and develop gene based therapeutics.

BIOL 5024 Microscopic Anatomy: 4 semester hours.
Microscopic study of tissues and organ of vertebrates; relation of structure to function.

BIOL 5033 Biotechnology and Forensics: 3 semester hours.
Introduction of applications of biotechnology to forensic biology concepts and technques.
Prerequisites: BIOL 5123 and BIOL 5183.

BIOL 5053 Air Pollutants: 3 semester hours.
Introduction of essentials of the toxicology of major air contaminants, the factors governing air quality criteria and standards, and alternatives for air pollution abatement.
BIOL 5063 Micro Activ Toxico: 3 semester hours.
Survey of microbial actions in the field of environmental toxicology. Toxigenic microorganisms, major microbial toxins and use of microbial systems in toxicological studies. Microbial alterations of environmental contaminants.

BIOL 5073 Selected Topics in Environmental Toxicology: 3 semester hours.
In-depth treatments of several important areas in the field of environmental toxicology, including studies of microbiology of toxic substances, toxic substances in food, poisonous plants and venomous animals, occupational health and safety and chemical ecology.

BIOL 5074 Genetics: 4 semester hours.
Laws and principles governing heredity in plants and animals; plant and animal improvement through eugenics.

BIOL 5123 Cell and Molecular Biology: 3 semester hours.
An in-depth study of the morphological and functional aspects of the cell. Emphasis will be placed on the current understanding of cell structure and how this relates to physiological and biochemical processes.
Prerequisites: CHEM 2033 and CHEM 2043.

BIOL 5141 Seminar in Biological Problems: 1 semester hour.
Student participation in general and specific research topics in Biology.

BIOL 5143 Field and Animal Ecology: 3 semester hours.
Composition, dynamics and distribution of biotic communities in various sections of the southwest. Outdoor camping and cooking.

BIOL 5183 Experimental Genetics: 3 semester hours.
The use of experimental molecular genetics methods to reinforce genetic principles.

BIOL 5204 Biology for Teachers: 4 semester hours.
Training course for prospective teachers of zoology and botany. Lectures or conferences, field and laboratory work.

BIOL 5303 Biotechnology and Forensics: 3 semester hours.
Introduction of applications of biotechnology to forensic biology concepts and techniques.
Prerequisites: BIOL 5123 and BIOL 5183.

BIOL 5991 Independent Study: 1 semester hour.
Reading, research and/or field work on selected topics in Biology. Prerequisite: consent of advisor. Students may register this course each semester. Only six credit hours may be earned.

BIOL 5993 Independent Study: 3 semester hours.
Reading, research and/or field work on selected topics in Biology. Prerequisite: consent of advisor. Students may register this course each semester. Only six credit hours may be earned.