

Biology (BIOL)

Courses

BIOL 1102 Biology Seminar: 1 semester hour.

Discussion and presentations of current biological topics by students, faculty, and guest lecturers.

BIOL 1103 Biology Seminar: 1 semester hour.

Discussion and presentations of current biological topics by students, faculty, and guest lecturers.

BIOL 1108 Biology for Non-Science Major I Lab: 1 semester hour.

Introductory laboratory course for non-biology majors. Emphasis on basic biological principles and their application to human life.

BIOL 1307 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 1308 Biology for Non-Science Major 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 1309 Biology for Non-Science Majors 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 1411 Botany: 4 semester hours.

Morphology and physiology of flowering plants. Structure, method of reproduction, and biotic relationships of type representatives of lower plants.

BIOL 1501 General Biology: 5 semester hours.

Basis of life, cell theory, structure and energy transformation, reproduction, and genetic variability. Origins of diversity of organisms.

BIOL 1502 General Biology: 5 semester hours.

Structure and function of living organism systems. Ecological relationships, natural selection, evolution, and human ecology.

BIOL 2306 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 2401 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 2402 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 2416 Genetics: 4 semester hours.

Analysis of the structure, function, and transmission of genetic materials.

Prerequisites: (BIOL 1501 or BIOL 1015) and (BIOL 1502 or BIOL 1025) and (BIOL 1411 or BIOL 1034).

BIOL 3307 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 1502 or BIOL 1025) and (CHEM 2304 or CHEM 2043).

BIOL 3308 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 1502 or BIOL 1025 and (CHEM 2304 or CHEM 2043).

BIOL 3401 Human Physiology and Anatomy: 4 semester hours.

For biology and physical education majors. Human structure, physiology, organ systems, and related principles.

Prerequisites: (BIOL 1501 or BIOL 1015) and (BIOL 1502 or BIOL 1025).

BIOL 3402 Human Physiology and Anatomy: 4 semester hours.

For biology and physical education majors. Human structure, physiology, organ systems, and related principles.

Prerequisites: BIOL 1501 or BIOL 1015 and (BIOL 1502 or BIOL 1025).

BIOL 3403 General Microbiology: 4 semester hours.

Morphology, physiology, classification, and cultivation of the microorganism relevant to agriculture, pre-medicine, and industry.

Prerequisites: (BIOL 1501 or BIOL 1015) and (CHEM 1303 or CHEM 1033).

BIOL 3404 Immunology: 4 semester hours.

Fundamental aspects of immunology, antigenic systems, hypersensitivity, and serology.
Prerequisites: BIOL 1501 or BIOL 1015 and (BIOL 1502 or BIOL 1025).

BIOL 3405 Gross Anatomy: 4 semester hours.

Introduce the basic principles and facts relating to the gross anatomy of the human body.
Prerequisites: (BIOL 1501 or BIOL 1015) and (BIOL 1502 or BIOL 1025).

BIOL 3406 Animal Histology: 4 semester hours.

Microscopic study of tissues and organs of vertebrates. Relation of structure to function.
Prerequisites: BIOL 1501 or BIOL 1015 and (BIOL 1502 or BIOL 1025).

BIOL 3412 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 1502 or BIOL 1025 and (CHEM 2304 or CHEM 2043).

BIOL 3413 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 1501 or BIOL 1015) and (BIOL 1502 or BIOL 1025) and (BIOL 2416 or BIOL 2054) and (BIOL 3307 or BIOL 3073).

BIOL 4105 Research: 1 semester hour.

Library and laboratory work in specific biological problems.

BIOL 4106 Research: 1 semester hour.

Library and laboratory work in specific biological problems.

BIOL 4201 Medical 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 4301 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 1501 or BIOL 1015) and (BIOL 1502 or BIOL 1025) and (BIOL 2416 or BIOL 2054) and (CHEM 2303 or CHEM 2033) and (CHEM 2304 or CHEM 2043).

BIOL 4401 Vertebrate Embryology: 4 semester hours.

Structure, principles, and progress in vertebrate development. Chickens and pigs as principle laboratory materials.
Prerequisites: BIOL 1501 or BIOL 1015 and (BIOL 1502 or BIOL 1025).

BIOL 4402 Comparative Anatomy: 4 semester hours.

Anatomy of organs and organ systems, their function and evolution in major vertebrate types.
Prerequisites: BIOL 1501 or BIOL 1015 and (BIOL 1502 or BIOL 1025).

BIOL 4403 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 5301 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 5306 Micro Activ Toxicology: 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 5312 Cell 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 2303 or CHEM 2033 and (CHEM 2304 or CHEM 2043).

BIOL 5399 Independent Study: 1-3 semester hour.

Reading, research and/or field work on selected topics in Biology. Prerequisite: Consent of advisor. Students may register for this course each semester. Only six credit hours may be earned.

BIOL 5402 Microscopic Anatomy: 4 semester hours.

Microscopic study of tissues and organ of vertebrates; relation of structure to function.