

Biological Sciences

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FACULTY:

Professors: Dabydeen, Dunkley, Selvadurai

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Sr CLTs: Elliot

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BIOLOGICAL SCIENCES

Biological Sciences play a major role in the contemporary world. The biological sciences enhance our understanding of ourselves and the environment in which we function. Studies in biology heighten the individual's perception of the social aspects of recent scientific research in such areas as human development, genetic alterations and the effects of radiation on living organisms.

Courses offered in the department serve the needs of the entire College community. Liberal arts students in the associate in arts (AA) degree program can elect any two-semester, 8-credit sequence in biology, chemistry or physics for which they qualify. Liberal arts students in the associate in science (AS) degree program take two 8-credit sequences of either BIO 1101/BY 101 and BY 1201/201, CHEM 1110/CH 110 and CHEM 121 /CH 210, PHYS 1433/SC 433 and PHYS 1434/SC 434, PHYS 1201/SC 201 and PHYS 1202/SC 202 or PHYS 1441/SC 441 and PHYS 1442/SC 442. AAS students can satisfy core requirements in science by taking any of the following 4-credit courses for which they meet the prerequisites, and baccalaureate degree students satisfy core requirements by taking an 8-credit sequence of either: BIO 1101/BY 101 and BIO 1201/BY 201, BIO 2311/BY 301.1 and BIO 2312/BY 301.2, CHEM 1110/CH 110 and CHEM 1210/CH 210, PHYS 1111/SC 111 and PHYS 1112/SC 112, PHYS 1201/SC 201 and PHYS 1202/SC 202, PHYS 1433/SC 433 and PHYS 1434/SC 434, PHYS 1441/SC 441 and PHYS 1442/SC 442.

COURSES:

BIO 1100/BY 100 Principles of Chemistry and Biology

3 cl hrs, 3 lab hrs, 4 cr

A modern approach to the study of the biological sciences emphasizing the ultra-structure and function of the macro-molecular constituents of the cell and those fundamental chemical principles necessary for the

understanding of cellular metabolism. Principles necessary for the understanding of cellular metabolism. Principles of biochemical activities and protoplasmic organization inherent in living cells are studied.
Corequisite: ENG 092R/DR 092 or CUNY certification in reading

BIO 1101/BY 101

Biology I

SCI Core

3 cl hrs, 3 lab hrs, 4 cr

The fundamental principles of biology including taxonomy, structure, nutrition, reproduction, heredity, development and evolution. The concepts of molecular biology and representative plants and animals are utilized. Use and care of the microscope.

Prerequisite: CUNY certification in reading

BIO 1201/BY 201

Biology II

SCI Core

3 cl hrs, 3 lab hrs, 4 cr

Continuation of Biology I with emphasis on the higher vertebrate systems. Biology I and II may be taken by science and non-science majors.

Prerequisite: BIO 1101/BY 101

BIO 1501/BY 501

Elements of Human Biology

SCI Core

3 cl hrs, 3 lab hrs, 4 cr

A study of the structure and function of the human body. Emphasis is placed on healthy functioning of the human organism. Disease and its causes are examined. Practical laboratory experiences, including dissections, illustrate major course concepts.

Corequisite: ENG 092R/DR 092 or CUNY certification in reading

BIO 2311/BY 301.1

Human Anatomy and Physiology I

SCI Core

3 cl hrs, 3 lab hrs, 4 cr

The anatomy and physiology of the cell, tissues, skeletal, muscular and nervous systems.

Prerequisites: BIO 1101/BY 101 or equivalent and CUNY certification in reading and writing

BIO 2312/BY 301.2

Human Anatomy and Physiology II

SCI Core

3 cl hrs, 3 lab hrs, 4 cr

A study of the circulatory, respiratory, digestive, urinary, endocrine and reproductive systems; intermediary metabolism, electrolyte and water balance.

Prerequisite: BIO 2311/BY 301.1

BIO 3302/BY 302

Microbiology

SCI Core

3 cl hrs, 3 lab hrs, 4 cr

The fundamentals of microbiology with laboratory practice in pure techniques, methods of staining and the microscopic and colonial recognition of saprophytic organisms.

Prerequisite: BIO 2311/BY 301.1 or BIO 1101/BY 101

BIO 3524/BY 524

Nutrition

2 cl hrs, 2 cr

The nutrition constituent of foods, their metabolism and role in the body with emphasis on specific health problems, especially those involving nutritional deficiencies.

Prerequisite: BIO 2312/BY 301.2

BIO 3526

Pathophysiology

3 cl hrs, 3 cr

This is a one-semester course that will include three hours of lecture (3 credits). This course will apply knowledge of normal anatomy and physiology to promote a clear understanding of disease processes. It introduces the student to the common body responses and manifestations of disease that result from imbalances in homeostasis of the body. The course will address common well-defined alterations involving cellular proliferation, mobility, neurological, digestion, circulation and immunity.

Prerequisites: CHE 1110/CH 110, BIO 2312/BY 301.2, BIO 3302/BY 302

BIO 3350

Elements of Bioinformatics

2cl hrs, 4 lab hrs, 4 cr

This course develops awareness of Internet-based information, and encourages exploration and use of the wide range of databases available to those working in the field of Biology, Biotechnology and Pharmaceutical industries. Different tools and computational methods are used to analyze DNA, RNA and protein structures. The course is designed to meet the increasing demand for skilled individuals in using computers to manipulate and analyze the growing quantities of genetic information available to bioscientists and the medical profession.

Prerequisites: MAT 1275/IMA 275, BIO 1101/BY 101 and CUNY certification in reading and writing