

BIOLOGY (BIO)

BIO 106 - Human Biology

Credit Hours: 4, Contact Hours: 5

Division: Science Math

A survey of human anatomy and physiology with a primary focus on health and disease. Topics to be discussed will include the cell structure, simple chemistry of biology, homeostasis, the organ systems, genetics, evolution, nutrition, exercise physiology, cancer, heart disease, immunology, AIDS, and other topics of current interest. This course does not meet the requirements for the Nursing program. Consult an advisor before enrolling. Group 1 lab course. Critical Thinking - Direct.

Recommended Prerequisite(s): ENG 111, MTH 23

Corequisites: BIO 106L

BIO 106L - Human Biology Lab

Credit Hours: 0, Contact Hours: 0

Division: Science Math

See BIO 106 for course description.

Corequisites: BIO 106

BIO 108 - Plant Biology

Credit Hours: 4, Contact Hours: 5

Division: Science Math

In this class, we will examine some of the major ideas biologists use to study the living world. These will include the scientific method, biology of cells, and genetics. The emphasis in this course will be on: plant anatomy, the life cycle of plants, growth and its regulation, metabolism, and reproduction. Field and laboratory exercises, as well as experiments in the greenhouse, will allow the student to observe these principles, and practice the skills required to cultivate and propagate plants. Group 1 lab course. Quantitative Reasoning.

Recommended Prerequisite(s): ENG 111, MTH 23

Corequisites: BIO 108L

BIO 108L - Plant Biology Lab

Credit Hours: 0, Contact Hours: 0

Division: Science Math

See BIO 108 for course description.

Corequisites: BIO 108

BIO 110 - Essential Biology

Credit Hours: 4, Contact Hours: 5

Division: Science Math

Essential Biology is geared toward the non-major. The course will cover broad areas of biology, engage the student in how biology relates to their own life, and how science and society interact. Core concepts covered include: Evolution, Structure and Function, Information Flow, Exchange and Storage, Pathways and Transformations of Energy and Matter, and Living Systems. Group 1 lab course. Critical Thinking - Direct.

Recommended Prerequisite(s): ENG 111, MTH 23

Corequisites: BIO 110L

BIO 110L - Essential Biology Lab

Credit Hours: 0, Contact Hours: 0

Division: Science Math

See BIO 110 for course description.

Corequisites: BIO 110

BIO 115 - Cell, Plant & Ecosystem Biology

Credit Hours: 4, Contact Hours: 6

Division: Science Math

An introduction to the fundamental concepts of biology, including an investigation of the major kingdoms of life, classification, ecology, botany, cellular anatomy and biochemistry, DNA structure and function, genetic engineering, cloning and stem cell technologies. Laboratory includes field work and investigative exercises which illustrate lecture topics. Group 1 lab course. Critical Thinking - Direct.

Recommended Prerequisite(s): ENG 111, MTH 111

Corequisites: BIO 115L

BIO 115L - Cell, Plant, Ecosystem Bio Lab

Credit Hours: 0, Contact Hours: 0

Division: Science Math

See BIO 115 for course description.

Corequisites: BIO 115

BIO 116 - Genetic, Evolution, Animal Bio

Credit Hours: 4, Contact Hours: 6

Division: Science Math

The lecture and laboratory portions of this course focus on cell division, classical genetics, evolution and phylogeny as well as the classification and Phyla-level natural history of invertebrate and vertebrate animals. Also, the course covers the anatomy and physiology of organisms found in the Animal Kingdom. The treatment of the topics in this course necessarily assumes a degree of familiarity with the basic biological concepts covered in BIO 115. Students who have not completed BIO 115 should expect to spend extra time reviewing these concepts throughout the course. Group 1 lab course. Critical Thinking - Direct.

Recommended Prerequisite(s): BIO 115, ENG 111, MTH 111

Corequisites: BIO 116L

BIO 116L - Genetic, Evolu, Animal Bio Lab

Credit Hours: 0, Contact Hours: 0

Division: Science Math

See BIO 116 for course description.

Corequisites: BIO 116

BIO 120 - The Science of Stress

Credit Hours: 3, Contact Hours: 3

Division: Science Math

Students will explore current research on stress and its impacts on body systems. Discussion of scientific research and application of coping strategies will provide an experiential understanding of stress on learning, anxiety and depression as well as tools for resilience. This class meets in the anatomy and physiology lab to directly understand regions of the brain and body that are affected by stress. We will also meet on occasion in the SIM lab in order to measure biological parameters of stress as the class progresses. Critical Thinking - Direct.

BIO 208 - Microbiology

Credit Hours: 4, Contact Hours: 6

Division: Science Math

This course reviews the two types of cells (prokaryotic and eukaryotic). Microbial anatomy, physiology, and diversity are introduced. Microbiological disease pathology and the role of microbes in food production are also discussed. This class includes an oral presentation on a disease caused by microbes, a diversity smorgasbord, a group project on a group of microbes, and a write-up on how microbes are used in food. Laboratory work culminates with the identification of an unknown bacterial solution. Group 1 lab course. Quantitative Reasoning. Quantitative Reasoning.

Required Prerequisite(s): Completion of any 100-level BIO course

Recommended Prerequisite(s): ENG 111, MTH 111

Corequisites: BIO 208L

BIO 208L - Microbiology Lab

Credit Hours: 0, Contact Hours: 0

Division: Science Math

See BIO 208 for course description.

Corequisites: BIO 208

BIO 215 - Genetics

Credit Hours: 3, Contact Hours: 3

Division: Science Math

A comprehensive treatment of classical genetics will be covered in addition to an in-depth study of molecular genetics, research techniques and applications of recombinant DNA technology. A major emphasis will be on the current results of genetic research as it applies to the molecular mechanisms of inheritance, and other topics such as gene therapy, cloning stem cell research and genetically modified organisms. Population genetics will also be covered. Group 1 course. Quantitative Reasoning.

Required Prerequisite(s): Completion of any 100-level BIO course

Recommended Prerequisite(s): ENG 111, MTH 111

BIO 220 - Nutrition in Human Health

Credit Hours: 3, Contact Hours: 3

Division: Science Math

This course is an exploration of the fundamentals of nutrition: energy nutrients, vitamins and minerals. Function and sources of each is presented, as well as the role each plays in maintaining health. Students complete their own Food Intake Record and use this information throughout the semester so as to better understand human nutrition. In addition, study is made of the role nutrition along with other lifestyles plays in the prevention and protection from disease. Discussion also includes the relationship between nutrition and fitness. Group 2 course. Critical Thinking - Direct.

Recommended Prerequisite(s): ENG 111, MTH 111, and completion of any 100-level BIO course

BIO 227 - Human Anatomy & Physiology I

Credit Hours: 4, Contact Hours: 6

Division: Science Math

This course will include an introduction to cells, histology, biochemistry, and homeostasis. In addition, the following systems will be discussed: integumentary, skeletal, muscle, nervous, and special senses. Lecture will be accompanied by lab work and applications, which will stress the anatomy, histology and function of these organ systems. Group 1 lab course. It is highly recommended that students have college level reading skills. Students enrolling in BIO 227 who have not completed these requirements should plan on additional study time. Quantitative Reasoning.

Required Prerequisite(s): MTH 111 and ENG 11/111 or ENG 111 both may be taken concurrently

Recommended Prerequisite(s): CHM 101, HAH 101, and completion of any 100-level Biology course

Corequisites: BIO 227L

BIO 227L - Human Anatomy & Phys I Lab

Credit Hours: 0, Contact Hours: 0

Division: Science Math

See BIO 227 for course description.

Corequisites: BIO 227

BIO 228 - Human Anatomy & Physiology II

Credit Hours: 4, Contact Hours: 6

Division: Science Math

This is the second part of a two-semester course. The second semester will continue major systems in the body including: the endocrine system, cardiovascular system, lymphatic system, respiratory system, digestive system, metabolism, urinary system, fluid balance, reproduction and inheritance. Lecture will be accompanied by lab work, which will stress the anatomy and histology of these organ systems. Group 1 lab course. Quantitative Reasoning.

Required Prerequisite(s): BIO 227, BIO 227L, MTH 111; ENG 11/111 or ENG 111

Corequisites: BIO 228L

BIO 228L - Human Anatomy & Phys II Lab

Credit Hours: 0, Contact Hours: 0

Division: Science Math

See BIO 228 course description.

Corequisites: BIO 228

BIO 240 - Normal and Clinical Nutrition

Credit Hours: 3, Contact Hours: 3

Division: Science Math

Nutrition is considered from a strong biological point of view. Discussions will include a brief overview of principles of normal nutrition and then will proceed to how these principles apply to cause and treatment of specific disease states and the nutrition care process required. Group 2 course. Critical Thinking - Direct.

Required Prerequisite(s): MTH 23

Recommended Prerequisite(s): BIO 227, ENG 111, MTH 111

BIO 255 - Pathophysiology**Credit Hours: 4, Contact Hours: 4**

Division: Science Math

This course covers the etiology, progression, and treatment of disease in the human body. Cellular and tissue structure and function are addressed along with the role of the immune system in body defenses. Disorders and diseases for each body system are covered, including investigation of clinical case studies of pathophysiology. Group 1 course. Quantitative Reasoning.

Required Prerequisite(s): BIO 228, BIO 228L with grade of 2.0 or better

Recommended Prerequisite(s): BIO 208, ENG 111, HNR 107

BIO 268 - Biochemistry**Credit Hours: 3, Contact Hours: 3**

Division: Science Math

This course is a study of the basic fundamentals of the chemical composition of living matter with application of concepts to normal and abnormal human function. Structure and function of proteins, lipids, carbohydrates and nucleic acids will be covered as well as their metabolic interrelationships. The course also covers the most current biochemical techniques, and an investigation of molecular genetics and published findings in the field of biochemistry. Group 1 course. Critical Thinking - Direct.

Required Prerequisite(s): CHM 101 or CHM 150

Recommended Prerequisite(s): BIO 227, BIO 227L, ENG 111, MTH 23

BIO 293 - Biology Study Abroad**Credit Hours: 1, Contact Hours: 1**

Division: Science Math

In this class, students are provided the opportunity to travel to a specified destination affiliated with the corresponding biology non-trip course.

This course will serve to integrate the student learning experience and provide a sense of cultural perspective, diversity and regional awareness.

The course is an opportunity for students to explore other areas around the world while applying discipline-specific course content. For a more specific course description, please review the course description of the associated non-trip course. Group 2 course.

Required Prerequisite(s): BIO 110 and BIO 110L, or BIO 115 and BIO 115L, or BIO 116 and BIO 116L