

# BIOLOGY (BIO)

## **BIO-1201: Biology in the World Today (With Lab) (4 hours)**

Basic biological principles of human impact on the environment. Cannot be used for credit in any science major.

## **BIO-1500: Medical Terminology (3 hours)**

A course for medical terminology. The course will cover word prefixes, suffixes and roots, and provides an opportunity for students to develop a medical vocabulary that is extremely useful for all the preprofessional health careers. Cross-Listed: NSCI-1500.

## **BIO-2011: General Biology I (With Lab) (4 hours)**

An introductory study of living things with emphasis on cell chemistry, structure and function of cells, principles of Mendelian genetics, elementary molecular biology, and principles and mechanisms of evolution. Fee: Required. Prerequisite: C or higher in MAT-1010 or department approval.

## **BIO-2012: General Biology II (With Lab) (4 hours)**

A continuation of BIO-2011 emphasizing the diversity of living organisms, form and function in plants and animals, and principles of ecology. Fee: Required. Prerequisite: C or higher in BIO-2011.

## **BIO-2111: Anatomy and Physiology I (With Lab) (4 hours)**

Basic structure and function of cells, tissues and organ systems of the body; skeletal, muscle, nervous and endocrine systems. Replaces: BIO-2600. Prerequisite: C or higher in BIO-2011.

## **BIO-2112: Anatomy and Physiology II (With Lab) (4 hours)**

A continuation of BIO-2111, including cardiovascular, digestive, respiratory, urinary and reproductive systems; metabolism, thermoregulation, fluid/electrolyte balance. Replaces: BIO-2650. Prerequisite: C or higher in BIO-2111.

## **BIO-2500: Fundamentals of Microbiology (With Lab) (4 hours)**

Principles of microbiology including the structure, classification, cultivation and distribution of microorganisms, use of microbes in biotechnology, properties of pathogenic microbes and host defense.

## **BIO-3215: Microbiology (With Lab) (4 hours)**

Principles of microbiology including an in-depth study of the structure, classification and cultivation of microorganisms including viruses, bacteria and fungi with a heavy emphasis on medical, centenary and biotechnology applications. Prerequisite: C or higher in BIO-2012 and CHE-2211 or CHE-2200 or Department Approval. Fee: Required.

## **BIO-3230: Cell Biology (With Lab) (4 hours)**

Study of physiological, structural and functional properties of both prokaryotic and eukaryotic cells including their interaction with their environment, life cycles and death. Fee: Required. Prerequisite: C or higher in BIO-2012 and CHE-2200 or CHE-2211.

## **BIO-3235: Molecular Biology (With Lab) (4 hours)**

Structure and function of nucleic acids; DNA replication, transcription and translation; regulation of gene expression; recombinant DNA; applications of current molecular techniques in genomics (QTL mapping), forensics, medicine and ecology. Fee: Required. Prerequisite: C or higher in BIO-2012 and CHE-2200 or CHE-2211.

## **BIO-3310: General Ecology (With Lab) (4 hours)**

Biotic communities with an emphasis on local plants and animals. Succession, ecosystem, biogeochemical cycles, energy in ecological systems. Field Trip(s): Required. Fee: Required. Prerequisite: C or higher in BIO-2012.

## **BIO-3990: Palpation Anatomy (3 hours)**

Exploration of medical terminology and gross anatomy through palpation of the human body. The musculoskeletal system will be reinforced through palpation as well as the basic concepts of muscle origins, insertions, innervations and actions. Cross-listed with PES-3990. Prerequisite: C or higher in BIO-2111.

## **BIO-4100: General Nutrition (3 hours)**

The science of nourishing the body by providing the proper nutrients for maintenance of health. Study of dietary nutrients and toxicants and the role of nutrition in optimal health to provide sound, scientific knowledge on which to base wise nutritional choices. Prerequisite: C or higher in BIO-2111, PES-3400 or equivalent or CHE-2300. Cross-listed with PES-4101.

## **BIO-4225: Genetics (With Lab) (4 hours)**

A study of the principles and mechanisms of inheritance including the molecular organization, replication, transmission and expression of genetic traits. Fee: Required. Prerequisite: C or higher in BIO-2012 and Junior standing.

## **BIO-4340: Regulation of Biological Systems (3 hours)**

Systems and processes involved in maintaining homeostasis in plants and animals. Prerequisite: C or higher in BIO-2012.

## **BIO-4400: Forensic Science (3 hours)**

Study and application of science to the process of law including analysis of drugs, different forms of trace evidence, identification of biological fluids, forensic pathology and forensic toxicology. Prerequisite: C or higher in BIO-2012.

## **BIO-4511: Biotechnology (3 hours)**

Principles and applications of modern molecular biology methods. Prerequisite: C or higher in BIO-3215 or BIO-3230.

## **BIO-4710: ACCA - Morton Arboretum Botany (4 hours)**

A limited number of botany courses are offered by the Associated Colleges of the Chicago Area. Consult the Natural Science Department for details on specific courses. Fee: Required.

## **BIO-4720: ACCA - Biology (2 hours)**

Ten-week speaker series on a biological topic. Topic changes each semester. Consult the Natural Science Department for details. A maximum of four hours in BIO-4720 may be applied to a biology program.

## **BIO-4730: ACCA - Shedd Aquarium (4 hours)**

A limited number of biology courses are offered by the Associated Colleges of the Chicago Area. Consult the Natural Science Department for details on specific courses. Fee: Required.

## **BIO-4900: Seminar in Biology (3 hours)**

Readings, discussion and oral and written presentation of current topics in a selected biological area. Cross-Listed: CHE-4901 and EAS-4901. Prerequisite: Senior college standing and 16 hours of biology.

## **BIO-4910: Special Topics: Biology (4 hours)**

An in-depth study of a topic relevant to a current topic in the discipline or a topic of interest that is not addressed in other departmental courses. The course may be repeated for credit so long as the topic is different.

## **BIO-4950: Independent Study in Biology (6 hours)**

Limitations: Department approval: one independent study per semester and cumulative GPA of 2.00; and minimum GPA 2.75 GPA in major.

## **BIO-4990: Internship in Biology (4 hours)**

Limitations: Department approval: Supervised involvement in a biology-related work experience. Prerequisite: Minimum cumulative GPA of 2.75; minimum GPA of 2.75 in 18+ hours of biology.