

BIOLOGY (BIOL)

BIOL 101. Introduction to Biology. (4 Credits)

This course provides a basic introduction to biological principals for non-biology related majors. Lecture topics in this course include: introduction to science, the chemistry of life, cellular organization of life, heredity and natural selection, biological diversity, and population and community ecology. The lab covers a variety of techniques and tools related to the investigation of selected topics in biology. This course has an additional lab fee. 4 credits (3 lecture hours, 2 laboratory hours), fall or spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 102. Botany-Form Function Seed Plt. (3 Credits)

Structure and function of higher vascular plants, with emphasis on cell structure, photosynthesis and respiration, anatomy, physiology, reproduction and Mendelian genetics. 3 credits (2 lecture hours, 2 laboratory hours), fall or spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 103. Botany - Plant Diversity. (3 Credits)

An evolutionary survey of the plant kingdom with emphasis on the structure, life cycles, and significance of non-vascular and lower vascular plants. Prerequisite: BIOL/ENSC 102 or permission of instructor. 3 credits (2 lecture hours, 2 laboratory hours), spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 105. Human Biology. (4 Credits)

A course for non-majors that focuses on human structure, function, diseases and current health topics. Emphasis is on each of the organ systems. Included are lecture discussions on cancer, heredity, genetic engineering, cloning and evolution. 3 credits (3 lecture hours), fall or spring semester Students planning to transfer BIOL 105 as a science course or continue to subsequent biology courses (BIOL 120 or higher) should enroll in the lab BIOL 105L. This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 107. Topics in Contemporary Biology. (3 Credits)

This course covers selected topics in Biology currently in public focus. The understanding and use of the scientific method is stressed. Students will apply their understanding of the scientific method while examining topics such as bioterrorism, stem cell research, and the human genome project and cancer biology. This course is designed for non-science majors. (Actual topics change each semester). 3 credits (3 lecture hours), fall or spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 109. Biology & Literature. (3 Credits)

This course explores topics in the biological sciences through their use as themes in literature. Students will examine major themes in literature by applying their understanding of the Scientific Method and current biology and technology topics. Through writing and discussion they will analyze the influence of the biological sciences on literature, culture and the world. This course is primarily for non-science majors and topics change each semester. Not repeatable for credit. Prerequisite: A letter grade of "C" or higher in COMP 101. 3 credits (3 lecture hours), fall or spring This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 120. General Biology I. (4 Credits)

This course provides the first half of a typical two-semester sequence for biology-related majors. Topics in this part of the sequence are: organization of life, chemistry of living things (including cellular respiration and photosynthesis), cell biology and biological membranes, heredity and reproduction (including mitosis, meiosis and Mendelian genetics), molecular genetics, evolution and ecology. The lab covers a variety of procedures and microscopic studies applied to living things. This course has an additional lab fee. Prerequisite: Placement in BIOL 120 or higher, or successful completion of BIOL 101 or BIOL 105 & 105L with at least a C-. 4 credits (3 lecture hours, 2 laboratory hours), fall or spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 121. General Biology II. (4 Credits)

This course is a continuation of BIOL 120, and assumes mastery of the material covered in it. This second half of the sequence covers: taxonomy of plants and animals, viruses and bacteria, fungi, seedless and seed plants (including plant structure and physiology), animal diversity (an overview of animal phyla), and animal structure and function (including all the life functions and body systems with emphasis on the human). This course has an additional lab fee. Prerequisites: BIOL 120 with a C- or better 4 credits (3 lecture hours, 2 laboratory hours), spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 135. Myology I. (3 Credits)

The study of the muscles of the body; specifically the muscles of the head, neck and trunk with superficial and postural muscles emphasized. The actions of major muscle groups, origin and insertion of each muscle as well as the physical location via palpation. Nerve innervation will be discussed. Students will practice muscle palpation and muscle testing. This course has an additional lab fee. Pre- or Co-requisite: BIOL 150 3 credits (2 lecture hours, 3 laboratory hours), fall semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 136. Myology II. (3 Credits)

This course continues the study of the muscular system with emphasis on the muscle groups and muscles of the extremities. Discussion will focus on the origins, insertion sites and functions of the muscles. Muscle testing will also be included. This course has an additional lab fee. Prerequisite: BIOL 135 with a grade of C or better Pre- or Co-requisite: BIOL 151 3 credits (2 lecture hours, 3 laboratory hours), spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 137. Neurology. (4 Credits)

A detailed study of the nervous system including nerve origin, insertion and function. Topics include the anatomy and physiology of the nervous system including the brain and cranial nerves, spinal cord, nerves and plexuses, and the sensory, motor and autonomic nervous system. The laboratory component is composed of hands-on exercises including computer simulation, physiological testing, and nerve tracing as well as identification of anatomical structures on specimens, models, and microscopic slides. This course has an additional lab fee. Prerequisites: BIOL 151 with a C- or better 4 credits (3 lecture hours; 2 laboratory hours), fall semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 150. Human Anatomy + Physiology I. (4 Credits)

Structure and function of the human body (a systems view). Covers: cells, tissues, skeletal, muscular and nervous systems. The lab includes practical experience with lecture topics including animal dissection. This course has an additional lab fee. Prerequisite: placement in BIOL 120 or higher or completion of BIOL 101 or BIOL 105 & 105L with at least a C-. 4 credits (3 lecture hours, 2 laboratory hours), fall and spring semesters This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 151. Human Anatomy + Physiology II. (4 Credits)

Structure and function of the human body (a systems view). Covers: endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems. The lab includes practical experience with lecture topics and dissection of animals. This course has an additional lab fee. Prerequisite: BIOL 150 with a C- or better, 4 credits (3 lecture hours, 2 laboratory hours), fall and spring semesters This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 230. Human Genetics. (3 Credits)

Introduction to the study of heredity and developmental genetics of the human organism. History, problem-solving and statistical methods will be studied as well as contemporary social and ethical problems. Prerequisites: BIOL 120, or BIOL 150 with a minimum grade of C- 3 credits (3 lecture hours), spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 250. Internship in Biology I. (1 Credit)

A supervised internship to be undertaken in the summer or between semesters. Preparation for the internship will commence in the semester prior to the actual internship. A written and oral report of the internship will be presented. (Students who have completed Allied Health Partnership programs, New Visions, or similar academic internships may use their portfolios to satisfy the requirements of BIOL 250, 251, 252). Prerequisite: Satisfactory completion of at least the first semester of course work in the program; a GPA of at least 2.5 and no less than a C in all courses required in the student's program. 1 credit per course number. The number of courses to be determined by the supervising faculty member. Fall, spring or summer.

BIOL 251. Internship in Biology II. (1 Credit)

A supervised internship to be undertaken in the summer or between semesters. Preparation for the internship will commence in the semester prior to the actual internship. A written and oral report of the internship will be presented. (Students who have completed Allied Health Partnership programs, New Visions, or similar academic internships may use their portfolios to satisfy the requirements of BIOL 250, 251, 252). Prerequisite: Satisfactory completion of at least the first semester of course work in the program; a GPA of at least 2.5 and no less than a C in all courses required in the student's program. 1 credit per course number. The number of courses to be determined by the supervising faculty member. Fall, spring or summer.

BIOL 252. Internship in Biology III. (1 Credit)

A supervised internship to be undertaken in the summer or between semesters. Preparation for the internship will commence in the semester prior to the actual internship. A written and oral report of the internship will be presented. (Students who have completed Allied Health Partnership programs, New Visions, or similar academic internships may use their portfolios to satisfy the requirements of BIOL 250, 251, 252). Prerequisite: Satisfactory completion of at least the first semester of course work in the program; a GPA of at least 2.5 and no less than a C in all courses required in the student's program. 1 credit per course number. The number of courses to be determined by the supervising faculty member. Fall, spring or summer.

BIOL 260. Principles of Zoology. (4 Credits)

This course offers a basic introduction to the animal kingdom, including specific studies pertaining to terrestrial and aquatic invertebrates and vertebrates. Emphasis on zoological organization, identification, structure and life histories. This course has an additional lab fee. Prerequisite: Successful completion of BIOL 120 or an animal life science course, from the School of Agriculture, with at least a C- or better, Environmental & Natural Resource Conservation and Natural Resources Conservation students by permission of instructor. 4 credits (2 traditional lecture hours plus 1 lecture hour with a 2-hour laboratory) This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 280. Herpetology. (3 Credits)

Herpetology is a course designed to investigate the thermal physiology, taxonomy, distribution and natural history of reptiles and amphibians. Emphasis is placed on local forms. Techniques of field identification, collection and preservation are covered in the laboratory component. This course has an additional lab fee. Prerequisite: Grade of 'C' or better in BIOL 120, or General Ecology NATR 101. 3 credits (2 lecture hours, 4 laboratory hours) spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 285. General Microbiology. (4 Credits)

The biology of microscopic organisms including bacteria, fungi, protozoa, algae, and viruses. An introduction to basic principles of microbiology, with an emphasis on morphology, classification, cultivation, growth, physical, and chemical controlling agents, antibiotics, host-parasite interactions, and the benefits of microorganisms including genetic engineering applications. The lab includes proper technique in observation, identification of microbes, and reactions under various physical and chemical conditions. This course has an additional lab fee. Prerequisite: Placement in BIOL 120 or higher or one semester of a college-level biology course (ex. BIOL 101 or BIOL 105 and BIOL 105L with at least a C-). 4 credits (3 lecture hours, 2 laboratory hours), fall or spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 300. Biol Normal & Neoplastic Cells. (3 Credits)

The biology of normal and tumor cells will be examined using current data from population, macroscopic, microscopic, and molecular perspectives. Cell biology topics include cell chemistry, basic genetic mechanisms, internal organization and physiology of the cell, and cell-cell interaction. The cancer biology portion of the course will examine these topics as they occur in neoplastic cells, along with epidemiology, heredity, causation, diagnosis, treatment, and prevention. Pre-requisite: Completion of college biology course (BIOL 120 or higher) with lab, or DANS 120, or ESCI 110 with grade of C or better. 3 credits (3 lecture hours), spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 301. Pathophysiology. (3 Credits)

This course is designed to increase the student's understanding of human diseases caused by alteration of physiologic processes. Emphasis is on advanced pathophysiologic mechanisms and manifestations of disease across the lifespan including genetic and cultural variations. Prerequisites: C- or better in BIOL 151 or ESCI 430 and BIOL 285 3 credits (lecture hours), fall semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 302. Epidemiology. (3 Credits)

The purpose of this courses it to introduce the student to key concepts and methods of descriptive and analytical epidemiology. The utilization of epidemiology by the health profession in culturally diverse populations is reviewed. Disease occurrences and patterns of disease entities including their progression will be examined. Application of epidemiological information will be stressed as well as its relationship to health promotion and disease prevention. Students will utilize critical thinking skills to correlate cause, frequency and distribution of disease processes to infection control, health planning and health policy intervention. Case findings surveillance and screening by health professionals is discussed. Assessing the validity and reliability of health care literature and research studies and it application to epidemiology is also covered. Prerequisites: C- or better in BIOL 285 and MATH 141, MATH 123, BSAD 221, or other statistics 3 credits (3 lecture hours) fall semester 3 credits (3 lecture hours) spring semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.

BIOL 405. Basic Immunology. (3 Credits)

This course is an introduction to the field of immunology for both majors and non- majors. Students will gain an understanding of how the human immune system guards against disease. Included are lecture/ discussions on the components of the immune system, how these components interact, and the end results of these interactions. Relevant clinical topics, such as allergy, autoimmune disease, immunodeficiency diseases (including AIDS), organ transplantation, and cancer will also be discussed. Prerequisites: C- grade or better in the lecture and lab of a college-level biology course (BIOL 120 or higher) with a lab. 3 credits, fall semester This course satisfies the Liberal Arts and Sciences requirement and the SUNY General Education Requirement for Natural Science.