

SCIENCE (SC)

SC-102 - Introduction to Nutrition and Wellness (3 cr)

This course introduces students to the science of nutrition, examination of nutrients, and the study of their digestion, absorption, transport, metabolism, storage and excretion. Students will study the roles of carbohydrates, fats, proteins and other essential nutrients on health and wellness. Students will align the basic nutritional needs with foods and sources satisfying those needs. The consequences of over-, under-, and mal-nutrition will be discussed. Emphasis is placed on the application of nutritional principles to develop healthy and age appropriate diets given various scenarios.

SC-104 - Introduction to Physics (3 cr)

This course is a conceptual physics course for non-science majors. It is the goal of conceptual physics to facilitate student understanding of the rules of nature by learning its foundations. This course covers forces and motion, conservation laws, heat, fluids, vibrations and waves, electricity and magnetism, and sound and light. Students will study the concepts of physics with a minimum of mathematics. The goal of this course is: to provide students an overview of the basic concepts of physics and of scientific principles in general; to make students aware of how physics relates to their everyday and professional lives; to help students understand the principles of physics in the context of how everyday objects work; to introduce the language of physics and the history of scientific discoveries in physics.

Corequisite: MA-115

Designation: Natural Science

SC-106 - Environmental Science (3 cr)

Environmental Science is the study of Earth as a dynamic system, including Earth's atmosphere, biosphere, hydrosphere, and lithosphere. This course is an interdisciplinary study of the effects of human use and misuse of Earth's resources. The course focuses on Earth's natural processes; the role of technology in society, its capacity to alter natural processes, and how it can be used to solve problems caused by human impact, and the complex cultural and social processes of human populations. Topics include Earth's structure and the constant interactions of Earth's spheres. Also studied are population explosion, decline in ecosystems, atmospheric pollution, water pollution, soil pollution, environmental toxicology, and decline in biodiversity.

Designation: Natural Science

SC-112 - General Biology (3 cr)

This course is an introduction to the general principles of biology. It explores the fundamental characteristics of living matter from the molecular level to the ecological community with emphasis on general biological principles. The course provides an introduction to the diversity of living organisms, their structure, function, and evolution. It presents a study of human genetics, development, and anatomy and physiology that enables students to relate to the chemical activities of the cell to the overall function of the human being. The course presents information that will enable the student to understand and recognize the evolutionary and environmental relationships that exist among all organisms. Topics include organization of the human body, metabolism and energy, behavior, genetics, evolution, animal behavior, and ecology. This course is designed for non-science majors.

Designation: Natural Science

SC-114 - Human Anatomy and Physiology I (3 cr)

This is the first lecture course of the Human Anatomy and Physiology sequence. The course focuses on an in-depth study of major biological theories. Topics covered include body organization, chemistry of life and cell function. Gross and microscopic anatomy and physiology of the integumentary, skeletal, muscular, and nervous systems are discussed in detail. Each student is responsible for the dissection of various specimens as well as extensive laboratory exercises involving microscope work, experimental procedures, and mastery of models, charts, and computer programs in anatomy and physiology. Prerequisite: Must have met the requirements for credit Math and English.

Designation: Natural Science

SC-114L - Human Anatomy and Physiology I Lab (1 cr)

This is the first laboratory course of the Human Anatomy and Physiology sequence. Topics covered include microscopy, laboratory safety, body organization, chemistry of life, and cellular and tissue functions for the integumentary, skeletal, muscular, and nervous systems. Laboratory activities will include extensive laboratory exercises involving microscopic examinations, experimental procedures, dissections, reviews of models and charts, and computer programs in anatomy and physiology. The course requires a mastery of factual materials, laboratory techniques, and problem-solving skills. Prerequisite: Must have met the requirements for credit Math and English.

Designation: Natural Science

SC-116 - Human Anatomy and Physiology II (3 cr)

This course is the continuation of Human Anatomy and Physiology I. The course focuses on the gross and microscopic structure and function of the sense organs, endocrine system, blood and cardiovascular systems, lymphatic and immune systems, and the respiratory, urinary, digestive and reproductive systems. The laboratory portion of the course focuses on practical applications of the lecture material including a number of diagnostic and laboratory tests and procedures. Students are responsible for the dissection of numerous preserved specimens.

Prerequisite: SC-114 and SC-114L

Corequisite: SC-116L

Designation: Natural Science

SC-116L - Human Anatomy and Physiology II Lab (1 cr)

This is the second laboratory course of the Human Anatomy and Physiology sequence. Gross and microscopic anatomy and physiology of the autonomic nervous systems, sensory organs, circulatory system, respiratory system, digestive system, urinary system and reproductive system, along with human development are discussed. Laboratory activities include extensive laboratory exercises involving microscopic examinations, experimental procedures, dissections, reviews of models and charts, and computer programs in anatomy and physiology. The course requires a mastery of factual materials, laboratory techniques, and problem-solving skills.

Prerequisite: SC-114 and SC-114L

Corequisite: SC-116

Designation: Natural Science

SC-118 - Principles of Microbiology (3 cr)

This course explores the world of microorganisms, including bacteria, viruses, fungi, and other microbes. Immunology is also studied in this course. Emphasis is placed on the nature and behavior of these organisms and their interrelationship with the human body in health and disease. The principles of prevention and control of infectious diseases are presented. Laboratory exercises develop techniques in the preparation, handling, and identification of a variety of microbial cultures.

Prerequisite: SC-114 and SC-114L;SC-118

Corequisite: SC-118

Designation: Natural Science

SC-118L - Principles of Microbiology Lab (1 cr)

This laboratory course is designed to teach the fundamentals of microbiology through the use of microbial cultures, staining techniques, cell metabolism, disinfection, and sterilization. Isolation of a culture of some normal flora and a survey of bacteria are included. The laboratory experiments are designed to facilitate the student's understanding of the lecture material.

Prerequisite: SC-114 and SC-114L;Must be taken with SC-118

Corequisite: Must be taken with SC-118

Designation: Natural Science

SC-120 - Human Biology (3 cr)

Human Biology is an introductory course examining the fundamental concepts of human structure and function as the starting point for the exploration of principles common to all living systems and the interrelationships between humans and the rest of the biosphere. This course also introduces students to general scientific and biological principles through the study of humans as exemplary organisms. Lecture and laboratory exercises examine the structure and functions of the human body and other organisms in relation to health and disease, genetics, biotechnology, evolution, and current scientific issues. Aspects of health and disease are presented including basic elements of nutrition, exercise, cancer, and chemical addictions. *Prerequisite:* Must have met the requirements for credit Math and English.

Prerequisite: SC-120L

Corequisite: SC-120L

Designation: Natural Science

SC-120L - Human Biology- Lab (1 cr)

This laboratory course emphasizes basic concepts within the field of human biology, as well as important laboratory skills and techniques. The laboratory experiments are designed to facilitate the student's understanding of the lecture material. *Prerequisite:* Must have met the requirements for credit Math and English.

Prerequisite: SC-120

Corequisite: SC-120

Designation: Natural Science

SC-130 - General Chemistry (3 cr)

This course provides an introduction to important theories and concepts in the broad area of general chemistry. The course emphasizes those topics which are essential as preparation for further work in the natural sciences and health care professions. The curriculum focuses on chemical measurements, the architecture of the atom, molecular structure and bonding, chemical reactions and calculations, molecular and chemical formulas, thermochemistry, the mole concept and its applications, and the properties of solids, liquids and gases. Basic problem-solving skills and critical thinking are also emphasized. *Prerequisite:* Must have met the requirements for credit Math and English.

Designation: Natural Science

SC-130L - General Chemistry Lab (1 cr)

This laboratory course is designed to teach laboratory techniques, measurement, chemical reactions, qualitative analysis, and quantitative chemistry techniques. The laboratory experiments are designed to facilitate the student's understanding of the lecture material. *Prerequisite:* Must have met the requirements for credit Math and English.

Designation: Natural Science

SC-145 - Ultrasound Physics (3 cr)

This course offers an overview of ultrasound physics as applicable to the medical field. Emphasis is placed on ultrasound transmission in soft tissues, attenuation of sound energy, parameters affecting sound transmission and resolution of sound beams. Topics include ultrasound wave generation and propagation, transducers, pulse echo imaging, Doppler, bioeffects, and safety. Lecture and Lab.

Prerequisite: DS-105 and MA-115

Designation: Natural Science