

NATURAL SCIENCE (806)

806-112 - Principles of Sustainability

Prepares the student to develop sustainable literacy, analyze the interconnections among the physical and biological sciences and environmental systems, summarize the effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce the use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal and recycling in the U.S., and analyze approaches used by your community to promote and implement sustainability. (Prerequisite: 801-136 English Composition 1)

3 Credit hours

54 Lecture hours

806-134 - General Chemistry

Covers the fundamentals of chemistry. Topics include the metric system, problem solving, periodic relationships, chemical reactions, chemical equilibrium, properties of water, acids, bases and salts, and gas laws. Students should complete math placement or Intermediate Algebra before taking this course. (Prerequisite: Test score required to register) Credit for Prior Learning Available

4 Credit hours

54 Lecture hours

36 Lab hours

806-143 - College Physics 1

Presents the applications and theory of basic physics principles. Emphasizes problem solving, laboratory investigation and applications. Topics include laboratory safety, unit conversions and analysis, kinematics, dynamics, work, energy, power, temperature and heat. (Prerequisite: 804-195 College Algebra with Applications)

3 Credit hours

36 Lecture hours

36 Lab hours

806-177 - General Anatomy and Physiology

Examines basic concepts of human anatomy and physiology as they relate to health sciences. Instructional delivery within a classroom and laboratory setting. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision making and professional communication with colleagues and patients. (Prerequisites: Two semesters high school or one semester college level Chemistry with a C or higher; Test score required to register) Credit for Prior Learning Available

4 Credit hours

54 Lecture hours

36 Lab hours

806-179 - Advanced Anatomy and Physiology

Advanced Anatomy and Physiology is the second semester in a two-semester sequence in which normal human anatomy and physiology are studied using a body systems approach with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Instructional delivery within a classroom and laboratory setting. Experimentation within a science lab will include analysis of cellular metabolism, the individual components of body systems such as the nervous, neuro-muscular, cardiovascular, and urinary. Continued examination of homeostatic mechanisms and their relationship to fluid, electrolyte, acid-base balance and blood. Integration of genetics to human reproduction and development are also included in this course. (Prerequisite: 806-177 General Anatomy and Physiology)

4 Credit hours

54 Lecture hours

36 Lab hours

806-186 - Introduction to Biochemistry

Provides students with skills and knowledge of organic and biological chemistry necessary for application within Nursing and other Allied Health careers. Emphasis is placed on recognizing the structure, physical properties and chemical reactions of organic molecules, body fluids and acids. Additional emphasis is placed on biological functions and their relationships to enzymes, proteins, lipids, carbohydrates and DNA. (Prerequisite: 806-134 General Chemistry or high school or college chemistry with a C or better)

4 Credit hours

54 Lecture hours

36 Lab hours

806-189 - Basic Anatomy

Examines concepts of anatomy and physiology as they relate to health careers. Students correlate anatomical and physiological terminology to all body systems. This course is intended for programs that involve indirect patient care, i.e., Health Information Technology, Clinical Coding, etc. This is not an acceptable course in health-related programs that involve direct patient care, i.e., Nursing, Radiologic Technology, Surgical Technology, etc. This course is not acceptable as a course substitution for 806-177 General Anatomy and Physiology. (Prerequisite: Test score required to register) Credit for Prior Learning Available

3 Credit hours

54 Lecture hours

806-197 - Microbiology

Examines microbial structure, metabolism, genetics, growth and the relationship between humans and microorganisms. Addresses disease production, epidemiology, host defense mechanisms and the medical impact of microbes. Presents the role of microbes in the environment, industry and biotechnology. (Prerequisite: 806-177 General Anatomy and Physiology)

4 Credit hours

54 Lecture hours

36 Lab hours

806-207 - Anatomy and Physiology 1

Examine basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, this course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare healthcare professionals to apply basic concepts of whole-body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. (Prerequisite: Test score required to register)

4 Credit hours

54 Lecture hours

36 Lab hours

806-208 - Anatomy and Physiology 2

Anatomy and Physiology 2 features lectures and laboratory exercises dealing with the human body as an integrated structural and functional unit including the cardiovascular system, lymphatic system and immunity, respiratory system, digestive system and metabolism, urinary system, fluid/electrolyte balance and acid/base balance, and reproductive system. Note: this is the second semester course of a two-semester sequence and is not acceptable where a one-semester Anatomy and Physiology course is required. (Prerequisite: 806-207 Anatomy and Physiology 1)

4 Credit hours

54 Lecture hours

36 Lab hours

806-209 - College Chemistry 1

General college chemistry which includes the topics of measurement, chemical nomenclature, chemical reactions and stoichiometry, atomic structure, gas laws, thermochemistry, chemical bonding and solution chemistry. The course is for students who need the first one of two semesters of what is typically considered freshman university level chemistry for science majors and university transfer students. Laboratory work assists in understanding chemical concepts and developing problem-solving skills. (Prerequisite: 804-118 Intermediate Algebra with Applications or test score)

5 Credit hours

72 Lecture hours

36 Lab hours

806-212 - College Chemistry 2

College Chemistry 2 is a continuation of College Chemistry 1. This course covers the principles and applications of organic chemistry, reaction kinetics, equilibrium, thermodynamics, electrochemistry, coordination compounds, nuclear chemistry and environmental chemistry. Lab activities explore traditional analytical chemistry techniques, making extensive use of computer-assisted data analysis. This course involves rigorous quantitative problem solving, and a solid mathematics background is recommended. (Prerequisite: 806-209 College Chemistry 1)

5 Credit hours

72 Lecture hours

36 Lab hours

806-234 - General Biology

Examines fundamental principles of biology with a focus on cellular biology, metabolic processes, genetics, and evolution. Addresses the chemical foundations of living things, cell structure and function, energy production by cells, cellular reproduction, inheritance, molecular genetics, and principles of evolution. Laboratory work reinforces course concepts and emphasizes scientific thinking skills. This course provides one of the two semesters of general biology content typically offered for science majors and university transfer students. (Prerequisite: Test score required to register)

4 Credit hours

54 Lecture hours

36 Lab hours

806-375 - Applied Science

Analyzes basic mechanical and electrical science concepts. Theoretical applications that relate to occupational situations are developed.

Mathematical calculations and conceptual models are used throughout the course. (Prerequisite: 804-363 Algebraic Applications for Electrical Trades)

2 Credit hours

72 Lecture hours