Course Descriptions

Course Code: BIO310 Course Title: Biology I (4 units)

Course Description: This course is a comprehensive examination of the human organism. It begins with a survey of the principles and structures characteristic of all living things. The remainder of the biology course focuses on molecular biology, biochemistry, cell biology, histology, and genetics. *In addition to coursework, exams and quizzes, students will research, prepare and write an APA style term paper on some aspect of biological science or chemistry in relation to: acupuncture and oriental medicine, chiropractic, Ayurveda medicine, homeopathy, naturopathy or related; with special considerations on factors associated with etiology, diagnosis and treatment (Student Portfolio Project 2).

Course Code: BIO315 Course Title: Biology II (4 units)

Course Description: Prerequisite: Biology 1 or equivalent. Biology 2 course continues with a comprehensive examination of the human organism. It focuses on histology, anatomy, and physiology of the major organ systems found in the human body. Nutrition and evolution are also discussed. Students gain an understanding of the structure and function of the human body on a variety of complex levels.

Course Code: CHEM310 Course Title: General Chemistry I (4 units)

Course Description: Within this course, students become conversant with the scientific vernacular, chemical symbols and notation. Students will manipulate mathematical equations in order to appreciate the quantitative nature of atomic interactions. States of matter will be categorized. The Periodic Table of the Elements will be studied to illustrate chemical periodicity and bonding. The gas laws will be introduced in order to understand statistical handling of large populations of atoms and molecules. The laws of thermodynamics will be introduced, including the concepts of enthalpy and entropy. Students will research, prepare and write an APA style term paper on some aspect of biological science or chemistry (Student Portfolio Project 3).
Course Code: CHEM315 Course Title: General Chemistry II (4 units)

Course Description: Prerequisite: General Chemistry 1 or equivalent. The General Chemistry 2 course further develops the concepts of chemical bonding in order to appreciate the size, shape, polarity and macroscopic behavior of molecules. The processes of oxidation-reduction will be explained, particularly as they apply to biological systems. Solution chemistry will be introduced, stressing the concepts of equilibriums and colligative properties. Acid/base chemistry, including titrimetry, buffers, and pH will be studied. Nuclear chemistry in the evolution of matter will be considered. Organic chemistry will be introduced as a corollary to concepts presented in the college chemistry course.

Course Code: PHYS310 Course Title: Physics I (4 units)

Course Description: This non-calculus, algebra/trigonometry based college physics course will include the following topics: Motion in one and two dimensions, velocity, acceleration, forces and Newton's Laws of motion, linear and angular momentum, circular motion, center of mass, torque, mechanics of rigid bodies, work, kinetic energy, and potential energy, Newton's Law of gravitation, Kepler's Laws, and simple harmonic motion. Problem solving skills will be strongly emphasized.

Course Code: PHYS315 Course Title: Physics II (4 units)

Course Description: Prerequisite: Physics 1 or equivalent. This course will review and include the following topics: Sound, wave interference, geometrical optics, heat, temperature, gas laws, thermodynamics, electricity, magnetism, relativity, quantum mechanics, and nuclear physics. A non-calculus approach will be used with only as much algebra and trigonometry as is required to give a precise treatment of physical problems. Problem solving will be emphasized.
Course Code: CHEM410 Course Title: Organic Chemistry I (4 units)
Course Description: Prerequisites General Chemistry I and II or equivalents. The course will begin with a review of some of the major concepts in inorganic chemistry. The chemistry of carbon compounds will be distinguished from inorganic chemistry. The various classes of aliphatic and aromatic compounds will be examined. The diversity of functional groups will be explored with regard to reactivity and mechanism. Nucleophilic and electrophilic reaction mechanisms will be stressed. Stereochemistry will be explored. Concepts of hydrophobicity and hydrophilicity will be examined in relation to extraction, phase partitioning, absorption and chromatography. Biochemical and physiological analogies will be reviewed.

Course Code: CHEM415 Course Title: Organic Chemistry II (4 units)
Course Description: Prerequisite Organic Chemistry I or equivalent. This course further elaborates functional groups with emphasis on alcohols, phenols, ethers, aldehydes, ketones, amides, esters, amines, and carboxylic acids once the nature and reactivity of these functional groups is understood, important biological examples will be stressed and elaborated. Biochemistry, particularly the properties and metabolism of biological macromolecules such as nucleic acids, lipids, and proteins will be introduced.

Course Code: BIO320 Course Title: Anatomy and Physiology I (4 units)
Course Description: This course will provide a solid overview of the structure and function of the human body and mechanisms for maintaining homeostasis. Topics include the study of cells, tissues, and the integumentary, skeletal, muscular and nervous systems. Emphasis is placed on the integration of systems as they relate to normal health. Laboratory exercises provide first-hand experience with the structures and processes discussed in lecture.
Course Code: BIO320 Course Title: Anatomy and Physiology II (4 units)

Course Description: Prerequisite Anatomy and Physiology I or equivalent. This course will focus on the structure and function of the human body and mechanisms for maintaining homeostasis. Topics include the study of blood, cardiovascular system including lymphatic system, immune system, respiratory system, digestive system, urinary system and male and female reproductive systems. Emphasis is placed on the integration of systems as they relate to normal health. Laboratory exercises provide first-hand experience with the structure and processes discussed in lecture.

Course Code: BIO420 Course Title: Biochemistry (4 units)

Course Description: Prerequisite: General Chemistry 1 or equivalent, Organic Chemistry 1 or equivalent. Biochemistry examines the structure and function of the following biological macromolecules in the context of cellular integrity, dynamics and metabolism: carbohydrates, lipids, proteins and nucleic acids. The weekend biochemistry topics include enzymology, bioenergetics, catabolism, anabolism, regulation of gene expression, biotechnology, and hormone regulation of mammalian metabolism and the pre-biotic evolution of life on earth. This course is designed to enhance, deepen, and further integrate knowledge of the subject by developing different problem-solving skills and conceptual organization.

Course Code: BIO330 Course Title: Microbiology (4 units)

Course Description: The course is designed to convey general concepts, methods, and applications of microbiology for health sciences. The role of microorganisms in the environment and in human disease is discussed. Topics include: immunology, bacteriology, virology, and mycology; the morphology, biochemistry, and physiology of microorganisms including bacteria, viruses, and fungi; the diseases caused by these microorganisms and their treatments. Laboratory portion of the course provides first hand experiences that inform, illustrate, expand, and reinforce major concepts discussed in lecture.
Course Code: BIO430 Course Title: Human Genetics (4 units)

Course Description: This course will address the human nature of genetics, genetic development and health and wellness areas related to how genes interplay within the human organism. Historical concepts in research and genetic developments will be explored. Additionally, concepts related to ethics and genetics, research and application will be explored. Students will learn how genes influence physical traits, physiological considerations, and issues related to health, wellness and related applications.

Course Code: BIO440 Course Title: Biological Psychology (4 units)

Course Description: This course will focus on the central nervous system and how it applies to abnormal behavior. The structure and function of the brain as it relates to thoughts, action, and behavior patterns will be explored. Topics include psychosocial diseases, learning, memory, language, sleep cycles, human sexuality, and addiction. Students will recognize the way biology, anatomy, and physiological factors of the human nervous system apply to psychological problems.

Course Code: IH450 Course Title: Integrative Health: Alternative Medicine and Complimentary Care (4 units)

Course Description: This course is designed as a cornerstone course. The course will provide a survey of alternative medicine approaches and complimentary care areas. Coursework will include history of alternative medicine and complimentary care. These will include Acupuncture and Oriental Medicine, Chiropractic, Massage Therapy, Midwifery, Ayurveda Medicine, Homeopathy, and Naturopathic Medicine. *In addition to coursework, exams, quizzes and readings, students will research, prepare and write an APA style term paper on the history, current state of and future direction associated with integrative medicine, integrative health care and inter-professional practice (Student Portfolio Project 4).
Course Code: IH460 Course Title: Integrative Health Elective (4 units)

Course Description: Prerequisite Integrative Health and approval of instructor. This elective will be chosen from a menu of courses offered through: Chiropractic, Acupuncture and Oriental Medicine, Ayurveda Certificate Program and/or Massage Therapy Certificate Program. Courses may include those relevant to integrative health, public health, and courses that introduce topics of integrative health and inter-professional practice.

Course Code: BIO470 Course Title: Integrative Health Field Practicum (4 units)

Course Description: This course will include a placement within a field practicum. The field practicum must be approved and consist of a non-profit organization that provides integrative health or alternative or complimentary medicine. The student will volunteer and provide weekly status reports and gain knowledge and experience first-hand as they provide services for a community agency. Students will connect this experience to their capstone project/thesis. *In addition to coursework, exams, quizzes and readings, students will research, prepare and write an APA style term paper on their field practicum experience as it relates to biological research, integrative medicine, integrative health care and/or inter-professional practice. Additionally, field practicum evaluations will be included within the students portfolio file (Student Portfolio Project 5).

Course Code: BIO480 Course Title: Integrative Health Capstone/Thesis (4 units)

Course Description: The student will prepare a review of the literature on a topic related to integrative health, inter-professional care, alternative, complimentary medicine or related. The thesis will explore advances, challenges and opportunities and highlight new directions and novel approaches to training, education, etiological considerations, diagnosis and relevant treatment options. This capstone project will be guided by a faculty member and prepared in ways that could be presented at regional or national conferences and as warranted prepared for publication (Student Portfolio Project 6).