

Health Sciences--Exercise Physiology (HSEP)

HSEP 3010. Exercise Testing and Prescription I. 3 Hours.

Prerequisite: Admission to Exercise Physiology Program. A concentrated study of the principles of exercise testing and prescription for the apparently healthy adult including the health appraisal, risk assessment and interpretation of data. The American College of Sports Medicine exercise guidelines are emphasized.

HSEP 3011. Exercise Testing and Prescription II. 4 Hours.

Prerequisites: A grade of "C" or better in HSEP 3010. A continuation of HSEP 3010, with emphasis on cardiovascular, pulmonary, and metabolic disease; the role the mechanism of action for medications such as alpha and beta blockers, calcium channel blockers, ACE inhibitors, nitrated, peripheral vasodilators, and diuretics. Additional classifications to be reviewed include inotropic, anti-arrhythmic, anti-thrombosis, lipid-lowering, hypo/hyperglycemic, anti-inflammatory, and bronchodilators.

HSEP 3020. Fitness and Performance Testing in Exercise Physiology. 4 Hours.

Prerequisites: Admission to the Exercise Physiology Program. Development of knowledge, skills, and abilities in selecting, administering, and interpreting standardized health, athletic, and physiological-related physical fitness tests.

HSEP 3050. Prevention of Exercise Related Injuries and Conditions. 3 Hours.

Prerequisites: A grade of "C" or better in HSEP 3430. A study of common musculoskeletal injuries and conditions related to physical activity. Strategies to reduce risks, standard treatment protocols, and modification of the exercise prescription will be emphasized.

HSEP 3200. Nutrition for Health and Human Performance. 3 Hours.

Prerequisites: HSEP 3420 with a grade of "C" or better, or permission of instructor and Exercise Physiology Program Coordinator if admitted Nutrition minor. An introduction to the characteristics of the essential dietary nutrients and their respective roles in the body. Emphasis is placed on the effects of nutritional practices on health and human performance.

HSEP 3360. Chronic Disease Epidemiology. 3 Hours.

Prerequisites: Acceptance to the Exercise Physiology Program. Introduction to the distribution and determinants of chronic diseases in the population. Causal relationships laying the groundwork for programs of prevention and control emphasized. Commonly used epidemiological statistics and research methods discussed.

HSEP 3420. Exercise Physiology. 3 Hours.

Prerequisite: Admission to Exercise physiology. An understanding of how the body, from a functional standpoint, responds, adjusts, and adapts to exercise. Topics include bioenergetics, neuromuscular concepts, cardiorespiratory considerations, physical training, and environmental concerns involving physical activity, athletic performance, and health-related fitness.

HSEP 3430. Structural Kinesiology. 3 Hours.

Prerequisites: Completion of Progression Requirements of Professional Program. Basic physical concepts as they apply to human movement are explored. Structural anatomy, neuromuscular physiology and biomechanical principles as they apply to sport skills and fitness activities are emphasized.

HSEP 3650. Resistance and Training Program Development. 3 Hours.

Prerequisites: A grade of "C" or better in HSEP 3430. A study of scientific basis and development, of health and sports related muscular fitness and flexibility programs for diverse populations and settings using a variety of training modalities. Based upon competencies required for ACSM, and MSCA certifications.

HSEP 4040. Pediatric Exercise Physiology. 3 Hours.

Prerequisites: A grade of "C" or better in HSEP 3420. The physiological differences between children and adults relative to exercise performance. Variables such as size, biomechanics, neuromuscular, reproductive, hormonal, and cardiovascular-respiratory differences will be examined.

HSEP 4050. Applied Resistance Training for Specific Populations. 3 Hours.

Prerequisite: A grade of "C" or better in HSEP 3650. Specific program design and facilitation for sport, occupation, and health including the tactical athlete. Special emphasis on needs analysis, periodization, energy balance, and injury prevention. The course based upon competencies required for ACSM and NSCA certifications.

HSEP 4070. Exercise Cardiopulmonary Physiology. 3 Hours.

Prerequisites: A grade of "C" or better in HSEP 3420. A concentrated study in the exercise physiology of the healthy and diseased cardiopulmonary system. Emphasis on cardiopulmonary adaptations to acute and chronic exercise and on normal versus abnormal conditions and their effects on exercise testing and training.

HSEP 4080. Exercise Electrocardiography. 3 Hours.

Prerequisites: A grade of "C" or better in HSEP 3420. A basic understanding of the 12-lead electrocardiogram as it relates to graded exercise testing, training, and functional evaluation. The course is designed particularly to assist the clinical exercise physiologist in developing the skills required for quickly identifying electrocardiographic patterns at rest and during exercise.

HSEP 4130. Exercise Cardiopulmonary Rehabilitation. 3 Hours.

Prerequisites: A grade of "C" or better in HSEP 3011, and HSEP 4080. A study of multi-phasic and multi-disciplinary programs designed to restore to a productive life the individual with cardiopulmonary disease. Common medical treatments and diagnostic procedures and treatments reviewed. Emphasis on the American College of Sports Medicine and the American Association of Cardiovascular and Pulmonary Rehabilitation guidelines.

HSEP 4140. Professional Practices in Exercise Physiology. 3 Hours.

The study of potential roles and responsibilities of an Exercise Physiologist, practices in healthcare, as they relate to the profession, communication with the healthcare team. Principles of business management and marketing associated with developing and managing an allied health practice will also be discussed.

HSEP 4160. Exercise Psychology. 3 Hours.

Prerequisites: Admission into the Exercise Physiology degree program. A study of behavioral factors that effect physical activity and exercise and their impact on morbidity and mortality. Major psychological theories that have been applied to physical activity and exercise will be discussed as well as behavioral interventions to promote healthy behaviors.

HSEP 4210. Clinical Exercise Physiology. 3 Hours.

Prerequisites: A grade of "C" or better in HSEP 3010. An advanced course in the physiology of exercise as it relates to the clinical exercise physiologist or health care professional. The integration of the body's various systems relative to the prevention and therapeutic role of exercise will be examined. Case study assignments will focus on problem-oriented management of subjective and objective data.

HSEP 4510. Exercise Physiology Practicum. 4 Hours.

Prerequisites: Successful progression and retention requirements as per the program of study for the Exercise Physiology degree program and permission of the instructor. Current CPR certification. A laboratory capstone course for evaluation, review, and mastery of the competencies required for the clinical and applied exercise physiologist per ACSM guidelines prior to enrollment in HSEP 4550.

HSEP 4550. Exercise Physiology Internship. 12 Hours.

Pre-requisites: A grade of "C" or better in all course requirements for the Exercise Physiology Bachelors of Science degree except HSEP 4550; current AHA Basic Life Support for Health Care Providers CPR certification; current liability insurance; and any other requirements specific to internship site. Completion of a major project or paper related to some aspect of the internship site, teach at least two educational classes, and submit a weekly log of their daily activities. The internship site must reflect an area directly related to the field of clinical or applied exercise physiology. The student is required to work 40 hours per week for a minimum of 10 weeks, or 400 cumulative hours. The student is required to sit for at least one of the following professional certification examinations: American College of Sports Medicine Certified Exercise Physiologist or National Strength and Conditioning Certified Strength and Conditioning Specialist prior to the end of the semester in which the course is taken and submit copies of the certification exam results, preceptor evaluation, and an exit survey to the course instructor before a final grade can be assigned.