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. 3 Hours.
Prerequisite: 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.
Prerequisite: A grade of "C" or better in HSEP 3430 and successful progression and retention requirements as per the program of study of the Exercise Physiology degree program. 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 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.
Prerequisite: 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 the Exercise Physiology Program. 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. Applied Exercise Musculoskeletal Interventions. 3 Hours.
Prerequisite: A grade of "C" or better in HSEP 3430. Application of scientific principles for evaluating and developing exercise-based interventions to improve general health and physical performance in adult populations. The course emphasizes musculoskeletal hypertrophy, strength, endurance, power, and flexibility; and interventions using various modalities for diverse populations and settings.

HSEP 4040. Pediatric Exercise Physiology. 3 Hours.
Prerequisite: 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. Principles of Strength and Conditioning for Athletic Performance. 4 Hours.
Prerequisite: A grade of "C" or better in HSEP 3650 and successful progression and retention requirements as per the program of study of the Exercise Physiology degree program. A comprehensive study of training theory and methods for developing physical abilities as they relate to athletic performance. Topics include neuromuscular, musculoskeletal, endocrine, and bioenergetic aspects of exercise and training. The course addresses the principles underlying the development of hypertrophy, strength, power, speed, agility, and anaerobic capacity, and covers lifts, drills and tests relevant to strength and conditioning practitioners. The National Strength and Conditioning Association's Certified Strength and Conditioning Specialist competencies will be emphasized.

HSEP 4070. Exercise Cardiopulmonary Physiology. 3 Hours.
Prerequisite: 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.
Prerequisite: 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.
Prerequisites: Successful progression and retention requirements as per the program of study of the Exercise Physiology degree program. The study of potential administrative and management roles and responsibilities of the exercise physiologist. The course will address practices for professional development and behavior as well as job searching and application, scope of practice, ethics, legal issues, evidence-based practice, fiscal management, marketing, facility operations, risk management, and human resource management.

HSEP 4160. Exercise Psychology. 3 Hours.
Prerequisite: Admission into the Exercise Physiology degree program. A study of psychological factors that influence physical activity and exercise behavior and heir impact on human performance and physical and mental health. The course addresses major psychological theories and behavioral interventions that promote exercise participation, engagement in health behavior change, and optimize athletic conditioning.

HSEP 4210. Clinical Exercise Physiology. 3 Hours.
Prerequisite: A grade of "C" or better in HSEP 3011 and successful progression and retention requirements as per the program of study of the Exercise Physiology degree program. 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.
Prerequisite: Successful progression and retention requirements as per the program of study of the Exercise Physiology degree program, permission of the instructor, a returned graduation application from the Registrar and good academic standing as per VSU policy. A lecture and laboratory course for evaluation, review, and mastery of competencies for the exercise physiology degree prior to enrollment in HSEP 4550.

HSEP 4550. Exercise Physiology Internship. 12 Hours.
Prerequisites: A grade of "C" or better in all course requirements for the Exercise Physiology Bachelors of Science degree except HSEP 4550; submission of internship agreement, prof of CPR/AED certification, professional liability insurance coverage, immunization record, background check, drug screen clearance, and any other requirements specific to internship site or VSU. A capstone experiential learning experience at a professional workplace that reflects an area directly related to exercise physiology such as strength and conditioning, clinical exercise physiology, or fitness and wellness. Students are required to complete at a minimum 10 weeks and 400 cumulative hours, with no more than 40 hours per week permissible. The course includes reports of daily activity and coursework reflection teaching, educational in-services, and evaluation of internship and the Exercise Physiology degree program. Te student must sit for the ACSM EP-C or NSCA CSCS exam and submit copies of the certification exam results.