Health Sciences--Exercise Physiology (HSEP)

HSEP 6050. Applied Resistance Training for Specific Populations. 3 Hours.
Prerequisites: Admitted to the masters' degree in Exercise Physiology or consent of instructor. Specific program design and facilitation for sport, occupation, and health including the tactical athlete. The course emphasizes needs analysis, periodization, energy balance, and injury prevention based on ACSM and NSCA certifications.

HSEP 6080. Exercise Electrocardiography. 3 Hours.
An introduction 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 6160. Exercise Psychology. 3 Hours.
Prerequisites: Admission into the graduate program or permission of the instructor. This course will review the relation of physical activity and physical fitness to stress and mental health, and explanatory models of exercise patterns.

HSEP 7000. Research Methods in Exercise Physiology. 3 Hours.
An advanced study of the research process, including the development of the research question and hypothesis, review of the literature, research design, data acquisition and analysis, and scientific writing.

HSEP 7010. Advanced Exercise Physiology. 3 Hours.
Prerequisites: Graduate Admission status. A study of the applied principles of physiology with special emphasis on the integration of organ systems in adapting to the requirements of muscular activity during exercise. The course will also include applied laboratory experiences/assignments within the Human Performance Laboratory and outside the classroom.

HSEP 7020. Advanced Exercise Physiology II. 3 Hours.
Prerequisite: Admitted to the master's degree program in Exercise Physiology or consent of instructor. a continuation of advanced study of the applied principles of exercise physiology with special emphasis on the cardiovascular system, gas transport, and physiological challenges, responses, and adaptations to environmental extremes.

HSEP 7060. Exercise Physiology Laboratory Methods. 3 Hours.
Prerequisite: Admission into the graduate program or permission of the instructor. A study of common evaluative, diagnostic, and experimental procedures used in exercise physiology. The course provides theoretical and laboratory experiences for the evaluation of human performance and hands-on exposure to cardiopulmonary stress testing, metabolic testing, body composition assessment, muscular strength and endurance evaluation, biomechanical analysis, health risk appraisal, and other assessment methods.

HSEP 7100. Advanced Pathophysiology. 3 Hours.
Also offered as NURS 7100. Prerequisite: Graduate admission status or permission of the instructor. Advanced principles of human physiology and pathogenesis of disease. This course builds on basic knowledge of pathophysiology, focusing is on etiology, pathogenesis, and clinical manifestations of disease processes commonly encountered in the clinical setting.

HSEP 7120. Environmental and Occupational Physiology. 3 Hours.
Prerequisites: Admission into the graduate program or permission of the instructor. The analysis of human performance and functional capacity in various environmental and occupational settings. Topics will include, but are not limited to, tissue disorders, human physical capabilities and limitations, pre-employment testing, work-site analysis and the prevention of illness and injury.

HSEP 7170. Advanced Exercise Testing & Prescription for Special Populations. 3 Hours.
Prerequisite: Admission into the graduate program or permission of the instructor. The student will examine the recommended exercise testing and prescription methodology for the apparently healthy, athletic and those with various diseases and disabilities. Emphasis is placed upon the physiological responses and adaptations of individuals based on gender, ethnicity, and age to cardiovascular and resistance training. Research surrounding the role of exercise in women's health will be reviewed. Special emphasis will be placed upon the endocrine, immune, cardiopulmonary, reproductive, neurological and musculoskeletal system.

HSEP 7200. Exercise and Nutrition as Medicine. 3 Hours.
Prerequisite: Admission to te master's degree program in Exercise Physiology or consent of instructor. An advanced study of the impact of exercise and nutrition in optimizing human performance and the effectiveness in the management, treatment, and reversal of cardiovascular and metabolic disease.

HSEP 7400. Exercise Physiology Seminar. 3 Hours.
Prerequisite: Admission into the graduate program or permission of the instructor. Advanced study of exercise physiology requiring lecture, discussion, reading and synthesis of the current literature, and student presentations. Topics will change each time the course is offered. Course must be taken twice for credit.

HSEP 7950. Exercise Physiology Internship. 3-6 Hours.
Prerequisite: Completion of all academic coursework, graduation checklist, and satisfactory score on the written and oral comprehensive examination. The student is required to work a minimum of 20 hours per week. Required completion of 100 or 200 supervised contact hours for 3 or 6 credits, respectively at an approved internship site. Students must enroll in a minimum of 6 hours for HSEP 7950 prior to graduation. HSPE 7950 may be repeated for credit.

HSEP 7990. Directed Study in Exercise Physiology. 1-3 Hours.
Prerequisites: Admitted to the masters' degree program in Exercise Physiology and consent of instructor. Specialized study in Exercise Physiology under the direction of a Health Science graduate faculty member.

HSEP 7999. Thesis. 1-6 Hours.
Prerequisite: Permission of student's major thesis advisor. Original research towards the thesis. Students must enroll in a minimum of 6 hours for HSEP 7999 prior to defense of the thesis. HSEP 7999 may be repeated for credit.