

APPLIED EXERCISE SCI - MASTERS (MSES)

MSES 540. Applied Kinesiology. (3 Credits)

This course is an examination of human movement mechanics in applied settings. Focus will be placed on functional assessment, training and conditioning, rehabilitation, and injury prevention. Advanced application of arthrokinematics, musculoskeletal function, and relative biomechanics as they relate to evidenced based science will be the focus of class content.

Prerequisite: None

MSES 545. Cardiorespiratory Exerci Phys. (3 Credits)

this course will focus on the mechanisms involved in the adjustments the cardiorespiratory system is required to make to meet the metabolic demands of physical activity. Acute adjustments as well as chronic adaptations of the cardiorespiratory system will be examined in healthy and special populations. A laboratory component allows for skill achievements in exercise testing. 3 credits.

Prerequisite: None

MSES 550. Seminar in Exercise Science. (3 Credits)

This course provides an overview of contemporary and often controversial health issues with analysis of selected problems of current concern to society. Throughout the course, evidence-based principles will be utilized to ensure professional practices are safe, effective, and efficient. Evidence based principles and guideline development is the foundation of many practices including medicine, physical therapy, athletic training, exercise science research, and the development of public health guidelines. This is an experiential class that further develops students to be prepared for an actual workplace environment. Following instructions, asking clarifying questions, contributing to group activities in written and oral formats, and taking responsibility for all work products are key components. This class requires a high level of participation including completion of all in class activities and assignments.

Prerequisite: None

MSES 560. Practicum in Exercise Science. (3-6 Credits)

This course provides an opportunity for a graduate level student to gain valuable practical experience in an exercise physiology setting. This experience is aligned with the student's individual career or graduate study goals. The student will be able to demonstrate and apply the knowledge and skills they have learned in classroom and lab activities to a professional setting. Additionally, students are given the opportunity to network within their chosen profession. This practicum is a dynamic program that will respond to change as warranted.

Prerequisite: None

MSES 563. Clinical Ex Physiology. (3 Credits)

The course will provide an understanding of the historical perspective, current status and future direction of cardiovascular prevention and rehabilitation programs. An emphasis will be placed on cardiac rehabilitation but will add a recent American Heart Association recommendation identified as cardio-oncology rehabilitation. Pathophysiology of ischemic heart disease, heart failure, peripheral vascular disease and cancer will be emphasized. Electrocardiographic analysis and basic background in medications will be included.

Prerequisite: None

MSES 565. Neuromuscular Exerc Physiology. (3 Credits)

This course provides an examination of acute and chronic responses of the nervous and musculoskeletal systems to physical activity. The anatomy and physiology of the nervous and musculoskeletal systems will be covered. Methods of enhancing the function of the neuromuscular system in healthy and diseased populations will be explored.

Prerequisite: None

MSES 569. Research Methods. (3 Credits)

This course provides an examination of the methods commonly used to design, implement and evaluate research in the exercise sciences. The course includes the study of descriptive, quantitative and qualitative research methods, as well as techniques of literature review and reporting of research. Students enrolled in this course will complete a draft of the first three chapters for either a thesis or capstone project proposal.

Prerequisite: None

MSES 600. Thesis. (1-6 Credits)

this course is designed to help students hone their research skills through the implementation of a research proposal under the advisement of a faculty member. Students will propose a research project, get IRB approval, perform data collection, and analyze their data. Additionally, students will write up results in a complete thesis document. Students are expected to work semi-independently with their thesis adviser and must produce scholarly work. Students must also orally defend the thesis in a public forum. 1 to 6 variable credits.

Prerequisite: MSES 569 Research Methods.

MSES 601. Graduate Capstone Project. (1-6 Credits)

this course will allow the student to propose and complete a rigorous project that is different than a traditional master's degree research oriented thesis. If the capstone project is proposed, approval must be obtained from a majority of the graduate level faculty in the Department of Health and Human Performance. This course would be taken in place of MSES 600 Thesis. 1 to 6 variable credits.

Prerequisite: MSES 569 Research Methods.

MSES 757. Bioenergetcs & Weight Control. (3 Credits)

This course is designed to provide an understanding of the metabolic processes affecting weight control as well as practical approaches to the clinical management of weight issues. Specific topics include the pathways of energy metabolism, effectiveness of diet and exercise, FDA approved weight loss medications, clinical conditions associated with obesity, assessment of body composition, measurements of activity and energy expenditure, bariatric surgery, special populations, as well as the clinical effects of prolonged obesity.

Prerequisite: None

MSES 820. Basic Statistics. (3 Credits)