**Exercise Science (EXSC)**

**Courses**

**EXSC 5023. Advanced Teaching in Exercise Science (Sp, Su, Fa). 3 Hours.**
Examination and practical exposure to the principles and practices of undergraduate teaching in exercise science. Includes course planning, teaching techniques, assessment strategies, and supervised practice. May be repeated for up to 6 hours of degree credit.

**EXSC 5323. Biomechanics I (Fa). 3 Hours.**
Intended to serve as an introduction to biomechanics and focuses on scientific principles involved in understanding and analyzing human motion.

**EXSC 5333. Instrumentation in Biomechanics (Irregular). 3 Hours.**
The application of knowledge and skills necessary for data collection for sports analysis. Provides valuable information on instrumentation used specifically in biomechanics. Prerequisite: EXSC 5323.

**EXSC 5353. Exercise Psychology (Fa). 3 Hours.**
Exercise Psychology is a lecture and discussion format for students interested in learning about theoretical and research information related to exercise adherence.

**EXSC 5443. Seminar in Brain Injury and Behavior (Irregular). 3 Hours.**
The Brain Injury and Behavior Seminar will immerse you in specific topics pertaining to the study of human brain-behavior relationships. Emphasis will be placed on traumatic brain injury (TBI), including moderate-to-severe injuries, as well as mild TBI or concussion. The first half of the course will focus on research related to how individuals sustain and recover from TBI. The second half of the course will focus on sports-related concussion in youth, collegiate, and professional athletes, with an emphasis on how athletes sustain concussions, how concussions are assessed, treated, and managed, and how return-to-play decision are made. This course will introduce you to research in a variety of fields that include physiology, neurology, and neuropsychology through primary source material in the form of book chapters and journal articles.

**EXSC 5513. Physiology Exercise I (Fa). 3 Hours.**
A study of the foundation literature in exercise physiology. Emphasis is placed on the muscular, cardiovascular, and respiratory systems.

**EXSC 5523. Muscle Metabolism in Exercise (Sp). 3 Hours.**
A study of the metabolic changes that occur in muscle as a result of exercise, exercise training, and other stressors. Prerequisite: EXSC 5513 or equivalent.

**EXSC 5533. Cardiac Rehabilitation Program (Even years, Sp). 3 Hours.**
An examination of the concepts, design, and implementation of cardiac rehabilitation programs. Emphasis on exercise programs but reference to nutrition, psychology, and other lifestyle interventions.

**EXSC 5543. Cardiovascular Function in Exercise (Even years, Fa). 3 Hours.**
Study of the effects of exercise training and other stressors on the cardiovascular system. Detailed study of the components of the cardiovascular system and the responses and adaptations of those components to selected stimuli. Corequisite: EXSC 5513 or equivalent.

**EXSC 5593. Practicum in Laboratory Instrumentation (Su, Fa). 3 Hours.**
Practical experience in testing physical fitness utilizing laboratory equipment. Objective is to quantify physiological parameters, leading to the individualized exercise prescription.

**EXSC 5613. Physical Dimensions of Aging (Odd years, Sp). 3 Hours.**
This course will focus on the physiological changes with healthy aging, pathophysiology of age-related diseases, testing issues, exercise interventions, and the psychosocial aspects of aging. Prerequisite: EXSC 5513.

**EXSC 5633. Muscle Physiology (Even years, Fa). 3 Hours.**
A study of the muscular, cardiovascular, and respiratory systems.

**EXSC 5643. Advanced Psychology of Sports Injury and Rehabilitation (Sp). 3 Hours.**
The purpose of this course is to explore and discuss factors related to the psychological aspects of athletic injuries. These factors include the sociocultural, mental, emotional, and physical dimensions of injury rehabilitation. Prerequisite: Students must be accepted into the Masters of Athletic Training graduate program.

**EXSC 5773. Performance and Drugs (Sp). 3 Hours.**
The pharmacological and physiological effects of ergogenic aids upon the athlete and performance coupled with the ethical and moralistic viewpoints of drug taking. Practical laboratory experiences are provided with pertinent statistical surveys of athletes; their drug taking habits and relevant psychological impact on performance.

**EXSC 6313. Muscle Physiology (Even years, Fa). 3 Hours.**
To expand the student's knowledge of the skeletal muscle form and function. Specifically, how muscle is formed to how it can adapt as a post-mitotic tissue. This course will focus on the morphological, physiological, cellular, and molecular factors that affect skeletal muscle form and function.

**EXSC 6323. Biomechanics II (Irregular). 3 Hours.**
Analysis of human movement with emphasis on sports skills by application of principles of anatomy, kinesiology, and cinematographical analysis. Prerequisite: EXSC 5323.

**EXSC 6343. Physiology of Exercise II (Irregular). 3 Hours.**
Detailed study of the body systems affected by exercise, the functions of these systems during exercise, the effects of age, sex, body type, and nutrition on capacity for exercise, the techniques of assessing work capacity, and a critical analysis of research literature in this area.

**EXSC 6443. Thermoregulation and Fluid Balance (Even years, Sp). 3 Hours.**
Comprehensive overview of human thermoregulatory responses to exercise in heat and cold.