

Course Descriptions
Master of Science in Sports Science and Rehabilitation
Fall 2019 Academic Catalog

ANAT 06201 Anatomy of Human Motion **3 credit hours**

This course is a detailed study of the functional anatomy of structures needed for motion, including the major joints, muscles, ligaments, tendons, blood supply, and nerves. Major components of the course include descriptive lectures and video demonstrations.

Pre-requisites: N/A

Co-requisites: ANAT 062L1 Anatomy of Human Motion Prosection

ANAT 062L1 Anatomy of Human Motion Prosection **1 credit hour**

This course is a detailed study of human movement in relation to resistance exercise and various sport specific movements encompassing major joints, muscles, ligaments, tendons, blood supply, and nerves taught in the related lecture course. **Pre-requisites:** N/A

Co-requisites: ANAT 06201 Anatomy of Human Motion

BMEC 05103 Biomechanics **3 credit hours**

This course presents a detailed study of biomechanics on the entire human body. Emphasizing ergonomics, gait, levers and kinesiology of joints. Major components of this course include descriptive lectures, demonstrations, and review of the current literature.

Pre-requisites: N/A

ECAD 06301 Exercise/Cardiorespiratory Physiology **3 credit hours**

This course is a detailed study of the human physiological responses to acute and chronic exercise, concentrating on general physiological principles that take place in all components of the neuro-musculoskeletal and cardiorespiratory systems as the result of activity and exercise. Demonstrations and a review of the current literature are featured.

Pre-requisites: NUTR 05103: Nutrition & Physical Performance

EXER 07304 Exercise Prescription for Special Populations **3 credit hours**

This course will explore exercise prescription for individuals in special populations. Special populations includes patients with disorders of the neuromuscular, musculoskeletal, cardiopulmonary and respiratory systems. Diabetes, obesity, pregnancy, youth and elderly patients will also be discussed.

Pre-requisites: PRAC 07303 Exercise Testing & Prescription or PRAC 07305 Active & Passive Lower Extremity Evaluation

NUTR 05103: Nutrition & Physical Performance **3 credit hours**

This course focuses on exercise metabolism and optimal nutrient absorption for peak athletic performance. It covers chemical structure and biochemical metabolic functions of essential and nonessential nutrients, integration, coordination, and regulation of macro and micronutrient metabolism, regulation of nutrient metabolism and needs by hormones and growth factors, the physiological and biochemical basis for nutrient requirements, and dietary reference intakes and supplements for competitive athletes.

Pre-requisites: N/A

PRAC 07301 Sports and Exercise Science Practicum 3 credit hours

This course is a study of general topics in sports science including youth, adolescent, and adult participation assessments, assessment of upper and lower extremities in relationship to injury, return to play criteria, and common injuries involving non-musculoskeletal systems.

Radiographic findings in common sports injuries are reviewed. Demonstration and a review of current literature are featured.

Pre-requisites: ECAD 06301 Exercise/Cardiorespiratory Physiology

PRAC 07302 Sports Emergency Care Practicum 3 credit hours

This course is a detailed study of on-field assessment procedures for emergency care, including head and spinal injuries, obtaining vital signs, stabilizing the injured area, and mode of transportation from the field based on the severity of injury. Specific injuries associated with female, pediatric, and older athletes are discussed. Demonstrations and review of the current literature are featured.

Pre-requisites: ECAD 06301 Exercise/Cardiorespiratory Physiology

PRAC 0L302 Sports and Emergency Care Practicum Lab 1 credit hour

This weekend class is a hands-on laboratory experience which includes practical training for emergency situation in an athletic environment, sideline care, and taping and wrapping. Spine boarding and concussion symptom recognition and testing are featured.

Pre or Co-requisites: PRAC 07302 Sports Emergency Care

Students may not take the Lab prior to the course

PRAC 07303 Exercise Testing and Prescription Practicum 3 credit hours

This course is a detailed study of exercise testing and prescription for all age groups at every athletic level, including special needs and at-risk athletes. Exercise prescription, testing for optimal performance and wellness, demonstrations and review of the current literature are featured.

Pre-requisites: N/A

PRAC 07304 Active and Passive Upper Extremity Rehabilitation Practicum 3 credit hours

This course is a detailed study of current active and passive rehabilitative and strengthening protocols used in the prevention and treatment of sport and musculoskeletal injuries. Students will learn bracing/taping techniques in the stabilization and treatment of upper extremities, cervical, and thoracic spinal joint injuries. Specific joint injuries associated with a specific activity of the upper extremities such as shoulder and elbow injuries in pitchers will be discussed. Demonstrations and review of the current literature are featured.

Pre-requisites: BMEC 05103 Biomechanics;

PRAC 07305 Active and Passive Lower Extremity Rehabilitation Practicum 3 credit hours

This course is a detailed study of current active and passive rehabilitative and strengthening protocols used in the prevention and treatment of sport and musculoskeletal injuries. Students will learn bracing/taping techniques in the stabilization and treatment of lower extremities, and lumbar spinal joint injuries. Specific joint injuries associated with a specific activity of the lower extremities will be discussed. Demonstrations and review of the current literature are featured.

Pre-requisites: BMEC 05103 Biomechanics

PSTH 05101 Principles of Physical Therapy

3 credit hours

This course is a study of clinical rehabilitation, employing therapeutic exercise concepts and principles to interpret and analyze normal and abnormal human anatomy and physiology so as to better understand and manage neuro-musculoskeletal conditions. Applications, indications and contraindications of modalities will be reviewed.

Pre-requisites: N/A

PSYH 06202 Psychology of the Athlete

3 credit hours

This course is a detailed study of the psychological and emotional aspects of competition and its social stress, with focus on approaches to knowledge, goal setting, stress management, psychological skills training, and review of current research.

Pre-requisites: N/A

RMET 05101 Research Methodology

3 credit hours

In this course, students learn to evaluate the scientific/clinical literature for validity of scientific findings as well as for clinical significance. Students will also learn how to identify a research problem, search and review the literature, design an experiment, collect and analyze data.

Pre-requisites: N/A

SPSR 08101 Clinical Internship

6 credit hours

This internship is a 180 hour experience designed to provide advanced training under the direct supervision of a licensed health care professional or other appropriate professionals. The student will be working in a setting approved by the University as qualified to offer specific instruction in areas of sports science and rehabilitation. Such internships may emphasize exercise programming, risk factors, health appraisal, fitness testing, injury prevention, emergency care, nutrition, weight management, electrocardiography, or other pertinent experience. Students may establish an internship at sites distant from the campus, but all selections are subject to final approval by Logan University.

Pre-requisites: All didactic coursework