

EXS: EXERCISE SCIENCE

College of Health Sciences

Courses

EXS 500. Graduate Research Seminar. 3 Credits.

This course is designed to build the graduate student's understanding of the research process and to foster development of creative options for research-based connections with current faculty and graduate students. Students will apply concepts introduced in Research Methods and other prior graduate coursework toward building a framework for their graduate thesis. Course content will be centered on small group discussions where invited faculty will introduce their specific line of research and engage students in open discussion on potential for future collaboration.

Typically offered in Spring.

EXS 501. Research Methods in Health, Physical Education, Recreation. 3 Credits.

Techniques of research applied to the field of health, physical education, and recreation. Distance education offering may be available.

Typically offered in Fall.

EXS 534. Exercise Adherence in Clinical and Non-Clinical Settings. 3 Credits.

This course provides students with an overview of exercise adoption and adherence in clinical and non-clinical settings. Specifically, the course prepares students to work with individuals from diverse backgrounds to adopt and maintain exercise behavior in their daily lives as well within medical and rehab environments.

Distance education offering may be available.

Typically offered in Fall.

EXS 570. Concepts of Exercise and Sport Science. 3 Credits.

This course will provide an overview of exercise science from the standpoint of its applied science underpinnings. The biomechanics component of this course will survey orthopedic anatomy with special attention to joint-specific alignment and function. Governing principles of biomechanics applied to lever systems, fluid mechanics, neuromuscular characteristics, and biomaterials will be introduced and performance measurement techniques will be illustrated in kinetic, kinematic and electromyographic terms. The advanced motor learning component is designed for further understanding of motor learning theories, principles, and practice. Behavioral, physiological, and psychological principles underlying the discipline will be covered. Specific topics include classifications and measurement of motor performance, sensory processing, perception, memory, and attention. The exercise physiology component will reinforce neuromuscular function and integrate cardiovascular, respiratory and endocrine system function into sport performance and training. Topics will include bioenergetics, anaerobic and aerobic mechanisms influencing physical conditioning, specificity, energy expenditure, fatigue and performance. Current best practices in performance and body composition enhancement via ergogenic aids, nutrition and supplementation will be introduced. Students will engage in readings and activities aimed at enhancing their ability to both understand and apply concepts to professional practice.

Distance education offering may be available.

Typically offered in Fall.

EXS 572. Advanced Motor Learning. 3 Credits.

An investigation of the theories, research, and practical applications of the processes and conditions involved in the teaching and learning of physical skills.

Typically offered in Fall.

EXS 579. Fitness & Exercise Entrepreneurship. 3 Credits.

This course is designed to introduce the student to basic principles of business development and marketing in the context of the fitness and exercise industry marketplace. Students will learn business and academic skills needed to build and manage a successful 21st century business. This course will focus on the fundamentals of entrepreneurship, recognizing opportunities, determining the feasibility of a business idea, conducting market research, and managing marketing strategies.

Typically offered in Fall.

EXS 582. Pathokinesiology. 3 Credits.

This course is designed to build upon the student's basic knowledge of applied orthopedic anatomy in the context of pathology and related to resistance exercise prescription. Students will apply basic knowledge of structural orthopedic anatomy and biomechanics to movement and positional limitations typically associated with common sport injuries.

Typically offered in Spring.

EXS 585. Biomechanics. 3 Credits.

A review of, or introduction to, the basic principles of biomechanics and the application of those principles to research and teaching.

Typically offered in Fall.

EXS 587. Environmental Physiology. 3 Credits.

A survey course investigating the multidisciplinary nature of environmental physiology. It will explore the impact of different environments on the physiology of humans while at work and play. This course will examine the thermal environments (hot, cold, humidity), barophysiology (altitude and depth), microgravity and space, air pollution, and chronobiological rhythms. Laboratory experiences, both computer simulation and "hands-on", will be included in the course.

Pre / Co requisites: EXS 587 requires a prerequisite of EXS 380 or BIO 468 or BIO 469. EXS 681 is recommended.

Typically offered in Fall.

EXS 640. Applied Sport and Exercise Psychology. 3 Credits.

A graduate course aimed at covering psychological influences on sport performance and exercise behaviors in a diverse population. Additionally, it will cover how sport and exercise performance and behaviors impact psychological processes. Students will use existing theory in developing best practices for working directly with the population.

Distance education offering may be available.

Typically offered in Spring.

EXS 641. Group Dynamics in Sport and Exercise. 3 Credits.

A graduate course designed to acquaint students with theory, research and practical issues associated with group dynamics and team cohesion. The course will address leadership, group/team processes, and team building. Students will learn about the impact of roles, communication, accountability and diversity on team function and dysfunction.

Distance education offering may be available.

Typically offered in Fall.

EXS 645. Sport & Exercise Psychology Practicum. 3 Credits.

A graduate course designed to acquaint students with the application of theory to practice within sport and exercise psychology settings. Students will critically examine the theoretical foundation of applied sport psychology and explore the nature of sport and exercise psychology practice. Students will also be introduced to ethics of consultancy and practical issues associated with delivering sport and exercise psychology services within diverse settings.

Distance education offering may be available.

Typically offered in Fall & Spring.

EXS 646. Neuroscience Perspectives in Sport & Exercise. 3 Credits.

The purpose of the course is to study specific aspects of the field of neurosciences that relates to the intricate relationship between brain/mind and body function in sport, physical activity and overall. Theoretical reviews of applied and clinical research, meta-analysis and case analysis will widen the depth and scope of student effectiveness in the field of sport and exercise psychology.

Distance education offering may be available.

Typically offered in Spring.

EXS 680. Scientific Principles Of Coaching. 3 Credits.

Recent trends in theories and techniques of teaching sports. Mechanical principles of efficient movement. Research related to competitive performance. Specialists serve as guest panelists.

EXS 681. Metabolic, Endocrine, and Digestive Physiology. 3 Credits.

Clinical and laboratory use of exercise in evaluating, maintaining, and modifying human physiological processes: specifically metabolism, and weight control; endocrine functions in health and disease; and digestive function pertaining to exercise and disease.

Typically offered in Fall.

EXS 687. Neuromuscular Physiology. 3 Credits.

This course is designed to provide an in-depth understanding of the structure and function of the nervous system related to skeletal muscle and its responses and adaptations to exercise.

Typically offered in Spring.

EXS 688. Cardiopulmonary Physiology. 3 Credits.

This course is designed to provide an in-depth understanding of the mechanisms underlying cardiopulmonary function and the effects of acute and chronic exercise on these mechanisms.

Typically offered in Spring.

EXS 690. Exercise and Older Adults. 3 Credits.

A course designed to prepare professionals to assess fitness levels of persons over the age of 50 and scientifically design exercise and fitness programs to meet the specific needs of the older participant.

Distance education offering may be available.

EXS 691. Adv Clinical Exercise Testing & Prescrip. 3 Credits.

An in-depth study of how exercise is used in clinical settings for diagnostic, rehabilitative, and preventive purposes. ACSM guidelines will be emphasized. Designed to prepare the student for the ACSM certification exam (exercise specialist).

Typically offered in Fall.

EXS 692. Clinical Practicum in Exercise Science. 3 Credits.

The course provides experience in a clinical setting under the supervision of qualified medical staff. Experience will include exercise prescription and supervision of exercise of patients in settings such as hospitals and outpatient clinics.

Consent: Permission of the Department required to add.

Typically offered in Fall & Spring.

EXS 698. Research I. 3 Credits.

This course along with the subsequent EXS 699, is the culminating experience in the program curriculum. It includes development of hypothesis and methods under the direction of a faculty advisor. If taken to theses, this course should culminate in the acceptance of the thesis proposal by an appropriate committee of faculty. If taken as either a report or theses, the course results in the writing of the first three chapters (Introduction, Review of Literature and Methods) and IRB approval. If taken as a clinical capstone experience, this course will be taken under the direction of the graduate student's clinical research advisor.

Consent: Permission of the Department required to add.

Distance education offering may be available.

Typically offered in Fall, Spring & Summer.

EXS 699. Research II. 3 Credits.

This course includes data collection, statistical analysis, and the writing of the last three chapters of the report/thesis. Reports are submitted to the faculty research advisor for grade. Thesis must be defended and approved by the committee. After approval by the examining committee, thesis must be typed in accordance with specifications contained in the "Guide to the Preparation of the Master's Thesis", a copy of which may be obtained from departmental offices or online. After the Dean of The Graduate School has approved the thesis, the student is responsible for transmitting all required copies to the library for binding.

Pre / Co requisites: EXS 699 requires a prerequisite of EXS 698.

Consent: Permission of the Department required to add.

Distance education offering may be available.

Typically offered in Fall, Spring & Summer.