

EXSC - EXERCISE SCIENCE (EXSC)

EXSC U270 Introduction to Athletic Training 3 Credit Hours

Safety precautions, injury prevention, laboratory experiences, and legal issues in physical education and athletics.

EXSC U280 Introduction to Exercise and Sport Science 3 Credit Hours

An orientation to the science of human movement, including an overview, career opportunities, and current issues and challenges within the field.

EXSC U290 Functional Kinesiology I 4 Credit Hours

Mechanisms of human movement and bioenergetic pathways of the body systems. Lab experience is integrated.

EXSC U291 Functional Kinesiology II 4 Credit Hours

Introduction to the structure and function of body systems including cellular, integumentary, vision, hearing, endocrine, blood, immune, digestive, urinary, and reproductive. The impact of physical activity on each of these systems is explored. Lab experience is integrated.

Prerequisite(s): EXSC U290.

EXSC U301 Exercise Physiology 4 Credit Hours

Physiological function of muscular, cardiovascular, and respiratory systems during exercise. Includes discussion of the metabolic systems that produce energy needed to perform vigorous exercise, the cardiovascular, muscular, and hormonal adaptations that result from various forms of training and the effects of various environmental conditions on human performance. Three class and two laboratory hours per week.

Prerequisite(s): BIOL U243 or EXSC U290.

Corequisite(s): EXSC U301L.

EXSC U301L Exercise Physiology Lab 0 Credit Hours

Physiological function of muscular, cardiovascular, and respiratory systems during exercise. Includes discussion of the metabolic systems that produce energy needed to perform vigorous exercise, the cardiovascular, muscular, and hormonal adaptations that result from various forms of training and the effects of various environmental conditions on human performance. Three class and two laboratory hours per week.

Corequisite(s): EXSC U301.

EXSC U302 Biomechanics 3 Credit Hours

Functional anatomy, kinematic and kinetic analysis of body movement during sports activities.

Prerequisite(s): BIOL U243 or EXSC U290.

EXSC U355 Lifestyle-Related Diseases 3 Credit Hours

Epidemiology and pathophysiology of diseases linked to lifestyle choices. The effect of physical activity as an important preventative measure is discussed.

EXSC U390 Field Experience 3 Credit Hours

School or community experiences related to aspects of physical education. 100 hours of field work are required.

Prerequisite(s): Sophomore standing and consent of advisor, instructor and dean.

EXSC U401 Advanced Exercise Physiology 3 Credit Hours

Includes in-depth research-based discussion of the responses of the human body to physical stress and long term anaerobic and aerobic training. Topics such as thermoregulation, performance at altitude and selected detraining are also discussed.

Prerequisite(s): EXSC U301.

EXSC U455 Fitness Assessment and Prescription 4 Credit Hours

Principles of exercise testing and prescription for a variety of generally healthy individuals. The class includes other aspects of fitness training such as behavior modification, business aspects, and metabolic equations, and prepares students to take the ACSM's Certified Exercise Physiologist exam.

Prerequisite(s): EXSC U301 and EXSC U302.

Corequisite(s): EXSC U455L.

EXSC U455L Fitness Assessment and Prescription Lab 0 Credit Hours

Principles of exercise testing and prescription as they apply to fitness and performance, including the role of the health related components of fitness in performance, and/or physical fitness of normal and special populations, and the significance of cardiovascular programs through the life cycle.

Prerequisite(s): EXSC U301 and EXSC U302.

Corequisite(s): EXSC U455.

EXSC U456 Clinical Exercise Testing and Prescription 4 Credit Hours

Principles of exercise testing, prescription and risk factor reduction as they apply to individuals with current or previous lifestyle-related or other chronic disease states. Health-related physical fitness components, stress testing, electrocardiography, and prescription of rehabilitative exercise programs will be examined. Lab experience will be included.

Prerequisite(s): EXSC U301, EXSC U302, and EXSC U455.

EXSC U457 Essentials of Strength and Conditioning 4 Credit Hours

The scientific foundations of strength training and athletic conditioning, program design for both power and endurance athletes, performance-enhancing substances, performance testing, and facility organization and management. The content will include strength and conditioning techniques, resistance training including weights, powerlifting, plyometrics and functional training. Prepares students to sit for the NSCA's Certified Strength and Conditioning Specialist exam. Lab experience will be included.

Prerequisite(s): EXSC U301, EXSC U302, and junior standing.

Corequisite(s): EXSC U457L.

EXSC U457L Essentials of Strength and Conditioning Lab 0 Credit Hours

The scientific foundations of strength training and athletic conditioning, program design for both power and endurance athletes, performance-enhancing substances, performance testing, and facility organization and management. The content will include strength and conditioning techniques, resistance training including weights, powerlifting, plyometrics and functional training. Prepares students to sit for the NSCA's Certified Strength and Conditioning Specialist exam. Lab experience will be included.

Prerequisite(s): EXSC U301, EXSC U302 and junior standing.

Corequisite(s): EXSC U457.

EXSC U459 Sport Nutrition 3 Credit Hours

Impact of optimal nutrition on exercise performance. Important topics include digestion, thermoregulation, metabolism and fuel usage, sports supplements, and weight control.

Prerequisite(s): EXSC U301 and junior standing.

EXSC U467 Advanced Strength & Conditioning 3 Credit Hours

Advanced program design and conditioning concepts for athletes.

Prerequisite(s): EXSC U457.

EXSC U468 Advanced Exercise Assessment and Prescription 3 Credit Hours

Application of principles related to health appraisal, fitness testing, and physical activity programming in apparently healthy, special, and clinical populations.

Prerequisite(s): EXSC U455.

EXSC U480 Internship in Exercise and Sport Science 6 Credit Hours

Guided practical experience in an elected, supervised setting appropriate to the chosen focus area. Pass/Fail credit.

Prerequisite(s): EXSC U390 and junior standing.

EXSC U499 Research Seminar 3 Credit Hours

Integration of Exercise and Sport Science-related knowledge through involvement in the research process. May include IRB approval process, data collection and analysis, and verbal presentation of research results.

Prerequisite(s): Senior standing and 15 hours of upper level coursework in the major with a grade of 'C' or above.