

## **SPORT & EXERCISE SCIENCE (SPE)**

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The Wisconsin Lutheran College Sport & Exercise Science major combines a strong interdisciplinary education rooted in Christian values in the health sciences and liberal arts with diverse hands-on experience in a wide range of laboratory, clinical, and field venues. Students will develop communication, interpersonal, critical thinking skills and Christian compassion to effectively interact with future clients. Successful completion of this major prepares graduates for lives of servant leadership in a wide range of professions and graduate school.

### **Course of Study**

A major in Sport and Exercise Science consists of at least 47-48 credits: a core of 32-33 credits and 15 elective credits. Students must also take 13 collateral credits.

A. Core courses: BIO 202, 225, 255, 365, PED 315, SPE 200, 325, 425, 450, 490.

B. Electives: At least 15 credits from the following: BIO 240, 323, 355, 372, 425, 455, COM 405, PSY 240, PED 152, 154, 216, 330, SOC 101, SPE 310, 350, 415.

C. Collateral Requirements: CHE 101 or 161/168, MAT 117, PSY 101, and 120.

### **Course Descriptions**

#### **SPE 200 Foundations of Sport & Exercise Science. 2 cr.**

This course will provide an overview of the history and foundational principles in exercise science. Students will gain an understanding of exercise science topics related to terminology, anatomical structures, human physiology systems, scientific research & writing, and basic human assessments. Skills and techniques pertaining to various professions in the field will be explored.

#### **SPE 310 Motor Learning and Development. 3 cr.**

Consider the principles and theoretical perspectives of motor development and life span effects on human body systems. Observe, examine and assess human movement and environmental effects influencing movement through practical application. Prereq: BIO 225

#### **SPE 325 Exercise Physiology. 4 cr.**

A study of how normal physiological function (homeostasis) is altered, and subsequently restored, in response to various forms of stress in exercise and training. The course will cover human energy transfer, human energy expenditure, evaluation of energy-generating capacities, the cardiovascular system, and the musculoskeletal system. 3 lec, 2 hrs lab. Prereq: BIO 225 and 255.

#### **SPE 350 Fitness Assessment and Exercise Prescription 4 cr.**

Develop an objective and comprehensive approach to analyzing physical, cardiovascular and muscle fitness levels for individuals across the life span. Examine and design exercise plans and directives based on exercise frequency, intensity, duration, and specificity of training response to assist individuals to achieve desired fitness goals. 3 lec. 2 lab Prereq PED 216 & SPE 325

#### **SPE 415 Anatomical Kinesiology 4 cr.**

This course provides a comprehensive approach to understanding the neuromusculoskeletal system specific to human movement and performance. Extensive discussion will focus on the interactions and functions of skeletal, muscle, joints and nerves. Topics of muscle insertion and origin, kinetic chains, anatomy trains, and neuromuscular function will be explored. Labs will address muscle and skeletal palpation, kinesthesia and proprioception and neuromuscular motor patterns. 4 credits. Prerequisite: BIO 225 & BIO 255, Declared BIO, NUR, SPE major or consent of instructor.

#### **SPE 425 Kinesiology and Biomechanics 4 cr.**

A study of human movement. The course will include a review and assessment of human movement, performance and function by applying the science of biomechanics, anatomy, physiology and motor learning. The course will also include the study of enhanced movement, function or performance in the areas of sports. 3 hr lecture, 2 hr lab Prereq: BIO 225 and 255.

#### **SPE 450 Research Strategies in Exercise Science. 2 cr.**

A capstone course providing students the opportunity to conduct undergraduate action research. The course will include development of a research proposal, literature review, research design and analysis. Students will submit a written summary paper and participate in poster showcase. Required capstone for the Sport & Exercise Science major. Prereq: Senior Sport & Exercise Science major or by approval from the department.

#### **SPE 490 Internship. 1-3 cr.**

By arrangement with the Internship Coordinator, and the department.

#### **SPE x91 Special Topics. 3 cr.**

Special topics in Sport and Exercise Science. Prereq: varies with topic.

#### **SPE 199-499 Independent Study. 1-3 cr.**

By arrangement with the department.