

EXERCISE SCIENCE (ES)

ES100 Exploration of Exercise Science (1.0 Credits)

In this course students will be exposed to a wide array of career options in the field of exercise science. This course will include guest speakers from careers such as physical therapy, sport medicine physician, coaching, sport nutritionist, employee wellness director, and researcher will speak to the class about their careers and the preparation needed for their careers. Students will be asked to think about their own career aspirations and the challenges they will have to overcome in order to meet their goals. Offered each spring.

ES111 Found Ex Science & Wellness (3.0 Credits)

Introduction to wellness through investigation of lifestyle and other critical issues in fitness, sports, exercise science and wellness. Changing philosophies and basic concepts are introduced. Offered each semester.

ES160 First Aid & CPR (1.0 Credits)

This course is designed to provide the citizen responder with the knowledge and skills necessary in an emergency to help sustain life, reduce pain, and minimize the consequences of injury or sudden illness until professional medical help arrives. American Red Cross First Aid, CPR, and AED certifications will be received upon successful completion of the course. Offered each spring.

ES211 Theory of Coaching (3.0 Credits)

An overview of current theory and practice in coaching education. Topics include sport pedagogy, physiology, psychology, administration, and risk management. This course addresses issues common across all levels of performance and competition as well as issues specific to child, youth, and collegiate coaching. Offered alternating spring semesters.

ES220 Introduction to Nutrition (3.0 Credits)

In this course students will discover how the body uses food by learning various functions of each key nutrient. An overview of digestion, absorption, and metabolism is provided. Food sources of the key nutrients and recommended intakes are explored in depth. The student's own diet is evaluated, using a computerized diet analysis. Eating disorders and gender/age-specific needs are also discussed. Offered each semester.

ES251 Biomechanics (3.0 Credits)

An introduction to the function of the human body as described using the laws of classical mechanics. Beginning from descriptions of movement, students will learn how to identify the forces acting on a body, ultimately connecting the mechanical work done through exercise and physical activity to the physiological demands for energy.

Prerequisite(s): MA109, MA110, or MA115.

ES252 Kinesiology & Applied Anatomy (3.0 Credits)

The study of the function of the musculoskeletal system using the mechanical laws introduced in ES251. Beginning at the level of individual joints, students will build an understanding of the coordination between multiple joints and the flow of energy through a multi-segment chain, ending with a framework for analyzing motion to improve performance or prevent injury.

Prerequisite(s): BI213.

ES260 Motor Development Learning & Teaching (3.0 Credits)

This course provides foundational knowledge of lifespan motor development and learning. Based on this foundation, teaching strategies for all ages including early childhood will be discussed. This course is cross-listed with HPE260.

Prerequisite(s): ES111.

ES275 Pathophysiology (3.0 Credits)

This course introduces the students to basic concepts in pathophysiology as applied in current nursing practice. It builds on previous foundations in the biological sciences and focuses on the integration of pathophysiological with the principles of the nursing process. It introduces students to pathophysiological disturbances to normal body functions emphasizing differences in etiology, epidemiology, pathophysiology, clinical manifestations and treatments in individuals across the lifespan. The student will analyze objective and subjective manifestations of common health problems resulting from environmental, genetic and stress related conditions. Diagnostic testing, interventions and pharmacological treatments and related nursing implications are discussed as they relate to specific health problems. 3 hours lecture. This course is cross-listed with BI275 and NU275.

Prerequisite(s): BI213, BI214, and either NU111 or permission of the Nursing Department Chair.

ES310 Sport & Exercise Psychology (3.0 Credits)

An overview of the theories and principles that explain factors which influence human behavior in sport and physical activity. Sport and exercise psychology focuses primarily on: (1) Helping individuals use psychological principles and skills to achieve optimal mental health and to improve performance. (2) Understanding how participation in sport, exercise, and physical activity affects their psychological development, health, and well-being. Offered alternating spring semesters.

ES315 Sports in Society (3.0 Credits)

An in-depth analysis of the role of sport in society. This course examines sport as both affected by sociocultural forces and as affecting the basic institutions of society; family, education, politics, religion, and the economy. The influence of age, gender, and race will be explored as well. Discussion of contemporary controversies will be included. The course is recommended for students in the behavioral sciences, exercise science, health and athletics.

Prerequisite(s): SO101 or permission of the instructor.

ES320 Gender in Sports (3.0 Credits)

Examination of gender-specific issues surrounding participation in sports that includes epidemiology of injuries, psychosocial aspect of athletes, physiological conditions, and biomechanics of the body. This course is cross-listed with WS320. Offered alternating spring semesters.

ES325 Wellness Program Management (3.0 Credits)

An introduction to methods of conducting needs assessments of target populations. Working with their intended audience, students will learn to create programs with quantifiable goals and outcomes. Included in the program design will be considerations of budgetary, personnel, and facility requirements. Program marketing, client recruitment strategies, plus outcomes assessment and program evaluation will be examined and discussed. Offered alternating fall semesters.

ES326 Wellness Program Practices (3.0 Credits)

This class is designed to teach the prospective health promotion/wellness professional ways in which to help the public affect positive health behavioral changes. The student will learn how to develop and implement educational programming about current health issues. Students will also learn how to instruct clients in behavior change techniques and they will acquire rudimentary life coaching skills. Attention will also be paid to cultural diversity issues and sensitivities. These techniques will include one on one coaching, seminars, comprehensive program series, educational materials (pamphlets, fliers, etc.) and various forms of information technology. Emphasis will be placed on methods of knowledge acquisition: visual, auditory, and experiential learning in order to effectively communicate with a diverse audience.

ES330 Exercise Physiology (4.0 Credits)

Study of human physiological response and adaptations during exercise. Scientific principles will be applied in nutrition, metabolism & systems such as neurological, cardio-respiratory, endocrine and musculoskeletal, to promote health and fitness of the general population as well as peak performance in athletes. Lecture and Laboratory. Offered each fall.

Prerequisite(s): BI213, and CH113 or CH151.

ES335 Care & Prevention of Athletic Injuries (3.0 Credits)

Combination of didactic and practical learning methods of athletic injury recognition, evaluation and first aid care. Emphasis will be placed on musculoskeletal system injuries; however other systems will also be discussed. Offered alternating fall semesters.

ES340 Health & Weight Management (3.0 Credits)

Obesity is a worldwide epidemic and weight loss has become an American obsession and multibillion dollar industry. The class will examine the causes of obesity and the health risks associated with being overweight or obese. For women excessive weight loss can also be a problem. We will discuss current scientific theories about the best ways to maintain a healthy weight throughout one's life.

ES350 Exercise Testing & Prescription (4.0 Credits)

Provides the practical knowledge and skills in health screening, risk stratification, administering exercise testing, interpreting test results and prescribing exercise to general as well as specific populations. Lecture and Laboratory. Offered each spring.

Prerequisite(s): ES330 or permission of advisor.

ES355 Methods of Secondary Health & Phys Ed. (3.0 Credits)

Students will learn methods of teaching secondary health and physical education, including characteristics of secondary school student assessment, grading, teaching lifetime activities, and effective teaching techniques in the classroom, gym, and outdoors. Students will gain teaching experiences through peer teaching and observation in schools outside the university. This course is cross-listed with HPE355.

Prerequisite(s): ES260/HPE260.

ES360 Administrative Aspects of Sport (3.0 Credits)

Students will be introduced to the concepts of sports management, including the administrative processes, systems and styles with application to various sports environments, including program, facility, fiscal, and personnel management in informal, intramural, or club sports settings. Offered alternating fall semesters.

ES370 Special Topics (1.0 Credits)

Allows greater depth of study of an area selected by faculty or jointly by student and faculty member.

ES371 Exercise Science Research Experience (1.0 Credits)

This course gives exercise science major students the opportunity to gain research experience by helping a faculty member implement his or her project. Under faculty supervision, students may assist in reviewing the literature, designing a study, meeting the ethical obligations of human subject research, recruiting and interacting with research participants, using specific pieces of research equipment, and processing data. There may also be opportunities to present findings at a conference or publish study results in a journal. If the course is taken for 1 or 2 credits, the course may be repeated for additional credit up to a maximum of 3 credits.

Prerequisite(s): ES111.

ES390 Internship I (3.0 Credits)

Supervised individual fieldwork in exercise science, wellness or sports environment. 3-credit internship is equivalent to 120 hours in the field. Prerequisite(s): 60 academic credits completed and a minimum of 12 credits in exercise science.

ES391 Internship II (3.0 Credits)

Supervised individual fieldwork in exercise science, wellness or sports environment. 3-credit internship is equivalent to 120 hours in the field. Prerequisite(s): ES390.

ES392 Coaching Internship (3.0 Credits)

Supervised individual fieldwork in coaching. 3-credit internship is equivalent to 120 hours in the field.

ES425 Strength & Conditioning (3.0 Credits)

This course will apply scientific principles into the development of sports-specific training programs. Topics to be covered include: exercise physiology applications, fitness testing, exercise techniques, program design, periodization, training utilizing different energy systems, sports nutrition, and ergogenic aids. This course will prepare the student to take the Certified Strength and Conditioning Specialist exam offered by the National Strength and Conditioning Association. Offered alternating spring semesters.

Prerequisite(s): ES330.

ES470 Research Methods in Exercise & Sport (3.0 Credits)

This course provides an introduction to basic research methods and techniques used in exercise and sport science. Students will learn how to conduct and read research, design research tools, and evaluate results. Both quantitative and qualitative research methods are discussed. Offered each fall.

Prerequisite(s): MA103 or BI203, and either ES111 or HRP111.

ES471 Research Project in Exercise Science (3.0 Credits)

Conduct a research study. Open to exercise science majors interested in research. This course may be substituted for a second internship in exercise science.

Prerequisite(s): Permission of instructor.