EXERCISE SCIENCE (EXS)

EXS 100 Foundations of Exerc &Sprt Sci 3 sem. hrs.
Course presents an introduction, overview and history of the multidisciplinary field of exercise science and sports. The importance of specialized areas of study such as exercise physiology, biomechanics, exercise/sport psychology, motor behavior, fitness management, and nutrition for optimal health and physical performance will be major focuses. Course also provides an overview of career perspectives within the fields of exercise science and sports.

EXS 101 FD: Exercise Physiology I 3 sem. hrs.
This course introduces students to the foundational principles of exercise physiology with a particular emphasis on nutrition, metabolism, energetics, and body composition. Students will develop practical laboratory skills in the roles of technician and client to assess basic biometric measurements as well as aerobic and anaerobic capacities. 3 credit hours.

EXS 102 FD: Exercise Physiology II 3 sem. hrs.
This course introduces students to the foundational principles of exercise physiology with a particular emphasis on the cardiovascular, pulmonary, musculoskeletal, neural, and endocrine systems. Students will develop practical laboratory skills in the roles of technician and client to assess basic biometric measurements as well as muscular and pulmonary capacities. 3 credit hours. Prerequisites: None

EXS 150 First Aid and CPR 2 sem. hrs.
This course provides students with the opportunity for certification in Community First Aid and Safety and Adult, Infant and Child CPR. Students will also be introduced to the AED device. The main goal of this first aid and CPR course is to provide students with the knowledge and skills necessary to assess an emergency situation, to call for help, to administer mouth to mouth resuscitation or CPR, perform correct choking procedures for conscious and unconscious victims, and to minimize the consequences of injury or sudden illness until advanced emergency medical help arrives. Students will learn to recognize emergencies and make appropriate decisions regarding care. Students will also receive information on the prevention of injury and illness, with a focus on personal safety. Offered every semester.

EXS 211 Coaching Sports 3 sem. hrs.
This course provides an in-depth exploration of the principles and practices of coaching athletes in a variety of sports. Students will develop the knowledge and skills necessary to effectively lead, motivate, and guide athletes to success both on and off the field/court. The course covers coaching philosophy, training techniques, athlete development, performance analysis, team dynamics, and leadership strategies. Emphasis will be placed on understanding the unique needs of athletes, creating positive and inclusive team environments, and promoting physical and mental well-being. Additionally, the various administrative duties of a coach at various levels of competition will be discussed.

EXS 225 Strength Training and Conditin 3 sem. hrs.
This course elaborates on the concepts and applications of exercise science. Emphasis is placed on the bioenergetics, biomechanics, endocrine responses, and adaptations associated with aerobic and anaerobic training. Students learn testing and evaluation techniques, program design for general and sport specific training. 3 credit hours. Prerequisite: EXS 102

EXS 263 H1:TH1:DV:CIT:Persl/Com Health 3 sem. hrs.
This Heritage Series I course examines the challenges of the 21st century focusing on the situation of humankind in the modern world related to personal and community health. The scope includes acquiring fundamental knowledge of health enhancement in the areas of emotional and mental health; alcohol, tobacco and other drugs, human sexuality; chronic and infectious diseases; consumer health and awareness; nutrition; exercise and fitness; culture and gender issues; and other societal and safety themes. Discussion of subject matter will center on the rapid advancement of technology in the allied fields of health enhancement and the application of values, ethics, and cultural/religious mores guiding personal and societal decisions, especially in regard to the dignity of humans. Offered every semester.

EXS 264 Org/Admin of Ex Sci & Sport 3 sem. hrs.
Organization and Administration of exercise science, sports, and health & fitness related programs. Emphasis is placed on understanding the management process: functions, application to various health science settings, program development, budget, facilities, marketing/promotion, and risk management. Topics also include staffing and supervising programs, curricular trends, financial and legal aspects, procuring and caring for equipment and supplies, ethics, and public relations aspects of the administration of intramural, interscholastic athletics, corporate fitness, camping and outdoor recreation/educational programs.

EXS 300 ExerciseTesting & Prescription 3 sem. hrs.
Students learn to administer risk stratification screening questionnaires, assess fitness, and prescribe exercise for apparently healthy populations and those with controlled diseases. Students obtain knowledge and skills through participating in the roles of technician and client in this experiential learning course. Areas of exercise testing include both laboratory and field-based assessments of cardiorespiratory fitness, anaerobic capacity, muscular strength and endurance, flexibility, and body composition. 3 credit hours. Prerequisites: EXS 101 and EXS 102

EXS 315 Exercise and Sports Nutrition 3 sem. hrs.
In this course, students gain an in-depth understanding of the roles of carbohydrate, protein, and fat in the diets of various athletes and learn which nutrients, fluids, and supplements may support optimal training, performance, and recovery. 3 credit hours. Prerequisite: EXS 101 or NS 207

EXS 330 Cardiac Rehab&Secondary Prev. 3 sem. hrs.
This course provides an in-depth examination of the prevention and management of cardiovascular disease from a clinical lens. It is designed to provide an overview of the primary topics in cardiac rehabilitation and emphasizes both current research approaches and application. Special attention is paid to behavioral interventions, cardiac physiology, common cardiac arrhythmias, and interpretation of electrocardiograms. 3 credit hours. Prerequisite: EXS 102 or BIO 210

EXS 362 Care/Prev of Athletic Injuries 3 sem. hrs.
Prevention and care of athletic injuries with emphasis on avoiding accidents and injuries, recognizing signs and symptoms of specific sports injuries and conditions, immediate and long-term care of injuries, and administration procedures in athletic training. Provides instruction in the study of the athletic training room and its problems, including taping, bandaging, care of sprains, strains, and wounds common to athletic participation along with general rehabilitation.
Prerequisites: BIO 209, 210.

EXS 363 Adv Athletic Injury Management 3 sem. hrs.
Continuation of basic principles of athletic injury care and prevention and a closer look at the rehabilitation of more serious injuries. Organization and administration of training program and training room will be covered with an emphasis is placed on basic administrative procedures and written record-keeping skills, management of time and materials necessary for the proper function of the training room, participation and service to clients served by the athletic trainer, acquisition and evaluation of information relative to injury assessment and prevention of athletic injury, proper communication of care and rehabilitation of athletic injuries, and maintenance of responsibility, ethical behavior, and self-limitations in the treatment of athletic injuries. Offered every spring.
Prerequisites: EXS 362, BIO 209, 210.

EXS 364 Sports Psychology 3 sem. hrs.
This course is designed to offer the coach, the athlete, and the prospective coach an opportunity to learn principles, theories, and applications of psychology in a sports setting. Topics include discussion regarding the psychological factors that influence involvement and performance in sport, exercise, and physical education settings, identify the skills and knowledge about sport and exercise psychology that can be applied as a coach, teacher, or exercise leader, compare and contrast psychological theories and research, integrate effective goal setting practices, explore the various skills involved in developing emotional & mental control: anxiety & arousal, anger management, concentration, imagery, and confidence, and, understand the various pitfalls of eating disorders, substance abuse, and addictive behavior.

EXS 365 TH1:H2B:SportinAmericanSociety 3 sem. hrs.
Sport in American Society is a sociological analysis of sport in contemporary American society. Students will explore how sport in the U.S.A. is an institution that affects virtually all aspects of society, and examine sports from a variety of social science perspectives, including from historical, political, economic, and sociological viewpoints. Focus is upon sports as a form of social interaction which reflects, reinforces, and helps create basic societal norms, values, attitudes, and beliefs. Topics will include: sports at the youth, collegiate, and professional levels (i.e. their role in the family, the community/society, the economy, etc.); sports icons and their role in popular culture; performance-enhancing drugs; sports as business, even at the college level; and the impact of sport on the basic social institutions of family, church, school, government, and economics.

EXS 375 Research Design&Elemen.Stats 3 sem. hrs.
This course is designed to acquaint students with all phases of research; conceptualization, measurement, research format, sampling, data collection, analysis, and Interpretation. Current research gathered from scholarly journals will be a main source of content and discussion In this course. 3 credit hours. Prerequisites: EXS 101, EXS 102

EXS 385 Biomechanics 3 sem. hrs.
Study of human motion based on anatomical, physiological, and mechanical principles. Analysis of motor skills includes detection and correction of faulty movements. Lectures provide the framework for all class activities. They aim to link the student's knowledge of anatomy with mechanics to provide an understanding of how movement is produced in individuals. The lectures also provide information about the history, scope, and impact of biomechanics. The class introduces students to the physics of movement that underpin biomechanics, and to the measurement procedures utilized. Students will examine these principles for a variety of activities including: walking, running, jumping, quiet standing, throwing, striking, and reaching. Laboratory activities emphasize the qualitative and quantitative analysis of human movement. These sessions require students to work effectively individually and in groups to collect data, and then work independently to analyze and interpret their data. Offered every semester.
Prerequisite: BIO 209, 210.

EXS 390 ST: Exercise Science 1-3 sem. hrs.
This course allows a student or a small group of advanced-level students to pursue an area of academic study in exercise science or sport that may not be reflected in normal curricular offerings. Specific subject matter and evaluation should be negotiated between the student(s) and potential instructor. Course requirements are at the discretion of the instructor. Offered every semester. Pre-requesites: junior standing or above and consent of instructor.

EXS 401 Advanced Exercise Physiology 3 sem. hrs.
Focusing on peer-reviewed literature, the goal of this course is to expand on human physiology beyond what is covered in EXS 101 and EXS 102. This course allows students to utilize lab equipment to a greater extent than in other classes and explore the cardiovascular, metabolic, pulmonary, neuromuscular, and musculoskeletal systems. 3 credit hours.
Prerequisites: EXS 101 and EXS 102 or BIO 309

EXS 484 Pathophys. of Chronic Disease 3 sem. hrs.
This course discusses the pathophysiology of chronic disease and the impact on overall health and wellbeing. Special emphasis Includes cardiac, pulmonary, metabolic, neuromuscular, neurodegenerative, orthopedic, cancer, and age-related diseases and disorders. This class is active and is open to all students with an interest In learning more about how and why chronic diseases happen, how to prevent them, and how to treat them with exercise interventions when present. 3 credit hours.
Prerequisites: EXS 300 or BIO 309 or PSYC 350-2 or permission of instructor.

EXS 485 SL:Exs.Manag.OfChronicDiseas. 2 sem. hrs.
This service-learning field experience permits students to design and implement appropriate fitness programs for apparently healthy community adults with well-controlled chronic disease(s) or age-related disorder(s). 2 credit hours. Prerequisite: EXS 300, Corequisite: EXS 484

EXS 494 Internship 3 sem. hrs.
This course is an independent research and/or study project under the supervision of a faculty with an ongoing student-centered research agenda. It is offered to students who have a desire to pursue additional experience as an undergraduate researcher in preparation for graduate-level education.1 credit hour.
Prerequisites: EXS 375 and instructor approval.

EXS 498 Research Seminar 1 sem. hr.
This course requires critical analysis of scientific literature and current contemporary issues as related to the field of exercise science. Students will access, interpret, and analyze research through a review of professional articles and oral presentations. 1 credit hour. Prerequisite: EXS 375

EXS 499 Faculty Research Assistant 2 sem. hrs.
This course is an independent research and/or study project under the supervision of a faculty with an ongoing student-centered research agenda. It is offered to students who have a desire to pursue additional experience as an undergraduate researcher in preparation for graduate-level education. 2 semester hours.
Prerequisites: EXS 375 and instructor approval.

EXS 600 Exercise Physiology Foundation 1 sem. hr.
Exercise Physiology Foundations: Is a review of important physiological and statistical concepts that are used throughout subsequent EXS courses. Topics covered include basic anatomy, components of fitness, classes of nutrients used by the body, training principles, and important foundational statistical concepts. This 1 credit hour course offers the flexibility to complete at your own pace through a series of modules and topical quizzes. You need to complete this course prior to taking all other EXS graduate courses. Note: This course may be waived by students with a BS in Exercise Science or similar background, after consultation with a program faculty advisor and approval by the program director.

EXS 601 Cardiorespiratory Physiology 3 sem. hrs.
Evaluation of the cardiovascular-respiratory responses to exercise. Includeselectrocardiography, blood pressure, spirometry and associated exercise screening andprescription. Prerequisite: EXS 600

EXS 602 Body Composition Change 3 sem. hrs.
Evaluation of bodily components and their rate of change in response to exercise training.Topics include muscle, fat, and bone physiology, assessment tools such as hydrostaticweighing, air displacement plethysmography, bioimpedance analysis, skinfolds,ultrasound, and associated exercise screening and prescription. Prerequisite: EXS 600

EXS 603 Health Motivation and Behavior 3 sem. hrs.
This course introduces and reinforces theories of motivation and behavior changestrategies relevant to exercise promotion and adherence to physical activity and wellnessprograms. Prerequisite EXS 600

EXS 615 Adv Exercise&Sports Nutrition 3 sem. hrs.
In this course, students gain an in-depth understanding of the roles of carbohydrate,protein, and fat in the diets of various athletes and learn which nutrients, fluids, andsupplements may support optimal training, performance, and recovery. Consumerprotection, marketing ethics and sustainable business practices from a supplementindustry perspective are included. 3 credit hours. Prerequisite: EXS 600

EXS 620 Capstone I 3 sem. hrs.
After passing a competency examination, students will work with an Exercise PhysiologyProgram advisor to review the literature and identify an area of need, then form a testablehypothesis and propose their research design. Prerequsites: EXS 600, 601, 602, 615, 675

EXS 621 Capstone II 2 sem. hrs.
In this course, students will build on their capstone proposal to develop the full project.They will update literature review with any new relevant articles since capstone proposal.Students will fully develop and implement the capstone project, collect or analyzeexisting data, and submit to present findings or methodology in a professional orscientific setting. Prerequisite EXS 620

EXS 675 Advanced Research Methods 3 sem. hrs.
This course is designed to further acquaint students with all phases of research;conceptualization, ethics, measurement, research format, sampling, data collection,analysis, and Interpretation. Current research gathered from scholarly journals will be amain source of content and discussion in this course. 3 credit hours. Prerequisite: EXS600

EXS 685 Advanced Kinesiology 3 sem. hrs.
This course explores the relationship between human movement, musculoskeletal function, and mechanical principles with a strong emphasis on biomechanics. Students will examine the complex dynamics of human motion through both theoretical frameworks and practical applications while being introduced to technology and techniques in motion analysis.