Exercise Science and Sport Performance

Division of Health Professions

- **Major: 70.5-71.5 credit hours**
- **Minor: 23-24 hours**
- **Major/Minor GPA required for graduation: 2.50**
- **All courses for the major or minor must be completed with a grade of C or better**

PROGRAM REQUIREMENTS:

- **Capstone: Seminar for Exercise Science and Sport Performance (PED 492) and Internship in Exercise Science and Sport Performance (PED 470)**
- **Research: Evaluation and Research in Exercise Science and Sport (PED 405)**

Mission: The exercise science and sports performance program is designed to prepare students in biological sciences and exercise science content knowledge with culminating coursework in real-world internship settings. Coursework and program requirements provide preparation in the knowledge, skills, and abilities outlined by the American College of Sports Medicine (ACSM) and the National Strength and Conditioning Association (NSCA) professional associations.

Description of Major: This major will build the foundation for students interested in careers in the field of exercise science and sport performance. Completion of this major will also make students eligible to receive the following additional certifications: American Red Cross First Aid/CPR Instructor, Certified Strength and Conditioning Specialist (CSCS) through the National Strength and Conditioning Association as well as the Health Fitness Specialist and Personal Trainer certifications through the American College of Sports Medicine (ACSM). Students may also be eligible for Clinical Certifications through the ACSM.

Student Learning Outcomes

Students will:

- Demonstrate an understanding of basic biomechanical principles and musculoskeletal anatomy.
- Understand general exercise physiology principles and demonstrate the creation of exercise prescription (pre-exercise assessment, flexibility, muscular strength, endurance, and cardiovascular).
- Assess, design, implement, and evaluate cardiorespiratory, flexibility, muscular strength, muscular endurance, and dietary habits for a diverse spectrum of participants.
- Demonstrate the ability to work with diverse populations while practicing both written and oral communication grounded in current evidence-based professional research and practices.
- Investigate benefits offered through professional memberships and certifications and provide opportunities for achieving professional memberships and certifications.
- Comprehend and develop administrative and organizational policies and procedures for exercise and recreational programming.

Preparation: The exercise science and sport performance degree prepares students to teach in community and school settings and to obtain professional certifications recognizable in athletic, exercise, and fitness professions.

Exercise Science and Sport Performance Major

Exercise science and sport performance majors must complete the health professions core requirements and the exercises science and sports performance major requirements.

HEALTH PROFESSIONS CORE REQUIREMENTS		28-29 crs.
BIO 101	BIOLOGY FOR LIFE	4
or		
BIO 110	PRINCIPLES OF CELLULAR AND MOLECULAR BIOLOGY	5
BIO 308	HUMAN ANATOMY AND PHYSIOLOGY I	5
BIO 309	HUMAN ANATOMY AND PHYSIOLOGY II	5
HPE 158	HEALTH AND WELLNESS	3
HPE 250	ASSESSMENT THROUGH TEST AND MEASUREMENTS FOR HEALTH PROFESSIONS	3
HPE 300	HUMAN NUTRITION	3
PED 157	FOUNDATIONS OF HEALTH PROFESSIONS	3
PED 206	FIRST AID	2

EXERCISES SCIENCE AND SPORTS PERFORMANCE MAJOR REQUIREMENTS		42.5 crs.
RECREATIONAL ACTIVITIES Students will complete: 1) Principles of Strength Training, 2) Principles of Speed, Agility, and Quickness, *and* 3) Advanced Strength Training		1.5
HPE 200	FOUNDATIONS OF HUMAN MOVEMENT	3
ATH 200	MEDICAL TERMINOLOGY	3
PED 202	PSYCHOLOGY OF COACHING	3
or		
PED 465	SPORT AND HEALTH PSYCHOLOGY	3
PED 349	PHYSIOLOGY OF EXERCISE	3
PED 358	INSTRUCTION AND APPLICATION FOR SPORTS PERFORMANCE	4
PED 357	ADMINISTRATION AND DEVELOPMENT OF PHYSICAL ACTIVITY PROGRAMMING (W)	3
PED 365	MOTOR DEVELOPMENT ACROSS THE LIFESPAN	3
PED 403	KINESIOLOGY (W)	3
PED 404	MOTOR LEARNING	2
PED 405	EVALUATION AND RESEARCH IN EXERCISE SCIENCE AND SPORT	3
PED 455	CONCEPTS OF RESISTANCE TRAINING	3
PED 460	FIRST AID/CPR/AED INSTRUCTOR	2
PED 470	INTERNSHIP IN EXERCISE SCIENCE AND SPORTS PERFORMANCE	4
PED 492	SEMINAR FOR EXERCISE SCIENCE AND SPORTS PERFORMANCE (taken concurrently with an internship)	2

EXERCISE SCIENCE AND SPORT PERFORMANCE MINOR		23-24 crs.
BIO 101	BIOLOGY FOR LIFE	4
or		
BIO 110	PRINCIPLES OF CELLULAR AND MOLECULAR BIOLOGY	5
BIO 308	HUMAN ANATOMY AND PHYSIOLOGY I	5
or		
BIO 309	HUMAN ANATOMY AND PHYSIOLOGY II	5
PED 202	PSYCHOLOGY OF COACHING	3
PED 206	FIRST AID	2
PED 349	PHYSIOLOGY OF EXERCISE	3
PED 455	CONCEPTS OF RESISTANCE TRAINING	3
HPE 300	HUMAN NUTRITION	3

Physical Education (PED)

PED 121 **.5**
PRINCIPLES OF STRENGTH TRAINING
This course will introduce general muscular endurance and general muscular strength training. Students will learn how to perform circuit weight training and traditional weight training techniques while utilizing both free weights and machines. Additionally, students will be introduced to training periodization, the Oxford training method (descending or reverse pyramid), the Delorme training method (incremental progression or ascending pyramid), and triangle pyramid training.

PED 124 **.5**
PRINCIPLES OF SPEED, AGILITY, AND QUICKNESS
This course will introduce several components of speed, agility, and quickness training. Students will learn how to utilize various assessments, various training apparatus and/or training equipment, and various activities to develop speed, agility, dynamic balance, quickness, and reaction-time training. Additionally, students will be introduced to training periodization.

PED 126 **.5**
ADVANCED STRENGTH TRAINING
A half-semester recreational activity class designed to introduce specific muscular development through the development of individual strength training programs. Students will learn how to utilize hypertrophy, strength, and power phases of strength training within a training program that is designed specifically to the individual student. Techniques utilized within the program may involve the utilization of free weights, machines, and other functional strength training equipment.

PED 130A-Z **.5**
SELECTED RECREATIONAL ACTIVITIES
Special activities not given on a regular basis.

PED 157 **3**
FOUNDATIONS OF HEALTH PROFESSIONS
This course is designed to introduce the student to professional employment within the broad field of healthcare professions. Concepts pertaining to the subset fields of health, physical education, exercise science, and recreation through discussion of historical, philosophical, sociological, and professional issues will be presented. Presentation and discussion on communication, professional memberships, licensure/certification requirements, employment requirements, ethical, legal, and decision-making skills required in healthcare professions will be explored. This course will also develop a basic understanding of the function of private and public instruction in physical education and the elements involved in the professional preparation of teachers.

PED 201 **2**
ATHLETIC RETIREMENT
This course is designed to help athletes transition from their sports careers to life after competition. Content addresses the psychological, social, and practical challenges of this major life change, with a focus on coping with a shift in identity, maintaining physical health, mental health, relationships and planning for a new career.

PED 202 **3**
PSYCHOLOGY OF COACHING
Psychology concepts related to the field of coaching, including human development, motivation, values, personal, and group dynamics. Special emphasis concerning techniques of coaches and responsiveness of athletes to varying coaching styles.

PED 206 **2**
FIRST AID
This is an American Red Cross Certification Course. Successful completion will qualify the student to receive the following certifications: Basic Life Support for Healthcare Providers, First Aid, Administering Emergency Oxygen, and Epinephrine Auto-Injector. A certification fee is charged for this course.

PED 280-289 **1-4**
TOPICS IN PHYSICAL EDUCATION AND COACHING

PED 349 **3**
PHYSIOLOGY OF EXERCISE
An examination of the effects of muscular activity on the various systems of the body. Special emphasis on nutrition, energy expenditure, training, performance, environmental stress, and body composition. Prerequisites: BIO 101 or 110, 308, 309, HPE 300.

PED 356 **4**
INSTRUCTION FOR EXERCISE AND LIFETIME ACTIVITY
This course is designed to prepare students to provide instruction in different activity venues including physical education and recreational settings. Special emphasis will be placed on the understanding and creation of activity and/or learning objectives and activity and educational planning. Organization and activity safety will also be emphasized, as well as teaching modifications for individuals with disabilities.

PED 357 **3**
ADMINISTRATION AND DEVELOPMENT OF PHYSICAL ACTIVITY PROGRAMMING (W)
Theory, practice, and examination of the administrative program requirements for elite sports performance, educational, and recreational settings. Organizational structure, facility design, budget, risk management, human resources, and programming will be discussed.

PED 358 **4**
INSTRUCTION AND APPLICATION FOR SPORTS PERFORMANCE
This course is designed to prepare students to provide instruction and lead clients in the application of sports performance-based activities. Emphasis will be placed on the development of programming to meet performance-based goals and client instruction on application of the components within the program. Administration, program periodization, safety and skill adaptation will be emphasized.

Physical Education (PED)

PED 365 **3**
MOTOR DEVELOPMENT ACROSS THE LIFESPAN
This course is designed to introduce the student to the phases of human development including cognitive, affective, and psychomotor movement skills. The student will acquire and demonstrate knowledge of developmental benchmarks across the lifespan for motor skill acquisition and motor skill proficiency.

PED 403 **3**
KINESIOLOGY (W)
Analysis of human motion based on anatomic and mechanical principles and the application of these principles in the teaching of physical education activities, including body mechanics. Prerequisites: BIO 101 or 110, and 308.

PED 404 **2**
MOTOR LEARNING
An examination of the process of motor skill acquisition from psychological, biomechanical, and physiological perspectives; skill and motor acquisition across the lifespan will be presented. Prerequisites: PED 157, 403 (can be taken concurrently with PED 403).

PED 405 **3**
EVALUATION AND RESEARCH IN SPORT AND EXERCISE SCIENCE
This course will investigate research methods and designs applicable to Sport Performance and Exercise Science. Discussion will include selection and development of valid and reliable measures, use of appropriate statistical procedures as well as interpretation of results.

PED 455 **3**
CONCEPTS OF RESISTANCE TRAINING
Study of the application of principles of anatomy, physiology, and exercise physiology in the recommended resistance exercises for the improvement in health and athletic performance. This course also serves as preparation for those students interested in sitting for the CSCS exam given by the NSCA Certification Commission. Students must register and take either an ACSM and/or the NSCA-CSCS exam (additional cost for each exam registration). Successfully passing the exam leads to certification. Prerequisites: BIO 101 or 110, 308, 309, PED 349, and senior standing.

PED 460 **2**
FIRST AID/CPR/AED INSTRUCTOR
Designed to train individuals to become Red Cross Instructors who can teach First Aid/CPR/AED courses. Students are required to complete an online component through the Red Cross for this course during the first two weeks of the class. Students must present current certification in First Aid and CPR for the Professional Rescuer and Healthcare Provider or Basic Life Support for Healthcare Providers to take this class. Students are responsible for paying additional Red Cross fees related to this course. Prerequisite: Minimum age 17 and successful completion of a pre-course session including a written exam. A pass is a minimum of 80% and demonstrated competency in the pre-course skills evaluation.

PED 470 **4**
INTERNSHIP IN EXERCISE SCIENCE AND SPORTS PERFORMANCE

PED 480 **1-4**
INDEPENDENT STUDY

PED 492 **2**
SEMINAR IN EXERCISE SCIENCE AND SPORTS PERFORMANCE
A capstone course in exercise science and sport performance designed to review and integrate knowledge, principles, and skills related to certification exams. Taken concurrently with PED 470 (Internship)