

# EXERCISE SCIENCE (EXSC)

## EXSC 15003 CAREERS IN HEALTH AND MEDICAL SCIENCES 2 Credit Hours

(Cross-listed with ATTR 15003 and IHS 15003) An overview of the profession of Healthcare and Medical Professional associated including employment opportunities, academic preparation, and clinical preparation. This course will address the qualities and skills required for a comprehensive list of professional opportunities in the healthcare and medical fields with an emphasis on professionalism, cultural competencies, ethics and self care. Students will be required to work with faculty and health care and medical professionals to outline a personalized program to assist in their professional development.

**Prerequisite:** None.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

## EXSC 23093 VARIABLE TITLE WORKSHOP IN EXERCISE SCIENCE

### 1-3 Credit Hours

(Repeatable for credit) Workshop to develop mastery and application of knowledge and skills that address issues in exercise science; topics vary. Satisfactory/unsatisfactory (S/U) graded.

**Prerequisite:** None.

**Schedule Type:** Workshop

**Contact Hours:** 1-3 other

**Grade Mode:** Satisfactory/Unsatisfactory

## EXSC 25057 HUMAN ANATOMY AND PHYSIOLOGY I (KBS) (KLAB) 4 Credit Hours

(Cross-listed with ATTR 25057) Comprehensive examination of anatomy and physiology related to the organization of the body and basic cell and tissue types. Specific structure and function of the muscular, skeletal, integumentary, and nervous systems are addressed.

**Prerequisite:** None.

**Schedule Type:** Laboratory, Lecture, Combined Lecture and Lab

**Contact Hours:** 3 lecture, 2 lab

**Grade Mode:** Standard Letter

**Attributes:** Kent Core Basic Sciences, Kent Core Basic Sciences Lab

## EXSC 25058 HUMAN ANATOMY AND PHYSIOLOGY II (KBS) (KLAB) 4 Credit Hours

(Cross-listed with ATTR 25058) Comprehensive examination of anatomy and physiology related to the human body under rest and exercise conditions. Specific structure and function of the metabolic, endocrine, lymphatic, digestive, urinary and reproductive systems are addressed. Advanced coverage of neurological, cardiovascular and respiratory systems are also addressed.

**Prerequisite:** ATTR 25057 or EXSC 25057 or BSCI 11010 or BSCI 21010.

**Schedule Type:** Laboratory, Lecture, Combined Lecture and Lab

**Contact Hours:** 3 lecture, 2 lab

**Grade Mode:** Standard Letter

**Attributes:** Kent Core Basic Sciences, Kent Core Basic Sciences Lab

## EXSC 34000 EXERCISE SCIENCE FOR ESPORTS 3 Credit Hours

This course examines topics within the field of exercise science and relates them to esports performance. Topics will include physical activity, sedentary behavior, mental and physical health and exercise physiology. By relating these topics to esports, students will gain an understanding of what may enhance and also diminish esports performance.

**Prerequisite:** None.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## EXSC 35040 PRACTICAL AND APPLIED CONCEPTS OF STRENGTH AND CONDITIONING 3 Credit Hours

(Equivalent to ATTR 35040) This course will discuss the practical and applied concepts related to strength and conditioning. Specifically, the course will focus on how to improve muscle strength, power, speed, agility, endurance, stamina, stability and muscle hypertrophy. Emphasis will be placed on the ability to create and administer safe and effective periodized training programs while ensuring safe and effective techniques fundamental to improvements in athletic performance.

**Prerequisite:** ATTR 25057 (and ATTR 25058) or BSCI 10020 (and BSCI 11010) or BSCI 21010 or BSCI 21020 or EXSC 25057 (and EXSC 25058).

**Corequisite:** ATTR 35054 (or EXSC 35054) and ATTR 35080 (or EXSC 35080).

**Schedule Type:** Laboratory, Lecture, Combined Lecture and Lab

**Contact Hours:** 2 lecture, 2 lab

**Grade Mode:** Standard Letter

## EXSC 35054 BIOMECHANICS 3 Credit Hours

(Cross-listed with ATTR 35054) Anatomical and mechanical bases of human movement. Emphasis is placed on tools and techniques for motion analysis, mechanical concepts, forces and performance analysis. Lecture and laboratory.

**Prerequisite:** ATTR 25057 or EXSC 25057 or BSCI 11010 or BSCI 21010.

**Schedule Type:** Combined Lecture and Lab

**Contact Hours:** 2 lecture, 2 lab

**Grade Mode:** Standard Letter

## EXSC 35068 STATISTICS FOR THE EXERCISE SCIENTIST 3 Credit Hours

Measurement and statistics applied to physical education and exercise/sport sciences; laboratory experiences in statistics test construction and administration and evaluation.

**Prerequisite:** None.

**Schedule Type:** Combined Lecture and Lab

**Contact Hours:** 2 lecture, 2 lab

**Grade Mode:** Standard Letter

## EXSC 35075 EXERCISE PROGRAMMING 3 Credit Hours

Problems and issues in developing exercise programs in institutional and commercial settings.

**Prerequisite:** ATTR 25057 or EXSC 25057 or BSCI 11010 or BSCI 21010; and ATTR 25058 or EXSC 25058 or BSCI 11020 or BSCI 21020.

**Schedule Type:** Combined Lecture and Lab

**Contact Hours:** 2 lecture, 2 lab

**Grade Mode:** Standard Letter

**EXSC 35080 PHYSIOLOGY OF EXERCISE 4 Credit Hours**

Response of the human to acute and chronic exercise with emphasis on the underlying physiological mechanisms.

**Prerequisite:** ATTR 25057 or BSCI 11010 or BSCI 21010 or EXSC 25057; and ATTR 25058 or BSCI 11020 or BSCI 21020 or EXSC 25058.

**Schedule Type:** Laboratory, Lecture, Combined Lecture and Lab

**Contact Hours:** 3 lecture, 2 lab

**Grade Mode:** Standard Letter

**EXSC 40612 EXERCISE LEADERSHIP FOR THE OLDER ADULT 3 Credit Hours**

(Cross-listed with EXPH 50612) Designed to provide students with a knowledge base in exercise leadership in the older adult population, including special populations. Students participate in the leading, supervision and evaluation of participants within the exercise program. The also assist in the collection of functional fitness data.

**Prerequisite:** None.

**Schedule Type:** Combined Lecture and Lab

**Contact Hours:** 2 lecture, 2 lab

**Grade Mode:** Standard Letter

**EXSC 43093 VARIABLE TITLE WORKSHOP IN EXERCISE SCIENCE AND EXERCISE PHYSIOLOGY 1-3 Credit Hours**

(Repeatable for credit) (Slashed with EXPH 53093) Workshop in exercise science or physiology, topics vary.

**Prerequisite:** None.

**Schedule Type:** Workshop

**Contact Hours:** 1-3 lecture

**Grade Mode:** Satisfactory/Unsatisfactory

**EXSC 43098 RESEARCH IN EXERCISE SCIENCE (ELR) 1-3 Credit Hours**

(Repeatable for a maximum of 12 credit hours) Research project completed under the supervision of a faculty member. Written approval of supervising faculty member and School Director required prior to registration.

**Prerequisite:** Special approval.

**Schedule Type:** Research

**Contact Hours:** 3-9 other

**Grade Mode:** Satisfactory/Unsatisfactory-IP

**Attributes:** Experiential Learning Requirement

**EXSC 45022 EXERCISE LEADERSHIP 2 Credit Hours**

Designed to provide the students with the knowledge base in exercise leadership. Topic areas and competencies using a variety of techniques in leading and demonstrating safe and effective methods of applying the fundamental principles of exercise science. The exercise leader will demonstrate all forms of group exercise, flexibility and balance training. The final exam is the American College of Sports Medicine Certified Exercise Physiologist certification (ACSM-EP). To take this certification requires that you be in the last semester of your senior year.

**Prerequisite:** ATTR 25057 or BSCI 11010 or BSCI 21010 or EXSC 25057; and ATTR 25058 or BSCI 11020 or BSCI 21020 or EXSC 25058; and EXSC 35080; and senior standing.

**Pre/corequisite:** EXSC 45081.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**EXSC 45023 PROFESSIONAL CERTIFICATE PREPARATION 2 Credit Hours**

This course is designed to prepare students to take the the National Strength and Conditioning Association Certified Strength and Conditioning Specialist (NSCA CSCS). Material covered will include basic exercise science, training adaptations, and methods of resistance-exercise training.

**Prerequisite:** ATTR 25057 or BSCI 11010 or BSCI 21010 or EXSC 25057; and ATTR 25058 or BSCI 11020 or BSCI 21020 or EXSC 25058; and EXSC 35080; and senior standing.

**Pre/corequisite:** ATTR 35040 and EXSC 45081.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**EXSC 45040 ADVANCED STRENGTH AND CONDITIONING 3 Credit Hours**

(Slashed with EXPH 55040) Advanced principles in strength and conditioning. Learn and understand the energy systems, anatomy, physiology and proper lifting technique of strength, speed, agility and conditioning exercises for practical application with athletes.

**Prerequisite:** ATTR 25057 or BSCI 11010 or BSCI 21010 or EXSC 25057; and ATTR 25058 or BSCI 11020 or BSCI 21020 or EXSC 25058; and ATTR 21020; and EXSC 35040; and EXSC 35080.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**EXSC 45065 EXERCISE TESTING 3 Credit Hours**

(Cross-listed with EXPH 55065) Lecture and laboratory experiences dealing with the administration and interpretation of exercise tests.

**Prerequisite:** ATTR 25057 or EXSC 25057 or BSCI 11010 or BSCI 21010; and ATTR 25058 or EXSC 25058 or BSCI 11020 or BSCI 21020.

**Schedule Type:** Combined Lecture and Lab

**Contact Hours:** 2 lecture, 2 lab

**Grade Mode:** Standard Letter

**Attributes:** CTAG Exercise Science

**EXSC 45070 ELECTROCARDIOGRAPHY FOR THE EXERCISE PHYSIOLOGIST 3 Credit Hours**

(Cross-listed with EXPH 55070) Designed to provide students with the knowledge base in electrocardiography. Students work on interpreting the 12-lead electrocardiogram with clinical case studies to enhance the knowledge base of the exercise specialist.

**Prerequisite:** ATTR 25057 or EXSC 25057 or BSCI 11010 or BSCI 21010; and ATTR 25058 or EXSC 25058 or BSCI 11020 or BSCI 21020.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**EXSC 45081 ADVANCED PHYSIOLOGY OF EXERCISE (WIC) 3 Credit Hours**

(Slashed with EXPH 45081) This course is designed to provide an augmented understanding of acute and chronic responses to exercise. Focus is placed on understanding the physiological responses at both the systems and the cellular levels. Emphasis is placed on muscle bioenergetics, environmental physiology, ergogenic aids, sex differences, extreme sports, children and adolescents in sport and exercise and a greater understanding of muscle and cardiorespiratory responses to exercise.

**Prerequisite:** ATTR 25057 (and ATTR 25058) or BSCI 11010 (and BSCI 11020) or BSCI 21010 or BSCI 21020 or EXSC 25057 (and EXSC 25058); and EXSC 35080.

**Schedule Type:** Laboratory, Lecture, Combined Lecture and Lab

**Contact Hours:** 2 lecture, 2 lab

**Grade Mode:** Standard Letter

**Attributes:** Writing Intensive Course

**EXSC 45096 INDIVIDUAL INVESTIGATION IN EXERCISE SCIENCE (ELR) 1-3 Credit Hours**

(Repeatable for a maximum of 6 credit hours) Independent study completed under the supervision of a faculty member. Written approval of supervising faculty member and school director required prior to registration.

**Prerequisite:** Special approval.

**Schedule Type:** Individual Investigation

**Contact Hours:** 3-9 other

**Grade Mode:** Standard Letter

**Attributes:** Experiential Learning Requirement

**EXSC 45480 INTERNSHIP SEMINAR IN EXERCISE SCIENCE 1 Credit Hour**

Overview of the internship possibilities that are available for the exercise science major. The American College of Sports Medicine (ACSM) certification workshops and the scope of the practice for the exercises specialist is discussed in detail.

**Prerequisite:** Special approval.

**Schedule Type:** Lecture

**Contact Hours:** 1 lecture

**Grade Mode:** Standard Letter

**EXSC 45481 SEMINAR IN EXERCISE PHYSIOLOGY 1 Credit Hour**

Provides an overview of the research possibilities and the internship possibilities that are available for the exercise science major. The Institutional Review Board, research methodology and the risks and benefits of research in the area of exercise science are discussed in detail. Also covers The American College of Sports Medicine (ACSM) certification workshops and the scope of the practice for the exercises specialist.

**Prerequisite:** Special approval.

**Schedule Type:** Lecture

**Contact Hours:** 1 lecture

**Grade Mode:** Standard Letter

**EXSC 45492 INTERNSHIP IN PHYSICAL FITNESS AND CARDIAC REHABILITATION (ELR) 1-9 Credit Hours**

(Repeatable for a maximum of 9 credit hours) Supervised experience providing practical experience in administration and operation of programs in physical fitness, health enhancement and or cardiac rehabilitation. 45 clock hours per credit hour.

**Prerequisite:** Special approval.

**Schedule Type:** Practical Experience

**Contact Hours:** 3-27 other

**Grade Mode:** Satisfactory/Unsatisfactory-IP

**Attributes:** Experiential Learning Requirement

**EXSC 46095 SPECIAL TOPICS IN EXERCISE SCIENCE 1-3 Credit Hours**

(Repeatable for credit) Selected topics in exercise science dependent upon interest.

**Prerequisite:** None.

**Schedule Type:** Lecture

**Contact Hours:** 1-3 lecture

**Grade Mode:** Standard Letter