

EXERCISE SCIENCE (EXSC)

EXSC 1460 Fundamentals of Anatomy and Physiology Lab

[1 credit hour]

Laboratory sessions designed to provide the fundamentals of anatomy and physiology of the cell, tissues, and major organ systems of the human body using a systemic approach. Topics include scientific method, anatomical terminology, the cell, the four tissue types, and the eleven organ systems of the human body.

Corequisites: EXSC 1560

Term Offered: Spring, Summer, Fall

Core Natural Sciences

EXSC 1560 Fundamentals of Anatomy and Physiology

[3 credit hours]

This course describes the fundamentals of anatomy and physiology of the cell, tissues, and major organ systems of the human body using a systemic approach. Topics include anatomical terminology, homeostasis, the cell, the four tissue types, and the eleven organ systems of the human body.

Corequisites: EXSC 1460

Term Offered: Spring, Summer, Fall

Core Natural Sciences

EXSC 1700 Intro to Exercise Science

[2 credit hours]

An introduction to the professions involving exercise science, sports science, athletic training and rehabilitation therapy. Emphasis is on basic concepts of anatomical, neurological, physiological, biomechanical and psychological function in human movement.

Term Offered: Spring, Fall

EXSC 2460 Human Anatomy And Physiology I Lab

[1 credit hour]

Laboratory exercise in anatomical terminology, cell division and transport, histology, and dissection, identification, and physiology of the skeletal system, skeletal muscle system, and nervous system; including the eye and ear.

Corequisites: EXSC 2560

Term Offered: Spring, Summer, Fall

Core Natural Sciences

EXSC 2470 Human Anatomy And Physiology II Lab

[1 credit hour]

Laboratory exercises in endocrine, cardiovascular, respiratory, digestive, lymphatic, urinary, and reproductive anatomy, histology, physiology, including computer assisted experiments.

Corequisites: EXSC 2570

Term Offered: Spring, Summer, Fall

EXSC 2510 Human Anatomy

[3 credit hours]

An integrated study of both regional anatomy and musculoskeletal, cardiovascular, lymphatic, respiratory, neurologic, digestive, renal, endocrine and reproductive systems. Required for students in exercise science and allied health professional programs.

Prerequisites: KINE 1700 with a minimum grade of C or EXSC 1700 with a minimum grade of C

Corequisites: EXSC 2520

Term Offered: Spring, Summer, Fall

Core Natural Sciences

EXSC 2520 Human Anatomy Lab

[1 credit hour]

Laboratory exercises in musculoskeletal, neurological, cardiovascular and respiratory anatomy.

Corequisites: EXSC 2510

Term Offered: Spring, Summer, Fall

Core Natural Sciences

EXSC 2530 Human Physiology

[3 credit hours]

This course provides foundational information on human physiology. Emphasis is placed on cell physiology, metabolism, as well as the musculoskeletal, cardiovascular, respiratory, endocrine, and immune systems in the maintenance of normal body function.

Prerequisites: (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C) or (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C)

Term Offered: Spring, Summer, Fall

EXSC 2540 Human Physiology Lab

[1 credit hour]

Laboratory exercises in musculoskeletal, neurological, cardiovascular and respiratory physiology.

Corequisites: EXSC 2530

Term Offered: Spring, Summer, Fall

EXSC 2560 Anatomy and Physiology I

[3 credit hours]

Anatomy and physiology of the human body. Study of cells, tissues, special senses, and the skeletal, muscle, and nervous systems.

Corequisites: EXSC 2460

Term Offered: Spring, Summer, Fall

Core Natural Sciences, OT36 Natural Science

EXSC 2570 Human Anatomy and Physiol II

[3 credit hours]

Anatomy and physiology of human endocrine, blood, cardiovascular, lymphatic, respiratory, digestive, urinary and electrolyte, and reproductive systems.

Prerequisites: (KINE 2460 with a minimum grade of C and KINE 2560 with a minimum grade of C) or (EXSC 2460 with a minimum grade of C and EXSC 2560 with a minimum grade of C)

Corequisites: EXSC 2470

Term Offered: Spring, Summer, Fall

EXSC 2580 Human Pathophysiology For Health Care

[3 credit hours]

Study of pathology and general health management of diseases and injuries across the life span. Topics include etiology, symptoms, and the physical and psychological reactions to diseases and injuries of organ systems.

Prerequisites: (KINE 2460 with a minimum grade of D- and KINE 2470 with a minimum grade of D- and KINE 2560 with a minimum grade of D- and KINE 2570 with a minimum grade of D-) or (KINE 2510 with a minimum grade of D- and KINE 2520 with a minimum grade of D-) or (EXSC 2460 with a minimum grade of D- and EXSC 2470 with a minimum grade of D- and EXSC 2560 with a minimum grade of D- and EXSC 2570 with a minimum grade of D-) or (EXSC 2510 with a minimum grade of D- and EXSC 2520 with a minimum grade of D-)

Term Offered: Spring, Fall**EXSC 2590 Microbiology and Infectious Diseases**

[3 credit hours]

This course describes and differentiates basic Microbiology topics as well as covering bacterial, viral, and protozoan infections within various body systems.

Prerequisites: BIOL 2150 with a minimum grade of C or BIOL 2170 with a minimum grade of C or EEES 2150 with a minimum grade of C or KINE 2510 with a minimum grade of C or KINE 2530 with a minimum grade of C or KINE 2560 with a minimum grade of C or EXSC 2510 with a minimum grade of C or EXSC 2530 with a minimum grade of C or EXSC 2560 with a minimum grade of C

Term Offered: Spring, Summer, Fall**EXSC 3200 Advanced Human Anatomy**

[3 credit hours]

An elective course that applies musculoskeletal anatomy to human movement, function, injury evaluation and rehabilitation through in cadaver observation and dissection.

Prerequisites: (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C)

Term Offered: Spring, Summer, Fall**EXSC 3240 Concepts of Exercise Fitness and Health Strategies**

[3 credit hours]

This focus of this course is the self-exploration of the importance of regular physical activity including cardiovascular and muscular exercise on maintaining physical fitness and wellness. Students will conduct fitness assessments. Min. grade of C for HPFP concentration.

Prerequisites: EXSC 1560 with a minimum grade of C and EXSC 1460 with a minimum grade of C or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C)

Term Offered: Spring, Summer, Fall**EXSC 3520 Applied Exercise Physiology**

[3 credit hours]

This course will provide information related to the physiological responses of the human organism to exercise and exercise training. Emphasis will also be placed on the role exercise plays in health and disease prevention.

Prerequisites: KINE 2530 with a minimum grade of C or KINE 2570 with a minimum grade of C or EXSC 2530 with a minimum grade of C or EXSC 2570 with a minimum grade of C

Term Offered: Spring, Summer, Fall**EXSC 3530 Applied Exercise Physiology Laboratory**

[1 credit hour]

This course is the laboratory component of the applied exercise physiology course. Emphasis will be placed on the concepts learned in lecture. This will occur through hands-on activities and experiments involving various forms of exercise testing and the use of standardized equipment.

Corequisites: EXSC 3520**Term Offered:** Spring, Summer, Fall**EXSC 3580 Exercise Pathophysiology**

[3 credit hours]

A discovery of the pathophysiology of organ systems, concentrating on metabolic, cardiovascular, respiratory, endocrine, muscle, and gastrointestinal systems with exercise as a guiding element of discussion.

Prerequisites: EXSC 2530 with a minimum grade of C**Term Offered:** Spring, Fall**EXSC 3620 Professional Responsibilities in the Fitness Industry**

[3 credit hours]

This course examines the ethical, legal and professional responsibilities of working in an allied health profession as a personal trainer, fitness consultant or exercise specialist. Min. grade of C for HPFP concentrations.

Term Offered: Spring, Fall**EXSC 3650 Foundations of Sports Medicine**

[3 credit hours]

A review of the foundation aspects of sports medicine, including but not limited to: prevention and wellness, emergency care, clinical examination and diagnosis, therapeutic interventions and aspects of professional practice. Specifically relates to the fields of athletic training, sports medicine, musculoskeletal rehabilitation and orthopedic medicine. Course will also include observation of sports medicine professionals in a clinical setting.

EXSC 3680 Sport and Exercise Pharmacology

[3 credit hours]

Provide the basics of pharmacology related to sport and exercise including: pharmacokinetics, indications and contradictions of various drugs and legal concerns related to using therapeutic and non-therapeutic drugs. Min. grade of C for HPFP concentration.

Prerequisites: (KINE 2560 with a minimum grade of C and KINE 2460 with a minimum grade of C and KINE 2570 with a minimum grade of C and KINE 2470 with a minimum grade of C) or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C) or (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C)

Term Offered: Spring**EXSC 3830 Principles of Strength Conditioning**

[3 credit hours]

This course provides students with a fundamental understanding of muscular strength conditioning principles and the application of these principles to exercise programming relevant to physical activity and athletic performance. Min. grade of C for HPFP concentration.

Prerequisites: (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C) or (KINE 2560 with a minimum grade of C and KINE 2460 with a minimum grade of C and KINE 2570 with a minimum grade of C and KINE 2470 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

Term Offered: Fall**EXSC 3850 Cardiac Dysrhythmia Interpretation**

[3 credit hours]

This course examines cardiac anatomy, electrophysiology and basic cardiac rhythms with an emphasis on the recognition and interpretation of cardiac dysrhythmias. Min. grade of C for HPFP concentration.

Prerequisites: (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

Corequisites: EXSC 3860**Term Offered:** Fall**EXSC 3860 Cardiac Dysrhythmia Lab**

[1 credit hour]

This course is the practical application of the techniques required to administer a 12 lead EKG at rest and during exercise. Students will record multiple EKG's and interpret the rhythm. Min. grade of C for HPFP concentration.

Prerequisites: (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

Corequisites: EXSC 3850**Term Offered:** Fall**EXSC 3950 Research Design in Exercise Science**

[3 credit hours]

This course emphasizes the design, analysis and interpretation of qualitative and quantitative research methods in the areas of athletic training, exercise science and other health-related fields. Min. grade of C or better for HPFP concentration.

Prerequisites: MATH 2600 with a minimum grade of D- or RESM 4100 with a minimum grade of D-

Term Offered: Spring, Fall**EXSC 4140 Fitness Internship I**

[4 credit hours]

Students will actively engage and participate in the day-to-day functions including operational, managerial and client assessments in a health, wellness or fitness facility (16 hours/week). Min. grade of C for HPFP concentration.

Prerequisites: (KINE 3850 with a minimum grade of C and KINE 3860 with a minimum grade of C and KINE 4850 with a minimum grade of C and KINE 4860 with a minimum grade of C) or (EXSC 3850 with a minimum grade of C and EXSC 3860 with a minimum grade of C and EXSC 4850 with a minimum grade of C and EXSC 4860 with a minimum grade of C)

Term Offered: Fall**EXSC 4210 Exercise Facility Management**

[3 credit hours]

Students will develop an understanding of the skills necessary for marketing, promoting and managing various fitness, wellness and rehabilitation facilities. Min. grade of C for HPFP concentration.

Term Offered: Spring**EXSC 4250 Readings in Exercise Biology**

[3 credit hours]

Faculty and student directed readings of original research in Exercise Biology, along with laboratory demonstrations. Readings will focus on how changes in physical activity influence the biology of skeletal muscle.

Term Offered: Spring, Fall

EXSC 4540 Applied Biomechanics

[3 credit hours]

This course focuses on the application of biomechanics concepts to the acquisition and refinement of fundamental movement patterns, basic functional skills and sport activities. Such topics as locomotion, balance and the biomechanical basis of injury are examined.

Prerequisites: (KINE 2510 with a minimum grade of C and KINE 2530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2530 with a minimum grade of C)

Term Offered: Spring, Fall

EXSC 4550 Applied Biomechanics Lab

[1 credit hour]

This course is the laboratory component of the applied biomechanics course. Emphasis will be placed on the application of the concepts learned in lecture to rehabilitation, sports in jury, exercise, and sport situations. This will occur through hands-on activities and experiments involving contemporary forms of biomechanical instrumentation.

Corequisites: EXSC 4540

Term Offered: Spring, Fall

EXSC 4640 Neurological And Pathological Foundations Of Rehabilitation

[3 credit hours]

Study of neurological control of normal movement and the implications of various medical pathologies for rehabilitation. Emphasis on inflammatory processes, metabolic and vascular disturbances, traumatic injuries, nutritional deficiencies, neoplasms, degenerative conditions and congenital disorders.

Prerequisites: (KINE 2510 with a minimum grade of C or KINE 2560 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C or EXSC 2560 with a minimum grade of C)

Term Offered: Spring, Summer, Fall

EXSC 4830 Principles of Endurance Conditioning

[3 credit hours]

This course is intended to prepare students with a fundamental understanding of endurance conditioning principles and the application of these principles to exercise programming relevant to physical activity and athletic performance.

Prerequisites: (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C) or (KINE 2560 with a minimum grade of C and KINE 2460 with a minimum grade of C and KINE 2570 with a minimum grade of C and KINE 2470 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

Term Offered: Fall

EXSC 4840 Fitness Internship II

[4 credit hours]

Students will actively engage and participate in the day-to-day functions including operational, managerial and client assessments in a health, wellness or fitness facility (16 hours/week). Min. grade of C for HPFP concentration.

Prerequisites: KINE 4140 with a minimum grade of D- or EXSC 4140 with a minimum grade of D-

Term Offered: Spring

EXSC 4850 Clinical Exercise Testing

[3 credit hours]

The purpose of this course is to provide students with an understanding of the relationship between exercise and chronic disease, an understanding of the mechanisms and adaptations by which exercise influences the disease process, and an understanding of the role and importance of exercise testing and training in the prevention, evaluation and treatment of these chronic diseases. Min. grade of C for HPFP concentration.

Prerequisites: (KINE 3850 with a minimum grade of C and KINE 3860 with a minimum grade of C) or (EXSC 3850 with a minimum grade of C and EXSC 3860 with a minimum grade of C)

Term Offered: Spring

EXSC 4860 Clinical Exercise Testing Lab

[1 credit hour]

The purpose of this course is to provide students with the skills needed to perform a 12 lead electrocardiogram stress test on their own. Min. grade of C for HPFP concentration.

Prerequisites: EXSC 3520 with a minimum grade of C- and EXSC 3530 with a minimum grade of C-

Corequisites: EXSC 4850

Term Offered: Spring

EXSC 4900 Human Performance Seminar

[1-3 credit hours]

Classroom and laboratory analysis of current research in varied topic areas.

Term Offered: Spring, Fall

EXSC 4940 Internship-Practicum

[2-15 credit hours]

Clinical experience in locations both inside and outside the university setting. Placement depends on area of study.

Term Offered: Summer

EXSC 4990 Independent Study In Exercise Science

[1-3 credit hours]

Directed individual study. Specialty title, seminar sheet and permission of instructor required.

Term Offered: Spring, Summer, Fall

EXSC 5110 Measurement And Statistical Inference In Human Performance

[3 credit hours]

Application of measurement and statistical inference to human performance testing and research. Includes descriptive and inferential statistics, principles of test construction and introduction to authentic assessment in public schools.

Term Offered: Spring

EXSC 5250 Readings In Exercise Biology

[3 credit hours]

Faculty and student directed readings of original research in Exercise Biology. Readings will focus on how changes in physical activity influence the biology of skeletal muscle.

Term Offered: Spring, Fall**EXSC 6100 Physiology of Exercise**

[3 credit hours]

This course is designed to provide an understanding of the mechanisms of the physiological responses to exercise. Emphasis will be placed on adaptations to exercise training and the role of exercise in health and disease.

Term Offered: Fall**EXSC 6130 Biomechanics Of Human Motion**

[3 credit hours]

This course provides a basic overview of the principles of biomechanics as they apply to human movement. In-depth discussion and lab activities focus on the application of these principles to such topics as muscle function, locomotion, balance, mechanisms of injury and ergonomics.

Term Offered: Spring, Fall**EXSC 6200 Biomechanical Instrumentation**

[3 credit hours]

Provides students with experience in the research and clinical use of videography, force and pressure plates, electromyography and other systems in applied biomechanics. Emphasis on hands-on lab experience and topics related to data collection and signal processing.

Prerequisites: KINE 6130 with a minimum grade of D- or EXSC 6130 with a minimum grade of D-**Term Offered:** Spring**EXSC 6230 Scientific Writing And Research Methods**

[3 credit hours]

Principles and issues involved in the design and conduct of research in exercise science: critical evaluation, research design, development of a research proposal, grant acquisition, and compliance with institutional and federal guidelines on the use of humans and animals.

Term Offered: Fall**EXSC 6420 Cardiopulmonary Exercise Physiology**

[3 credit hours]

The responses and adaptations of the cardiovascular and pulmonary systems to exercise in healthy individuals.

Prerequisites: KINE 6100 with a minimum grade of D- or EXSC 6100 with a minimum grade of D-**Term Offered:** Spring, Fall**EXSC 6430 Environmental Physiology**

[3 credit hours]

Physiological responses and adaptations to extreme environments.

Term Offered: Fall**EXSC 6460 Readings in Cardiovascular Physiology**

[3 credit hours]

This is a faculty directed examination of current research in Cardiovascular Physiology. Emphasis is placed on the role of physical activity on the prevention and/or treatment of cardiovascular treatment.

Term Offered: Spring, Fall**EXSC 6540 Laboratory Techniques In Exercise Physiology**

[3 credit hours]

This course covers theoretical and practical knowledge for the assessment of exercise metabolism, cardiorespiratory function, body composition, thermoregulation and skeletal muscle function. Hands-on data collection will be emphasized.

Term Offered: Fall**EXSC 6550 Lab Techniques In Exercise Biology**

[3 credit hours]

The course provides students with theoretical and practical knowledge for assessing cellular and molecular responses to exercise and inactivity. Emphasis will be placed on laboratory safety, reagent preparation, cell culture techniques, and tissue analysis.

Prerequisites: (KINE 6100 with a minimum grade of D- and KINE 6540 with a minimum grade of D-) or (EXSC 6100 with a minimum grade of D- and EXSC 6540 with a minimum grade of D-)**EXSC 6720 Advanced Clinical Anatomy**

[2 credit hours]

A cadaver anatomy course focusing on the extremities. Emphasis will be placed on the link between anatomical structure, orthopedic injuries, and clinical practice.

Term Offered: Fall**EXSC 6960 Masters Thesis In Exercises Science**

[1-4 credit hours]

Independence research in Exercise Science completed as part of the requirements for the Master of Science in Exercise Science degree.

Term Offered: Spring, Summer, Fall**EXSC 6990 Independent Study in Exercise Science**

[1-4 credit hours]

Faculty supervised independent reading, laboratory research, field experience and other activities not suited for class instruction.

Term Offered: Spring, Summer, Fall**EXSC 7110 Measurement And Statistical Inference In Human Performance**

[3 credit hours]

Application of measurement and statistical inference to human performance testing and research. Includes descriptive and inferential statistics, principles of test construction and introduction to authentic assessment in public schools.

Term Offered: Spring**EXSC 7250 Readings In Exercise Biology**

[3 credit hours]

Faculty and student directed readings of original research in Exercise Biology. Readings will focus on how changes in physical activity influence the biology of skeletal muscle.

Term Offered: Spring, Fall**EXSC 8100 Physiology of Exercise**

[3 credit hours]

This course is designed to provide an understanding mechanisms of the physiological responses to exercise. Emphasis will be placed on adaptations to exercise training and the role of exercise in health and disease.

Term Offered: Fall

EXSC 8130 Biomechanics Of Human Motion

[3 credit hours]

This course provides a basic overview of the principles of biomechanics as they apply to human movement. In-depth discussion and lab activities focus on the application of these principles to such topics as muscle function, locomotion, balance, mechanisms of injury and ergonomics.

Term Offered: Spring, Fall**EXSC 8200 Biomechanical Instrumentation**

[3 credit hours]

Provides students with experience in the research and clinical use of videography, force and pressure plates, electromyography and other systems in applied biomechanics. Emphasis on hands-on lab experience and topics related to data collection and signal processing.

Prerequisites: (KINE 6130 with a minimum grade of D- and KINE 8130 with a minimum grade of D-) or (EXSC 6130 with a minimum grade of D- and EXSC 8130 with a minimum grade of D-)

Term Offered: Spring**EXSC 8230 Scientific Writing And Research Methods**

[3 credit hours]

Principles and issues involved in the design and conduct of research in exercise science: critical evaluation, research design, development of a research proposal, grant acquisition, and compliance with institutional and federal guidelines on the use of humans and animals.

Term Offered: Fall**EXSC 8420 Cardiopulmonary Exercise Physiology**

[3 credit hours]

The responses and adaptations of the cardiovascular and pulmonary systems to exercise in healthy individuals.

Prerequisites: KINE 8100 with a minimum grade of D- or EXSC 8100 with a minimum grade of D-

Term Offered: Spring, Fall**EXSC 8430 Environmental Physiology**

[3 credit hours]

Physiological responses and adaptations to extreme environments.

Term Offered: Fall**EXSC 8460 Readings in Cardiovascular Physiology**

[3 credit hours]

This is a faculty directed examination of current research in Cardiovascular Physiology. Emphasis is placed on the role of physical activity on the prevention and/or treatment of cardiovascular treatment.

Term Offered: Spring, Fall**EXSC 8540 Laboratory Techniques In Exercise Physiology**

[3 credit hours]

This course covers theoretical and practical knowledge for the assessment of exercise metabolism, cardiorespiratory function, body composition, thermoregulation and skeletal muscle function. Hands-on data collection will be emphasized.

Term Offered: Fall**EXSC 8550 Lab Techniques In Exercise Biology**

[3 credit hours]

The course provides students with theoretical and practical knowledge for assessing cellular and molecular responses to exercise and inactivity. Emphasis will be placed on laboratory safety, reagent preparation, cell culture techniques, and tissue analysis.

Prerequisites: (KINE 8100 with a minimum grade of D- and KINE 8540 with a minimum grade of D-) or (EXSC 8100 with a minimum grade of D- and EXSC 8540 with a minimum grade of D-)

EXSC 8720 Anatomical Concepts for Clinical Practice

[3 credit hours]

A cadaver anatomy course focusing on the extremities. Emphasis will be placed on the link between anatomical structure, orthopedic injuries, and clinical practice.

Term Offered: Fall**EXSC 8960 Doctoral Dissertation In Exercise Science**

[1-12 credit hours]

Directed research towards completion of the doctoral degree. Students may register for credit in more than one semester. Total dissertation credit toward the degree may not exceed 16 hours.

Term Offered: Spring, Summer, Fall**EXSC 8990 Independent Study In Exercise Science**

[1-4 credit hours]

Faculty supervised independent reading, laboratory research, field experience and other activities not suited for class instruction.

Term Offered: Spring, Summer, Fall