

EXERCISE SCIENCE (EXSC)

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