



NKU Masters of Exercise Science - Online 31 Hours

- *Courses will be 7-week accelerate courses
- *Initially, 4 courses per semester offered
- *100% online

Purpose - The purpose of the online Master of Science in Exercise Science at Northern Kentucky University is to prepare students and professionals for a wide variety of career options within the field of exercise science while also preparing them for research as future doctoral students.

Credits Core Courses (16 Hours) – Online

1 KIN 501 – Laboratory Techniques in Exercise Science (Online/Video instruction)

KIN 501 will allow students the opportunity of a hands-on learning experience in which they will utilize or learn about advanced technology used in exercise science related fields.

Course Description

The laboratory techniques in exercise science online class will provide students with detailed and up-to-date information regarding performance-based technology and laboratory techniques currently used in the field today. KIN 501 will also allow students the option to come to NKU for an enriched hands-on learning experience with the technology available in the Human Performance Laboratory.

3 KIN 502 - Research Methods and Analytics in Exercise Science

KIN 601 will set the foundation for students to understand research, design, methods and the appropriate statistical analyses required for analyzing and interpreting data in exercise science.

Course Description

The research methods in exercise science online class will provide students with an in-depth learning experience regarding research design and proper statistical analysis to utilize based on design and types of data. Students will learn how to set up and use statistical software for their analyses.

3 KIN 503 - Advanced Exercise Physiology

KIN 602 will describe how the body physiologically responds to exercise from the cellular level to the whole organism level.

Course Description

This course will cover the body's acute and chronic responses to various forms of exercise from biochemical changes within the muscle to long-term adaptations that improve performance. Additionally, these changes will be looked under extreme conditions such as high temperature and high altitude environments.

3 KIN 603 – Strength and Conditioning Programming

KIN 603 will enhance the students understanding of exercise, strength and conditioning programming for general and athletic populations.

Course Description

The strength and conditioning programming online class will provide students with an in-depth learning experience regarding current methods in strength and conditioning programming. Students will learn how to develop and implement programs for athlete, youth, adults and geriatric populations based on one's health, fitness level and testing results.

3 KIN 604 - Cardiorespiratory Physiology and ECGs

KIN 604 will increase students' knowledge of the cardiorespiratory systems' physiology, including the role of electrocardiograms, in understanding health and performance in diseased and athletic populations.

Course Description

This course will be an in depth look at the function of the cardiovascular and respiratory systems, comparing rest to exercise. Focus will include management of hemodynamics and respiratory function, looking at diseased and athletic populations for insight. Cardiovascular function will include a look at cardiac muscle function including electrophysiology, culminating with electrocardiogram interpretation with comparisons of normal, athletic and diseased populations.

3 KIN 605 – Injury Prevention and Rehabilitation

KIN 605 will allow fitness professionals to identify muscular weaknesses, deficits and imbalances prior to injury. Then students will obtain the necessary knowledge and skill to create a rehabilitation progression for injured persons

Course Description

The injury prevention online class will provide students with an in-depth learning experience regarding common and even less common injuries and ailments in an athletic and general population. Students will learn how to develop and implement rehabilitation and injury prevention programs for athletes, youth, adults and geriatric populations.

Credits Concentration Requirements (15 hours) - Online

3 KIN 681 – Exercise Energy Metabolism

KIN 681 will strengthen the student's understanding of human metabolism as it relates to bioenergetics, nutrition and biochemical processes.

Course Description

The exercise and energy metabolism online class will provide students with in-depth content regarding the physiology of metabolism, energy utilization and advanced nutritional strategies to optimize human performance.

3 KIN 682 – Advanced Clinical Physiology (CEP Prep)

KIN 682 will provide students with an advanced understanding of pathophysiology of common diseases and the role of exercise in diagnosing and managing such diseases.

Course Description

The clinical exercise physiology course will teach students how to assess patients with chronic diseases, complete exercise testing while making special considerations based on disease diagnosis, and prescribe exercise to help manage disease and improve activities of daily living.

3 KIN 683 – Analytics in Sports Science

KIN 683 will teach students how to manage, interpret and apply information from large data sets that are common in sport and exercise related fields today.

Course Description

The analytics online class will teach students how to manage, interpret and apply information from large data sets that are common in sport and exercise related fields today. Sport performance and health care analytics will improve students understand of how technology is being utilized in the field of exercise science and how those big data sets should be analyzed to improve decision making regarding athlete/patient health.

6 KIN 696 – Internship

or

6 KIN 697 - Thesis I

KIN 699 – Thesis II (Final Presentation – Thesis Defense)

KIN 697 - Thesis Option (6 hours)

Requires completion of a thesis project for which the student must first register for six credit-hour course of KIN 698 (Thesis I), subsequently maintaining continuous registration in KIN 699 (Thesis II) until completion and defense of the thesis. A nominal fee is assessed for registration in KIN 699.

Course Description

The Thesis Option will require students to design, complete and IRB, implement, collect data and report findings for an approved topic related to exercise science.

Non-thesis Option KIN 696 Internship (6 credits)

Requires completion of six graduate credit-hours and upon completion of the graduate internship, student are required to take a comprehensive exam from all core and required course within the KIN graduate program prior to graduation.

Course Description

The Internship Option will require students to seek and obtain a qualified internship in the field of exercise science. Internships must be related to exercise or clinically-based.