

Kinesiology Graduate Course Descriptions

KIN 601

History of Exercise and Sport Science 3 credits

Historical concepts, systems, patterns, and traditions that have influenced American physical activity and sport, with emphasis on the evolution of kinesiology within the discipline of exercise and sport science.

KIN 605

Sports Nutrition 3 credits

Popular nutrition practices utilized by competitive and recreational athletes focusing on dietary analyses, scientific support, and efficacy. Emphasis on fuel, alterations in body composition, weight control, metabolic pathways, and ergogenic aids.

KIN 614

Enhancing Mental and Motor Abilities 3 credits

Topics of mental and motor abilities including attention, arousal states, information processing, and practice schedules. Special emphasis on enhancing motor performance through mental strategies.

KIN 615

Forensic Kinesiology 3 credits

Survey of forensic investigation. Focus on personal injury and accident avoidance from an interdisciplinary perspective. Emphasis on humans and their interactions in the physical environment.

KIN 685

Physical Activity and the Law 3 credits

Legal principles associated with physical activity professions. Emphasis on practical applications of legal issues in risk management, safety procedures, negligence, liability, contracts, and professional ethics, as well as recognition and minimization of legal risk during physical activity.

KIN 691

Exercise Physiology 3 credits

Physiological changes in human organisms during physical exercise; physiological basis for planning physical education programs; observations of respiratory, circulatory, nervous, and metabolic adjustments to physical exercise.

KIN 692

Clinical Exercise Physiology 3 credits

Pathophysiology of cardiovascular disease; role of exercise in treatment and prevention of coronary heart disease; exercise stress testing principles and procedures; prescribing exercise programs for healthy adults and patient populations.

KIN 700**Special Problems in Kinesiology 1–6 credits**

Specialized instruction and/or research designed to develop depth in understanding a current kinesiology problem.

KIN 730**Organization and Administration of Athletic Training**

Develop and utilize organization and administrative theories and philosophies in managing facilities, co-workers, and students in a variety of athletic settings.

KIN731**Orthopedic Assessment in Sports Medicine 3 credits**

Theory and methods of orthopedic assessment as they relate to the understanding, evaluation, treatment, and rehabilitation of sport injuries. Emphasis on the advanced understanding of the theoretical applications of advanced assessment techniques for orthopedic injuries.

KIN 733**Psychological Aspects of Sport and Rehabilitation 3 credits**

Overview of theoretical concepts and techniques in sport psychology. Emphasis on the application of psychology to human movement, skilled athletic performance, and injury rehabilitation.

KIN 734**Therapeutic Intervention in Sports Medicine 3 credits**

Theoretical background in the application of therapeutic intervention in a practical setting.

KIN 735**Sports Medicine Rehabilitation Principles and Practices 3 credits**

Provides opportunity to study theory and techniques of various exercise rehabilitation processes, and to apply these processes on a case study basis.

KIN 736**Biomechanical Applications in Kinesiology 3 credits**

Provides opportunity to learn mechanical principles underlying human movement, and to apply these skills in a laboratory situation.

KIN 737**Biomechanics of Strength 3 credits**

Interdisciplinary examination of concepts and principles involved in strength development and force production. Includes study of neurological, physiological, and mechanical factors affecting force/tension/power generation, and biomechanical interactions with external loads and various resistance training equipment.

KIN 738**Human Physiology 3 credits**

Study of mechanisms which regulate physiological systems and the way regulation functions to maintain homeostasis. Emphasis on those systems involved in the integrated response to exercise.

KIN 739**Evaluation of Physical Work Capacity 3 credits**

Concepts and methodology in the measurement of energy metabolism in humans. Examination of the various methods used to measure physical working capacity with the treadmill and ergometry. Understanding of basic electrophysiology of myocardium and pulmonary function measurements.

KIN 740**Advanced Exercise Physiology 3 credits**

Lecture, discussion, and laboratory experiences dealing with the impact of acute and chronic exercise on several systems. Selected topics such as nutrition and exercise, weight control, physical work capacity, and body composition.

KIN 741**Independent Study in Exercise Physiology I 3 credits**

Individually arranged programs of in-depth study on selected topics in exercise physiology. Emphasis on respiratory gas analysis, human calorimetry, exercise electrocardiography, body composition, and physical work capacity.

KIN 742**Independent Study in Exercise Physiology II 3 credits**

Individually arranged programs of in-depth study on selected topics in exercise physiology. Emphasis on respiratory gas analysis, human calorimetry, exercise electrocardiography, body composition, and physical work capacity.

KIN 743**Research Techniques in Biomechanics 3 credits**

Examination of some of the techniques used in biomechanical research for data collection, analysis, and presentation. Emphasis on developing an understanding of experimental techniques, their capabilities and limitations. The lecture/discussion/lab sessions provide a historical and theoretical basis for each of the techniques examined.

KIN 744**Thermoregulation During Physical Work 3 credits**

Emphasizes physical mechanisms of heat transfer and their physiological control: relationship among body temperatures, sweat rate, exercise loads, environmental temperature, and heat stress.

KIN 745**Human Energy Metabolism 3 credits**

Study of the interactions between nutrition, energy metabolism, and physical exercise. Emphasis on how the body assimilates, stores, and make available food energy to power muscular work.

KIN 747**Graduate Seminar 1 credit**

Oral presentations of proposed and completed research by graduate students, graduate faculty, and guests.

KIN 748**Professional Paper 1–6 credits**

May be repeated, but only three credits will be applied to the student's program. Pass or fail grading.

KIN 749**Thesis 1–6 credits**

May be repeated, but only six credits will be applied to the student's program. Pass or fail grading.

KIN 750**Research Methods 3 credits**

Overview of techniques used in historical, descriptive, and experimental research such as those found in exercise science, health, physical education, and recreation research publications. Procedures for formulating a research proposal; hypothesis testing; experimental designs and statistical applications.

KIN 751**Selected Application of Statistical Techniques I 3 credits**

Introduction to descriptive and inferential statistical procedures utilized in studies reported in exercise science, health, physical education, and recreation.

KIN 752**Selected Application of Statistical Techniques II 3 credits**

Statistical analysis techniques including correlation and regression, anova, multivariate analysis, anova for repeated measures designs. Introduction to selected statistical software packages; computer-aided graphics and data presentation techniques.

KIN 760**Motor Learning 3 credits**

Advanced studies in motor behavior. Discussions of basic concepts and current perspectives.

KIN 761**Human Motor Control 3 credits**

Advanced studies in motor control, including sensory and central contributions to movement control, coordination, balance, and attention.

KIN 762**Motor Learning Applications 3 credits**

Designed to explain basic concepts of motor learning involved in organizing and scheduling practice for efficient learning/teaching of motor skills. Includes discussions of memory, feedback, stages of learning, and other motor learning principles.

KIN 791**Independent Study in Biomechanics 1–3 credits**

Independent study of a selected topic in biomechanics. May be repeated to a maximum of six credits. A maximum of six hours of independent study accumulated in KIN 790–795 may be counted towards a master's degree.

KIN 792**Independent Study in Measurement and Evaluation 1–3 credits**

Independent study of a selected topic in measurement and evaluation. May be repeated to a maximum of six credits. A maximum of six hours of independent study accumulated in KIN 790–795 may be counted towards a master's degree.

KIN 793**Independent Study in Motor Behavior 1–3 credits**

Independent study of a selected topic in motor behavior. May be repeated to a maximum of six credits. A maximum of six hours of independent study accumulated in KIN 790–795 may be counted towards a master's degree.

KIN 795**Independent Study in Sports Injury Management 1–3 credits**

Independent study of a selected topic in sports injury management. May be repeated to a maximum of six credits. A maximum of six hours of independent study accumulated in KIN 790–795 may be counted towards a master's degree.