Health Sciences

HSC 777 **3 credits**
Advanced Applied Statistics for the Health Sciences
Application of advanced statistical procedures to the investigation of research problems in the health science professions. Emphasis on a conceptual understanding of selected advanced statistical techniques with application to the investigation and analysis of problems in the health sciences area. Prerequisites: Introductory course in statistics and introduction to research methodology course or consent of instructor.

Kinesiology

Chair
Mercer, John (1999), Associate Professor; B.S., Buffalo State College of New York; M.S., University of North Texas; Ph.D., University of Oregon.

Graduate Coordinator
Young, John C. (1991), Professor; B.S.Ed., M.S., University of Michigan; Ph.D., University of Wisconsin, Madison.

Graduate Admissions Coordinator
Wulf, Gabriele (2001), Professor; Diplom, Ph.D., Deutsche Sporthochschule Koln; Ph.D., University of Munich.

Graduate Faculty
Golding, Lawrence A. (1976), Distinguished Professor; B.S., M.S., Ph.D., University of Illinois.

Guadagnoli, Mark A. (1991), Professor; B.S., M.S., Texas A&M University; Ph.D., Auburn University.

Holcomb, William R. (2001), Associate Professor; B.S. Berry College; M.S. U.S. Sports Academy; Ph.D. Auburn University.

Mangus, Brent C. (1985), Associate Professor; B.S., Utah State University; M.S., University of Oregon; Ed.D., University of Utah.

Massengale, John D. (1986), Professor; B.S., Northwest Missouri State University; M.S., Illinois State University; Ed.D., University of New Mexico.

Rubley, Mack (2001), Assistant Professor; B.S., University of Colorado; M.S., University of Pennsylvania; Ph.D., Brigham Young University.

Tandy, Richard D. (1989), Associate Professor; B.S., Appalachian State University; M.S., Ph.D., Texas A&M University.

Kinesiology is the study of human movement as it relates to human performance. The graduate degrees offered by the Department of Kinesiology are designed to prepare students for advanced study in biomedical sciences, clinical positions, and leadership positions in instituting physical fitness programs in public and private organizations. The department is committed to an interdisciplinary approach to professional preparation and scholarship and to creating an environment in which both basic and applied research in the field of kinesiology is stimulated. Comprehensive laboratories have been developed for the study of human performance, injury rehabilitation, and skill acquisition.

Students are afforded the opportunity to work closely with faculty in all areas of academics and research. The faculty are recognized internationally through their scholarship and research and are enthusiastically committed to graduate education.

The Department of Kinesiology offers programs of study that lead to a Master of Science degree in Exercise Physiology or Kinesiology. These degree programs allow students a choice of preparation and opportunities to specialize in biomechanics, exercise physiology, motor learning/motor control and sports medicine. The goal of the graduate program in kinesiology is to provide students with the theory, knowledge, and skills necessary to apply the principles of human movement in a variety of community, research, clinical, or athletic settings, or to pursue advanced study at the doctoral level.

Admission Requirements

Students are admitted in the fall, spring, and summer semesters. Applicants for admission must have an undergraduate major in kinesiology, exercise science, physical education, athletic training, biology, nutrition, or a related academic discipline.

Applicants must have a minimum overall undergraduate grade point average of 2.75 (A=4.0), or 3.00 (A=4.0) in the last two years. The Graduate Record Examination must be taken prior to applying. Successful applicants generally have a 3.00 undergraduate grade point average and a combined score of 1000 on verbal and quantitative sections of the GRE and higher than 3.5 on the analytical section

Interested applicants must send the following information to the Graduate College:

1. A completed application for graduate studies.
2. Official transcripts of all colleges and universities attended.

Interested applicants must send the following information to the Department of Kinesiology:

1. Copies of all transcripts sent to the Graduate College.
2. Official GRE scores.
3. A letter of intent that addresses: Reason(s) for wishing to earn an advanced degree. Motivation for attending UNLV. Summary of educational goals. Summary of research activities and interests. Possible faculty mentors.
4. Two letters of recommendation from persons familiar with the applicant's academic record and potential for graduate study.

Master of Science in Exercise Physiology

The Master of Science in Exercise Physiology is designed to provide the student with an understanding of the physiological effects of exercise on the human body. The program also emphasizes the effect of regular exercise on adults and offers students experience in administering, measuring, and conducting adult fitness programs such as those offered in the YMCA or corporate setting, to help conduct based post-coronary exercise program, to conduct physical fitness evaluations, and to assist in conducting exercise testing. In addition, the graduate is prepared for entrance into a doctoral program in exercise physiology.

The program emphasizes academic preparation in exercise physiology, laboratory experience, exercise leadership experience, knowledge of research methodology, and statistics. Students work in the Exercise Physiology Laboratory and may also choose to work in the experimental adult fitness class. Students must complete a thesis in the general area of exercise physiology.

Degree Requirements

The Master of Science in Exercise Physiology requires a minimum of 33 credit hours. The curriculum for the M.S. in Exercise Physiology consists of the following courses:

Core Courses

KIN 738	Human Physiology	3 cr
KIN 739	Evaluation of Physical Working Capacity	3 cr
KIN 740	Advanced Exercise Physiology	3 cr
KIN 745	Human Energy Metabolism	3 cr

Research Tools

KIN 741		
or 742	Independent Study in Exercise Physiology	3 cr
KIN 751	Selected Applications of Statistical Techniques I	3 cr
KIN 750	Research Methods	3 cr
KIN 749	Thesis	6 cr
Electives		6 cr

Master of Science in Kinesiology

The Master of Science in Kinesiology is designed for students interested in the study of human motor performance. Students are provided with the theoretical foundations of the movement-based sciences and select an emphasis in biomechanics, motor learning, motor learning/control, or sports medicine. Through involvement in directed research projects, students obtain an in-depth understanding of laboratory equipment research and applications in the biomedical sciences. Graduates are prepared to make applications of the movement sciences in research, clinical or athletic settings and for entrance into doctoral programs in kinesiology.

Degree Requirements

The Master of Science in Kinesiology requires a minimum of 33 credit hours. The curriculum for the M.S. in Kinesiology consists of the following:

Core Courses (9 credits)

Students must complete one course from each of three areas: biomechanics, motor learning/motor control, exercise physiology.

Research Tools (6 credits)

KIN 750	Research Methods	3 cr
KIN 751	Selected Applications of Statistical Techniques I	3 cr

Specialization (9 credits)

Research opportunities and course work are available in biomechanics, motor learning/motor control, and sports medicine. The individual student's program will be developed in consultation with the student's advisor.

Thesis Option (9 credits)

Students electing to complete a thesis must complete KIN 749 and three credits of electives in consultation with their advisor.

Non-Thesis Option (9 credits)

Students electing this option must complete KIN 748 and select six credits of electives

Kinesiology

KIN 700 **1-6 credits**
Special Problems in Kinesiology
Specialized instruction and/or research designed to develop depth in understanding a current kinesiology problem. May be repeated to a maximum of six credits. Prerequisite: Consent of instructor.

KIN 730 **3 credits**
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.

KIN 731 **3 credits**
Orthopedic Assessment in Sports Medicine
Theory and methods of orthopedic assessment as they relate to the understanding, evaluation, treatment, and rehabilitation of sport injuries. Emphasis on advanced understanding of the theoretical applications of advanced assessment techniques for orthopedic injuries. Prerequisites: Consent of instructor.

KIN 733 **3 credits**
Psychological Aspects of Sport and Rehabilitation
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 **3 credits**
Therapeutic Intervention in Sports Medicine
Theoretical background in the application of therapeutic intervention in a practical setting.

KIN 735 **3 credits**
Sports Medicine Rehabilitation Principles and Practices
Provides opportunity to study theory and techniques of various exercise rehabilitation processes and apply these processes on a case study basis. Prerequisites: Graduate standing and consent of instructor.

KIN 736 **3 credits**
Biomechanical Applications in Kinesiology
Provides opportunity to learn mechanical principles underlying human movement and apply these skills in a laboratory situation. Prerequisites: Graduate standing and consent of instructor.

KIN 737 **3 credits**
Biomechanics of Strength
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. Prerequisite: Graduate standing or consent of instructor.

KIN 738 **3 credits**
Human Physiology
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. Prerequisites: Consent of instructor, undergraduate course in anatomy and physiology.

KIN 739 **3 credits**
Evaluation of Physical Working Capacity
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. Prerequisite: Consent of instructor.

KIN 740 **3 credits**
Advanced Exercise Physiology
Lecture, discussion, and laboratory experiences dealing with impact of acute and chronic exercise on several systems. Selected topics such as nutrition and exercise, weight control, physical working capacity, and body composition. Prerequisite: KIN 739.

KIN 741 **3 credits**
Independent Study in Exercise Physiology I
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. Prerequisites: Advanced graduate standing in exercise physiology and consent of instructor.

KIN 742 **3 credits**
Independent Study in Exercise Physiology II
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. Prerequisite: KIN 741.

KIN 743 **3 credits**
Research Techniques in Biomechanics
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. Prerequisite: Graduate standing or consent of instructor.

KIN 744 **3 credits**
Thermoregulation During Physical Work
(Same as BIO 744.) Emphasizes physical mechanisms of heat transfer and their physiological control: relationship among body temperatures, sweat rate, exercise loads, environmental temperature, and heat stress. Prerequisites: KIN 739 and consent of instructor.

KIN 745 **3 credits**
Human Energy Metabolism
Study of the interactions between nutrition, energy metabolism, and physical exercise. Emphasis on how the body assimilates, stores, and makes available food energy to power muscular work. Prerequisite: KIN 739 or consent of instructor.

KIN 747 **1 credit**
Graduate Seminar
Oral presentations of proposed and completed research by graduate students, graduate faculty, and guests. May be taken for credit to a maximum of four credits.

KIN 748 **1-6 credits**
Professional Paper
May be repeated but only two credits will be applied to the student's program. S/F grading only.

KIN 749 **3-6 credits**
Thesis
May be repeated but only six credits will be applied to the student's program. S/F grading only.

KIN 750 **3 credits**
Research Methods
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 **3 credits**
Selected Application of Statistical Techniques I
Introduction to descriptive and inferential statistical procedures utilized in studies reported in exercise science, health, physical education, and recreation. Prerequisite: KIN 750.

KIN 752 **3 credits**
Selected Application of Statistical Techniques II
Statistical analysis techniques including correlation and regression, anova, multivariate analysis, manova for repeated measures designs. Introduction to selected statistical software packages; computer-aided graphics and data presentation techniques. Prerequisite: KIN 751 or consent of instructor.

KIN 760 **3 credits**
Motor Learning
Advanced studies in motor behavior. Discussions of basic concepts and current perspectives. Focus is on training methods that enhance the learning process. Prerequisite: Consent of instructor.

KIN 761 **3 credits**
Human Motor Control
Advanced studies in motor control, including sensory and central contributions to movement control, coordination, balance, and attention.

KIN 762 **3 credits**
Motor Learning Applications
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 **1-3 credits**
Independent Study in Biomechanics
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. Prerequisite: Consent of instructor.

KIN 792 **1-3 credits**
Independent Study in Measurement & Evaluation
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. Prerequisite: Consent of instructor.

KIN 793 **1-3 credits**
Independent Study in Motor Behavior
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 toward a master's degree. Prerequisite: Consent of instructor.

KIN 795 **1-3 credits**
Independent Study in Sports Injury Management
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. Prerequisite: Consent of instructor.

KIN 796 **2 credits**
Supervised Practice: Community Nutrition
For Students accepted into the Department of Nutrition Sciences Dietetic Internship. Students gain intensive experiences covering all aspects of community nutrition programming. Students will observe the diversity within community nutrition in terms of mission, target audience and programs and will actively participate in nutrition program development, implementation, evaluation, and marketing. Corequisites: KIN 797 and KIN 798.