Kinesiology (KINS)

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5099. Independent Study

Variable (1-6) credits. Prerequisite: Instructor consent. May be repeated for credit.

5100. Musculoskeletal Examination and Acute Treatment I

Four credits.

Introduces the common types of orthopedic injuries and/or dysfunctions that occur to the upper extremity during physical activity and/or athletics. Injuries will be discussed from the following viewpoints: etiology and mechanism of injury; pathology; recognition and evaluation techniques; protocols; and prevention. Students will also learn to apply the techniques of orthopedic injury assessment and evaluation as well as the immediate care of those injuries.

5101. Musculoskeletal Examination and Acute Treatment II

Four credits. Prerequisite: Must complete KINS 5100 with a "C" or better.

Introduces students to the common types of orthopedic injuries and/or dysfunctions that occur to the lower extremity during physical activity and/or athletics. Injuries will be discussed from the following viewpoints: etiology and mechanism of injury; pathology; recognition and evaluation techniques; protocols; and prevention. Students will also learn to apply the techniques of orthopedic injury assessment and evaluation as well as the immediate care of those injuries.

5102. Therapeutic Interventions in Athletic Training I

Four credits. Prerequisite: KINS 3120 and 3130.

An integrated approach to the treatment and rehabilitation of athletic injuries and conditions. Discusses the physiology and phases of healing with regards to specific types of tissue, various tissue responses to different types of training modalities, the theory behind common treatment modalities, and rehabilitation paradigms. Students will take an active role in learning to plan, implement, document, and evaluate the efficacy of therapeutic interventions in the treatment of physically active people with musculoskeletal injuries.

5103. Therapeutic Interventions in Athletic Training II

Two credits.

Prepares students to apply an integrated approach to the treatment and rehabilitation of athletic injuries and conditions. Students will take an active role in learning to plan, implement, document, and evaluate the efficacy of therapeutic interventions in the treatment of injured physically active people.

5105. Clinical Epidemiology in Athletic Training

Three credits.

Athletic training students will be instructed in the use of proper medical documentation through lecture and class discussion. This course will provide the student with the knowledge of medical terminology and abbreviations necessary to communicate with physicians and other healthcare professionals. Students will develop an understanding of evidence-based medicine, health related quality of life and outcome assessments.

5106. Emergency Procedures in Athletic Training

Four Credits. Prerequisite: Must possess CPR, AED, and first aid certification.

Evaluation and treatment skills for athletic injuries to the head, face, neck, trunk, thorax, abdomen, and those caused by the environment. Acute first-aid considerations in life-threatening situations will also be covered in-depth.

5107. Orthopedic Assessment and Treatment of the Spine

Three credits.

Covers anatomy, evaluation, pathology of spinal injuries and conditions, diagnosis, and management of injuries related to the spine, thorax, and core.

5108. Research Design and Implementation in Athletic Training

Four credits.

Acquaint students of athletic training with recent research in the field, components of conducting and publishing research in athletic training, and preparation for research endeavors at the graduate level. Relevant issues/policies/laws related to athletic training that are currently being debated, discussed, and/or implemented and the local and national level are discussed.

5109. General Medical Aspects in Athletic Training

Four credits.

Prepares the athletic training student to recognize, evaluate, and manage common general medical conditions that may affect physically active individuals. Conditions that affect all of the major body systems will be discussed. Information regarding the relationship between nutrition and physical fitness for the purpose of developing individualized nutrition plans for physical fitness and general well-being will be provided.

5110. Leadership, Administration, and Professional Development in Athletic Training

Three credits.

Concepts for students majoring in athletic training regarding professional development and healthcare administration and organization. Topics related to personnel management, leadership, daily operations, finance, facility design, information management, workshop development, interviewing skills, ethics and ethical decision-making, organizational structure, work-place culture, among other topics that pertain to the profession of athletic training will be discussed.

5111. Practical Applications of Injury Assessment and Care

Two credits.

Provides students an opportunity to solidify, improve upon and refine assessment skills, treatment plans and rehabilitation prescription. Students' ability to provide proper documentation utilizing a written SOAP note, including differential diagnoses as well as immediate treatment and short and long-term rehabilitation plans will be assessed throughout the semester.

5112. Counseling Strategies and Psychology of Athletic Injury

Three credits.

Prepares students to recognize clients/patients exhibiting abnormal social, emotional, and mental behaviors. Coupled with recognition is the ability to intervene and refer these individuals as necessary. Students learn to appreciate the role of mental health in injury and recovery and use interventions to optimize the connection between mental health and restoration of participation.

5113. Principles of Neuromuscular Conditioning and Sport Performance

Three credits.

Prepares the entry-level athletic trainer to be versed in strength and conditioning principles and exercise as a means to help prevent and rehabilitate musculoskeletal injuries. The physiology behind muscle and bone development related to exercise and strength training and designing targeted strength training programs to treat abnormalities after injury and to optimize performance will be discussed.

5200. Athletic Training Clinical Rotation I

Two credits.

Students work directly with a certified athletic trainer serving as the clinical preceptor and are assigned to a specific athletic training practice setting. This experience involves providing day-to-day care for the participants, as well as administering treatments and rehabilitation under the supervision of the clinical preceptor. Students will be expected to be immersed daily into the role of the athletic trainer.

5201. Athletic Training Experience I

Two credits.

In this practicum experience the student works directly with a certified athletic trainer and is assigned to a specific athletic training practice setting. It involves providing day-to-day care for the participants, as well as administering treatments and rehabilitation under supervision of the preceptor.

5202. Athletic Training Clinical Experience III

Two credits.

Students work directly with a certified athletic trainer and are assigned to a specific athletic training practice setting. Involves providing day-to-day care for the participants, as well as administering treatments and rehabilitation under supervision of the preceptor. Students will be expected to be immersed daily into the role of the athletic trainer.

5203. Athletic Training Clinical Experience IV

Four credits.

Students work directly with a certified athletic trainer and are assigned to a specific athletic training practice setting. Involves providing day-to-day care for the participants, as well as administering treatments and rehabilitation under supervision of the certified trainer. Students will be expected to be immersed daily into the role of the athletic trainer.

5204. Athletic Training Clinical Experience V

Three credits.

Students work directly with a certified athletic trainer and are assigned to a specific athletic training practice setting. Involves providing day-to-day care for the participants, as well as administering treatments and rehabilitation under supervision of the preceptor. Students will be expected to be immersed daily into the role of the athletic trainer.

5205. Culminating Athletic Training Clinical Experience

Six credits.

Students work directly with a certified athletic trainer and are assigned to a specific athletic training practice setting. Involves providing day-to-day care for the participants, as well as administering treatments and rehabilitation under supervision of the preceptor. Students will be expected to be immersed daily into the role of the athletic trainer.

5208. Research Design and Implementation in Athletic Training

Four credits.

Acquaints students of athletic training with recent research in the field, components of conducting and publishing research in athletic training, and preparation for research endeavors at the graduate level. Covers relevant issues/policies/laws related to athletic training that are currently being debated, discussed, and/or implemented and the local and national level.

5488. Theory of Clinical Analysis

Three credits. Prerequisite: Instructor consent.

Provides an introduction to the principles and procedures of various tests performed in clinical chemistry. Presents the physiological basis, principle and procedures and the clinical significance of test results, including quality control and reference values. Emphasizes basic chemical laboratory technique, electrolytes, acid-base balance, proteins, carbohydrates, lipids, enzymes, endocrine function, TDM, toxicology, hematology, and coagulation.

5500. Research Techniques and Experimental Designs in Exercise Science

Three credits.

Gives an understanding of research designs and methods in exercise science when examining different research topics related to human, animal and cell culture models.

5507. Fundamentals of Exercise Prescription

Three credits. Prerequisite: Instructor consent. Recommended preparation: an undergraduate course in exercise prescription and/or exercise science/kinesiology.

An examination and application of the principles of exercise prescription in primary disease prevention. Students will advance their knowledge in the exercise pre-participation health screening and pre-exercise evaluation processes. Students will develop exercise prescriptions for healthy adults and adults with multiple cardiovascular disease risk factors and/or special considerations. Student will learn how to adjust an exercise prescription for clients taking common medications that affect the exercise response and learn behavioral strategies to improve exercise adherence.

5508. Exercise Prescription for Individuals with Chronic Diseases and Health Conditions

Three credits. Prerequisite: KINS 5507.

Taught online. An in-depth examination and application of the principles of exercise prescription for individuals living with chronic diseases and health conditions. Students will advance their knowledge in prescribing exercise for special populations that include groups with cancer, cardiovascular, pulmonary, metabolic, neuromuscular, and musculoskeletal diseases and conditions across the lifespan, among others.

5512. Preventing Sudden Death in Sport

Three credits. Prerequisite: Instructor consent.

Provides an in-depth examination of the causes of sudden death in the athletic/exercise environment. The most current evidence-based guidelines pertaining to the prevention, recognition, and treatment of these conditions will be explored and discussed.

5514. Legal Considerations of Sudden Death in Sport--Issues for Medical Staff and Athletic Administrators

Three credits.

A seminar for Kinesiology graduate students using formal instruction regarding legal aspects of sudden death in sport. Covers sport law concepts drawing upon the case law of recent incidents of sudden death in sport to explore the various criminal and civil legal ramifications that arise when preventable deaths occur in domain of organized sport and physical activity.

5515. Scientific Presentations

Three credits.

Skills required for writing scientific articles and abstracts, reviewing manuscripts, and presenting results at scientific meetings.

5530. Physiology of Stressful Environments

Three credits.

Exercising and resting responses/adaptations/illnesses to high altitude, cold, hyperbaric, polluted, and zero gravity environments. The acute and chronic effects of electromagnetic radiation fields and sleep deprivation will also be studied.

5533. Current Research and Issues in Athletic Training

Three credits. Prerequisite: Instructor consent.

Acquaints students of athletic training with the recent research in the field, the components of conducting and publishing research in this field, and preparation for research endeavors at the graduate level. Covers relevant issues, policies, and laws related to athletic training that are currently being regionally or nationally debated, discussed, and/or implemented.

5534. Advanced Clinical Care in Sports Medicine

Three credits.

A discussion/lecture-based class designed to explore advanced topics for graduate students in athletic training. Furthers students' knowledge and skills regarding "hot" topics within the athletic training profession.

5550. Children and Physical Activity

Three credits.

Overview of systems physiology for pediatric individuals. The impact of physical activity and chronic training will be evaluated.

5595. Special Topics in Exercise Prescription

Three credits. Prerequisite: KINS 5507.

Taught online. An in-depth examination and application of the principles of exercise prescription for healthy populations with special considerations, and unique circumstances under which people exercise related to both athletic and clinical populations. Students will advance their knowledge in prescribing exercise for healthy populations with special populations such as children and older adults, populations with unique considerations such as the spinal cord injured and amputee athletes, and unique exercise circumstances such as environmental considerations and wearable technologies, among others.

6094. Seminar

Variable (1-6) credits. May be repeated for a maximum of 12 credits.

Cooperative study of developments and problems in the student's area of specialization.

6100. Data Analysis and Reporting in Kinesiology

Three credits.

Analyzes data and critically appraises research literature using a broad variety of methods applicable to laboratory and clinical research. Students will gain experience using software to analyze data germane to exercise kinesiology and report results in a manner consistent with leading journals in the field. Knowledge of basic statistical principles is assumed.

6102. Concepts and Principles of Clinical and Classroom Teaching in Athletic Training

Three credits.

Lecture and discussion-based course provides the athletic trainer with formal instruction regarding clinical supervision and teaching. Covers both effective strategies and techniques for success in the classroom as well as in the clinical education setting.

6103. Employment Concepts and Issues in Athletic Training

Three credits. Prerequisite: Instructor consent.

Lectures and discussions to cover topics related to workplace structure, organizational culture, professional socialization and professional development.

6106. Qualitative Research Methods

Three credits. Prerequisite: Instructor consent.

The role of qualitative research in healthcare and exercise science. Examines major approaches used in conducting qualitative research and the application of these methods to problems and phenomena in healthcare and athletic training. Emphasizes the developmental process prior to collection, collection, management, analysis, and interpretation of qualitative data. Exploration and application of topics such as sampling, interviewing and observation techniques, data analysis methods, and reporting of qualitative research. Examines evaluation and critique of research studies utilizing qualitative methods.

6320. Advanced Sport Sociology

Three credits.

Advanced topics in sport sociology and sport psychology with special emphasis on those models and theoretical perspectives that are associated with generating significant research in the area.

6425. Special Topics in Health and Wellness Across the Lifespan

Three credits. Prerequisite: Instructor consent.

An in-depth examination of health issues across the lifespan. Perspectives from social and behavioral health science, occupational and environmental health science, and/or public health policy.

6450. Exercise Endocrinology

Three credits.

Overview of cellular endocrinology with a focus on the impact of acute and chronic exercise on these systems.

6500. Exertional Heat Stroke

Three credits. Prerequisite: Instructor consent.

An in-depth examination of pathophysiology, prevention, recognition, treatment, and return to play considerations for exertional heat stroke, with a secondary emphasis on all exertional heat illnesses.

6512. Advanced Resistance Training Physiology

Three credits.

Provides students with an in-depth overview of the physiological mechanisms mediating the different exercise prescriptions in resistance training.

6520. Thermal Physiology

Three credits.

Detrimental effects which exercise in the heat and dehydration have on: cardiovascular function, strength, endurance, fluid-electrolyte balance, disposition, and heat tolerance.

6525. Muscle Physiology in Exercise and Sport

Three credits.

Structural, morphological and biochemical changes in muscle with exercise and training.

6530. Repair of Musculoskeletal Tissue

Three credits.

Fundamental processes necessary for the understanding of our physiologic response to injury stress, healing and recovery. Intended for graduate students in the Department of Kinesiology. The scope of physiologic discussion will span from cell to organism. Discussion will center on systemic and tissue specific responses to injury. Some prior exposure to organ level physiology, endocrinology, and cell biology is recommended.

6535. Neuromuscular Function and Effects of Injury

Three credits.

The structural and neural properties of skeletal muscle and the response to injury will be examined.

6550. Body Weight Regulation and Exercise

Three credits.

Factors impacting body weight, including neuroendocrine control of metabolism and body weight. The role of physical activity in the maintenance of body weight is also considered.