APPLIED PHYSIOLOGY AND KINESIOLOGY

Course Search

Not all courses are offered every semester. Refer to the schedule of courses for each term's specific offerings.

Courses

APK 2100C Applied Human Anatomy with Laboratory 4 Credits
Study of general anatomy of the human body from a systematic approach. Understanding anatomical terminology, gross structures, and locations of different body structures are primary concerns. Cells, tissues and organs of the integumentary, skeletal, muscular, nervous, circulatory, respiratory, digestive, urinary and reproductive systems are emphasized. (B)
General Education - Biological Science

APK 2105C Applied Human Physiology with Laboratory 4 Credits
Introduces body functions at the cellular, tissue, organ and systems level with emphasis on the mechanisms of operation. Designed for students interested in pursuing study in the health professions. (B)
General Education - Biological Science

APK 3110C Physiology of Exercise and Training 3 Credits
Survey in exercise physiology which provides an overview of the acute and chronic responses to exercise. Particular attention is placed on understanding muscle bioenergetics and metabolism as well as the cardiopulmonary responses to exercise. Special topics include exercise testing, training technologies and exercise in hot and cold environments.
Prereq: APK 2105C with minimum grade of C; junior standing or above; HH-APK and HH-AT majors only

APK 3113 Principles of Strength and Conditioning 3 Credits
For individuals who are interested in becoming certified personal trainers (NSCA-PT) or certified strength and conditioning specialists (CSCS) through the National Strength and Conditioning Association.
Prereq: APK 2100C and APK 2105C with minimum grades of C

APK 3163 Sport Nutrition 3 Credits
Addresses the aspects of nutrition that are related to exercise performance. Emphasis is on bioenergetic systems, nutrient components, nutritional and body composition assessments, ergogenic aids and diet modifications for physically active individuals and athletes.
Prereq: HUN 2201 and APK 2105

APK 3200 Motor Learning 3 Credits
Provides background for understanding, analyzing and teaching skills in sports and dance. Attention to specific aspects of psychomotor developments and theoretical models of skill acquisition.
Prereq: junior standing or above; majors only

APK 3220C Biomechanical Basis of Movement 3 Credits
Prereq: junior or senior standing; APK 2100C and MAC 1140 with minimum grades of C; or PHY 2048 or PHY 2053 with minimum grade of C

APK 3400 Introduction to Sport Psychology 3 Credits
Provides an understanding of the science and practice of sport psychology from both a theoretical and applied perspective. The primary emphasis is on the educational and performance enhancement roles of the field with little discussion of clinical issues.
Prereq: junior or senior standing

APK 3405 Exercise Psychology 3 Credits
Introduces exercise psychology. Topics include the effects of exercise on psychological well-being, exercise adherence and intervention from both theoretical and applied perspectives.

APK 4050 Research Methods 3 Credits
Provides an understanding of basic research methods and techniques used in applied physiology and kinesiology. Students will demonstrate their knowledge of the course materials by analyzing, interpreting and summarizing research writing in professional journals and by planning a research study.
Prereq: APK major with 3, 4, 6 or 7 classification

APK 4103C Kinetic Anatomy 3 Credits
Provides in-depth coverage of musculoskeletal anatomy as a foundation for learning components of simple and complex motor tasks; emphasizes proper execution and analysis of joint movement and common exercises.
Prereq: APK 2100C and APK 3220C

APK 4112 Advanced Exercise Physiology 3 Credits
Provides a detailed understanding of acute and chronic responses to exercise. Particular attention is placed upon understanding the physiological responses to exercise at both a systems and cellular level. Emphasis is placed on muscle contractile properties, muscle bioenergetics and the endocrine responses to exercise.
Prereq: APK 3110C with minimum grade of C

APK 4115 Neuromuscular Aspects of Exercise 3 Credits
Provides an in-depth analysis of muscle structure and function; how muscles produce movement; adaptation of muscle to resistance training, endurance training and various manipulations used in rehabilitation; adaptation of muscle to disuse; and muscle responses to injury.
Prereq: APK 3110C with minimum grade of C

APK 4120 Clinical Exercise Physiology 3 Credits
Provides an understanding of recent advances in exercise physiology and exercise prescription for clinical populations. Particular attention is placed upon the study of acute and chronic responses to exercise in patients with cardiac, pulmonary, metabolic and musculoskeletal diseases.
Prereq: APK 3110C with minimum grade of C

APK 4125C Physical Fitness Assessment and Exercise Prescription 3 Credits
Techniques of assessing physical fitness using traditional and state of the art processes. Techniques of prescribing exercise programs based upon assessments of physical parameters. Supervised practical lab experiences in assessment and prescription in a clinical setting.
Prereq: APK 3110C with minimum grade of C; majors in this college only
APK 4144 Movement Neuroscience 3 Credits
Covers both anatomical and physiological aspects of movement-related components of the nervous system from a functional perspective. Topics include: neuronal signaling; somatosensation; proprioception; nociception; vision and eye movements; audition; lower vs. upper motor neurons; cortical, basal ganglia and cerebellar regulation of movement; and posture.
Prereq: APK 2100C and APK 2105C with minimum grades of C; sophomore standing or above; majors only

APK 4912 Undergraduate Research 5 Credits
Provides APK students the opportunity for involvement in supervised research experiences. "Research" is operationally defined here as mentored, but self-directed work that enables students to explore an issue of interest to them and to communicate the results to others. (S-U)

APK 4940C Internship 12 Credits
Internship in applied physiology and kinesiology. (S-U)
Prereq: department permission

APK 4943 Teaching Experience in APK 1 Credit
Experience teaching as an undergraduate assistant; responsibilities meet the needs of the particular course and instructor, including, but not limited to, giving short lectures, holding study/discussion sections, grading, and helping with exam/quiz/assignment preparation and proctoring. (S-U)
Prereq: instructor permission

ATR 2010C Prevention and Care of Athletic Injuries 3 Credits
Prevention of athletic injuries, including protective equipment, safe facilities and proper supervision of practice and contests. Recognition, referral and follow-up of injuries in athletics. Legal implications of athletic training.
Prereq: APK 2100C and majors only

ATR 3102 Principles of Athletic Training 4 Credits
Provides the student with knowledge of basic principles of athletic training, including prevention, recognition and treatment of athletic injuries. Addresses the proper application of protective equipment, bracing/wrapping/taping techniques utilized by athletic trainers and introduces emergency management skills appropriate for sport.
Prereq: admission to the athletic training specialization

ATR 4112C Emergency Management of Athletic Trauma 3 Credits
Students will learn to recognize, assess, treat and refer traumatic injury and acute emergent illness.
Prereq: majors only

ATR 4212C Athletic Injury Assessment: Upper Extremity 4 Credits
Provides background information to conduct a thorough initial evaluation of upper extremity injuries commonly sustained by the physically active population.
Prereq: ATR 3102 with minimum grade of C and admission to the athletic training specialization

ATR 4213C Athlete Injury Assessment: Lower Extremity 4 Credits
Provides background information to conduct a thorough initial evaluation of lower extremity injuries commonly sustained by the physically active population.
Prereq: ATR 4212C with minimum grade of C

ATR 4302C Therapeutic Modalities in Athletic Training 4 Credits
Introduces physiological principles, concepts and operational procedures of contemporary therapeutic modalities as they relate to the care and treatment of athletic injuries.
Prereq: ATR 3102 with minimum grade of C and admission to the athletic training specialization

ATR 4314C Rehabilitation Techniques in Athletic Training 4 Credits
Introduces the concepts and principles of a comprehensive rehabilitation program including determination of therapeutic goals and objectives, selection of therapeutic exercises, methods of evaluating and recording rehabilitation progress, development of criteria for progress and return to competition and the physiological effects of trauma/wound healing and inactivity/immobilization.
Prereq: ATR 4302C with minimum grade of C

ATR 4315 Functional Sport Conditioning 3 Credits
Enhances knowledge in design and implementation of functional exercise techniques as it relates to injury rehabilitation. Nutritional considerations for the injured athlete and proper design of the pre and post event meal planning for optimal performance and recovery are also covered.
Prereq: ATR 4314C

ATR 4432 Clinical Pathology and Pharmacology 3 Credits
Provides a thorough understanding of injury, illness and/or disease of various body systems; addresses specific understanding of medical diagnostics, interventions (including pharmacology) and participation considerations for the athletic population.
Prereq: ATR 4822 with minimum grade of C

ATR 4512 Athletic Training Administration 3 Credits
In-depth background of the standards, policies and practices of organization, supervision and administration of athletic training programs.
Prereq: ATR 4832 with minimum grade of C; athletic training seniors only

ATR 4812 Athletic Training Clinical Experience 1 4 Credits
Provides the student with the opportunity necessary to grow both clinically and professionally within the field of athletic training through attendance at seminars, and the integration and synthesis of cognitive and psychomotor skills learned in previous semesters.
Prereq: ATR 3102 with minimum grade of C and admission to the athletic training specialization

ATR 4822 Athletic Training Clinical Experience 2 4 Credits
Provides the student with the opportunity necessary to grow both clinically and professionally within the field of athletic training through attendance at seminars, and the integration and synthesis of cognitive and psychomotor skills learned in previous semesters.
Prereq: ATR 4812 with minimum grade of C

ATR 4832 Athletic Training Clinical Experience 3 4 Credits
Provides the student with the opportunity necessary to grow both clinically and professionally within the field of athletic training through attendance at seminars, and the integration and synthesis of cognitive and psychomotor skills learned in previous semesters.
Prereq: ATR 4822 with minimum grade of C

ATR 4842 Athletic Training Clinical Experience 4 4 Credits
Provides the student with the opportunity necessary to grow both clinically and professionally within the field of athletic training through attendance at seminars, and the integration and synthesis of cognitive and psychomotor skills learned in previous semesters.
Prereq: ATR 4832 with minimum grade of C

BSC 3096 Human Physiology 3 Credits
The functioning of human tissues, organs and organ systems, emphasizing the physical, chemical and mechanistic bases of normal physiology and the integrated function of the human body. Also introduces pathophysiological changes associated with human diseases.
Prereq: CHM 1031, CHM 2046, or CHM 2047 and BSC 2011

HLP 4933 Variable International Topics 1-6 Credits
Provides the opportunity to study in a wide range of cultural settings.
PET 4905C Variable Topics in Exercise and Sport Sciences  1-5 Credits
Offered upon request to meet students’ special interests that are not adequately provided in other courses.
Prereq: department chair permission

PET 4948C Practicum in Exercise and Sport Sciences  1-5 Credits
Practical experience in such specialty areas as adult fitness programs, health clubs, exercise testing laboratories, clinical laboratories and athletic training rooms. May include senior thesis with oral defense.
Prereq: department chair permission

SPM 4154 Administration of Sport and Physical Activity  3 Credits
Managerial principles and techniques applicable to a variety of sport, physical education and fitness settings.
Prereq: MAN 3025 and SPM 2000 with minimum grades of C