

KNES - KINESIOLOGY

KNES401 Zip Code: Prediction of Physical Activity & Health (3 Credits)

An exploration of the relationship and impacts of built and other social environments on health, including physical activity, social equity, gentrification, and many others.

Prerequisite: Minimum grade of C- in SPHL100.

Restriction: Must have earned a minimum of 90 credits; and must be in a major within, SPHL-Kinesiology department.

KNES402 Biomechanics of Sport (3 Credits)

Mechanical determinants influencing sport techniques. A quantitative, scientific basis for sport analysis with emphasis on the application to numerous sport activities. Evaluation and quantification of the filmed performance of athletes.

Prerequisite: Minimum grade of C- in KNES300.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 90 credits.

KNES405 Principles & Techniques of Manual Muscle Testing (3 Credits)

It is critical for sports medicine and sport performance specialists to understand the location and inter-relationships of the structures of the body that impact human movement. Thus, the primary purpose of this course is to facilitate an in-depth, understanding of the muscles of the body. Specifically, students will learn the origins, insertions, primary and secondary functions, as well as nervous innervations of the major muscle groups of the body. In addition, students will develop palpation skills and learn to grade the function of each muscle through manual muscle testing techniques. These skills form the foundation for assessing functional movement as well as performing safe and effective manual therapy techniques. Thus, while the focus of the class will be to develop sound, introductory palpation and manual muscle testing skills, basic principles of functional movement and manual therapy will also be addressed through hands-on application as well as case study.

Prerequisite: Minimum grade of C- in BSCI201 and BSCI202; and 1 course with a minimum grade of C- from Kinesiology core courses at the 300-level or higher.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 90 credits.

KNES406 Clinical Biomechanics: Musculoskeletal Injury (3 Credits)

An in-depth analysis of the biomechanical foundations underlying musculoskeletal injury. Emphasis is placed on the biomechanical mechanisms responsible for injury causation, the resultant effects on musculoskeletal tissues, and the current scientific understanding of strategies for injury prevention.

Prerequisite: Minimum grade of C- in KNES300.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 75 credits.

Credit Only Granted for: KNES406 or KNES498V.

Formerly: KNES498V.

KNES411 Black Bodies & Green Space: From 1619 to Today (3 Credits)

Nature-based physical activity, also known as green exercise, involves engaging in physical activity within natural environments like parks, forests, or other green spaces. But, access or a sense of belonging to these spaces has not and still is not equitable. This experiential course will take a historical look as to why that has been the case...From the enslaved African on antebellum plantations, who used the surrounding uncultivated land as a place of deliverance, healing and route to freedom, to the Central Park bird watcher, whose green space presence was perceived as a threat to White physical safety, we will critically examine how systemic racism shaped the experience, connection, and relationship to nature among Black Americans.

Prerequisite: Minimum grade of C- in KNES285.

Restriction: Must have earned a minimum of 75 credits.

Credit Only Granted for: HNUH218Y or KNES411.

Formerly: HNUH218Y.

KNES440 Psychology of Athletic Performance (3 Credits)

Examines the psychological factors, mechanisms, and processes in athletic performance. Utilizes a social psychological approach to focus on the study and review of individual performance in both the interpersonal and social context.

Prerequisite: Minimum grade of C- in KNES350.

Restriction: Must have earned a minimum of 90 credits.

KNES441 The Kinesiological and Scientific Basis of Human Movement and Sport: Golf (3 Credits)

The course introduces the student to the study of human movement (i.e., kinesiology) and sport through the experience of learning a specific motor skill (i.e., golf). Emphasis in the course is on the theories and knowledges underlying the learning and performance of all motor and sport skills. In short, this is a course about the science of motor behavior and skills. Through active and personal learning experiences, students will be encouraged to develop critical and creative thinking skills about human motor behavior.

Prerequisite: Minimum grade of C- in KNES350; and minimum grade of C- in KNES370.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 90 credits.

Credit Only Granted for: KNES441 or KNES498A.

Formerly: KNES498A.

KNES442 Psychology of Exercise and Health (3 Credits)

Examines the antecedents and consequences of exercise behavior. Explores motivation, attitude, control, socialization. Proposes intervention strategies at the individual, organizational and societal levels.

Prerequisite: Minimum grade of C- in KNES350.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 90 credits.

KNES445 Exercise and Brain Health (3 Credits)

Examines the evidence for exercise to affect brain function and brain health in children, in adults, and in old age. Covers the adaptations to acute and chronic exercise within brain networks related to emotion, stress reactivity, memory, and executive function, and the effectiveness of physical activity and exercise as treatments for depression, anxiety disorders, and cognitive impairment.

Prerequisite: Minimum grade of C- in KNES350.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 90 credits.

KNES450 From the Olympics to the Rehabilitation Clinic: Mental Skills Training Applications (3 Credits)

The examination and application of the major concepts of human performance psychology in, and beyond, the professional, collegiate, amateur and youth sport athletic spaces to allied health practitioner (PT, OT, OR, PA, RN), athletic and personal training, and tactical athlete (i.e., military, law enforcement, and firefighting) environments. An essential component of the class will be the reliance on reading and reviewing both classic articles and the recent evidence-based research in which applied strategies and techniques are based. Students will be taught to critically analyze the research by 1) understanding the purpose of the research, 2) identifying the experimental design and how it contrasts the difference between experimental and control conditions, 3) understanding the outcome of the research, and 4) understanding how the outcome of the research may be applicable to the human performance and allied health environments.

Prerequisite: Minimum grade of C- in KNES350.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 90 credits.

Credit Only Granted for: KNES498G or KNES450.

Formerly: KNES498G.

KNES451 Children and Sport: A Psychosocial Perspective (3 Credits)

Examination of youth sports from a psychosocial perspective, including the impact of highly structured sports on young athletes and the complex social network of coaches, parents and peers.

Prerequisite: Minimum grade of C- in KNES350.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 90 credits.

KNES457 Managing Youth Programs: Educational, Fitness and Sport (3 Credits)

An examination of the basic functions involved in managing physical education, fitness, and youth sports programs. Focus on leadership skills, organizational management, and techniques for applying learned skills in a variety of organizational settings that serve the nation's youth.

Prerequisite: Minimum grade of C- in KNES350 and KNES370.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 90 credits.

KNES460 Physiology of Aging and the Impact of Physical Activity (3 Credits)

Biology of the aging process in healthy individuals and those with chronic disease, the effects of acute exercise and exercise training on the physiological decline that occurs in humans, and the role that regular physical activity plays on enhancing the quality of life and activities of daily living in individuals.

Prerequisite: 1 course with a minimum grade of C- from (KNES320, KNES360).

Restriction: Must be in one of the following programs (Kinesiology; Public Health Science); and must have earned a minimum of 90 credits.

KNES462 Neural Basis of Human Movement (3 Credits)

An introduction to the neural substrates which underlie postural and volitional movement. Neuroanatomical and neurophysiological basis of motor functioning; past and present conceptualizations of motor control and coordination; movement disorders; and maturation of the neuromuscular system. Students with career goals in allied health or medical fields will benefit from this overview of both the peripheral and the central nervous system, with a special focus on the control of motor behavior. Topics covered will range from neural signaling to sensory processing, to central control of movement, and to relevant 'higher' cognitive processes pertaining to movement execution and recovery.

Prerequisite: Minimum grade of C- in BSCI201, BSCI202, and KNES385; or permission of SPHL-Kinesiology department.

Restriction: Must have earned a minimum of 75 credits.

KNES463 Type 2 Diabetes and Physical Activity Seminar (3 Credits)

Students will examine and critically analyze the current research literature relevant to the diagnosis, prevalence, and impact of the current diabetes epidemic in the US. Students will also study the current state of knowledge relative to the use of physical activity to prevent and treat diabetes. This seminar format class is heavily based on student presentations, student participation, and student writing assignments.

Prerequisite: Minimum grade of C- in KNES360.

Restriction: Must be in the Kinesiology major; and must have earned at least 75 credits.

Credit Only Granted for: KNES498D or KNES463.

Formerly: KNES498D.

KNES464 Exercise Metabolism: Role in Health and Disease (3 Credits)

Examines the role of metabolism in kinesiology, especially as it relates to physical inactivity, health and disease. Includes bioenergetics, substrate utilization, cell signaling, and metabolic gene expression and their impact on chronic health conditions or disease.

Prerequisite: Minimum grade of C- in KNES360.

Restriction: Must have earned a minimum of 90 credits.

KNES465 Physical Activity and Disease Prevention and Treatment (3 Credits)

Critically examines the scientific evidence that supports the use of physical activity to prevent and treat age-related diseases, including cardiovascular disease, diabetes, abnormal lipoprotein-lipid levels, hypertension, obesity, osteoporosis and cancer.

Prerequisite: 1 course with a minimum grade of C- from (KNES320, KNES360).

Restriction: Must have earned a minimum of 90 credits.

KNES466 Graded Exercise Testing (3 Credits)

Functional and diagnostic examination of the cardiovascular responses to graded exercise testing. Emphasis on electrophysiology, mechanisms of arrhythmias, normal electrical activation of the heart, axis termination and the normal 12-lead electrocardiogram.

Prerequisite: Minimum grade of C- in KNES360.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 75 credits.

KNES467 Physical Activity & the Treatment & Prevention of Obesity (3 Credits)

Students will examine and critically analyze the current research literature relevant to the diagnosis, prevalence, and impact of the current obesity epidemic in the US. Students will also study the current state of knowledge relative to the use of physical activity to prevent and treat obesity. This seminar format class is heavily based on student presentations, student participation, and student writing assignments. The course is primarily based on presentations by the instructor and the students followed by in depth discussions of the implications of the data.

Prerequisite: Minimum grade of C- in KNES360.

Restriction: Must have earned a minimum of 75 credits.

Credit Only Granted for: KNES467 or KNES4980 .

Formerly: KNES4980.

KNES471 Assistive Technologies for Restoration of Human Motor Functions (3 Credits)

Presents the main assistive technologies and their applications for rehabilitation of individuals whose daily motor activities such as mobility and object manipulations are difficult or impossible. Students will learn how rehabilitative technologies work and understand their effectiveness to restore human movements. Students will learn how performance is evaluated in individuals operating rehabilitative technologies. This course will allow students to better understand assistive technology and their utilization for individuals with motor disabilities at work, at home and in the community. This course is particularly relevant for students who wish to pursue a career in rehabilitation and allied health.

Prerequisite: Minimum grade of C- in BSCI201, BSCI202, and KNES385; and a minimum grade of C- in MATH113 or higher.

Recommended: KNES265 or PHYS121. Basic knowledge of MS Excel or Matlab.

Restriction: Must have earned a minimum of 75 credits and must be in a major within SPHL-Kinesiology department.

KNES474 Quantitative Methods in Cognitive Motor Behavior - MATLAB (3 Credits)

Includes basic computer programming, algorithm, and quantitative techniques for time-series data with an emphasis on, but not limited to, human movement. These topics will be taught using MATLAB, a programming language and environment for numerical computation, data analysis, and visualization.

Prerequisite: MATH115 or equivalent; or permission of Kinesiology department.

Recommended: MATH240.

Restriction: Must have earned a minimum of 90 credits.

KNES476 Honors Thesis Proposal (3 Credits)

Development of honors thesis proposal based on preliminary research and literature review. Presentation of formal proposal to the thesis committee and fellow honors students.

Corequisite: KNES478.

Restriction: Must be a KNES Honors student; and senior standing.

KNES477 Honors Thesis (3 Credits)

Advisement will be on the individual basis. Thesis must be defended in the honors seminar.

Prerequisite: KNES476.

Corequisite: KNES478.

Restriction: Must be a KNES Honors student; and senior standing.

KNES478 Honors Seminar (1-3 Credits)

Guided discussion of research topics of current interest.

Restriction: Must be a KNES Honors student; and junior standing or higher.

Repeatable to: 4 credits if content differs.

KNES482 Socio-behavioral Aspects of Human Movement (3 Credits)

Derivation, formulation, and application of research in the socio-behavioral aspects of human movement.

Prerequisite: KNES293, KNES350, and KNES287.

KNES483 Sport Marketing and Media (3 Credits)

Industry practices in sport marketing and media. Marketing strategies and consumer behavior in different sport contexts. Critical examination of selected social and economic issues related to the buying and selling of sport.

Prerequisite: Minimum grade of C- in KNES287.

Recommended: KNES355.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 75 credits.

KNES484 Sporting Hollywood (3 Credits)

Popular representations of sport within the film media related to wider social discourses on bodies and the politics of various categories of subjectivity (gender, sex, race, class and nationality).

Prerequisite: Minimum grade of C- in KNES285 and KNES287.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 90 credits.

KNES485 Sport and Globalization (3 Credits)

Examination of sport culture from a global perspective; focuses on theorizing the similarities and differences between various national sporting cultures.

Prerequisite: Minimum grade of C- in KNES287.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 90 credits.

KNES487 Women, Sports and Culture (3 Credits)

A study of the historical barriers to women's participation in physical activity, efforts to dismantle those barriers, and the differentiation that exists in women's sport and physical culture today. Exploration of the historical and contemporary factors involving female athletes in U.S. culture.

Prerequisite: Minimum grade of C- in KNES287.

Restriction: Must be in a major within the SPHL-Kinesiology department; and must have earned a minimum of 90 credits.

KNES497 Kinesiology Senior Seminar (3 Credits)

Discussions of contemporary issues vital to the discipline, critiques of research in the student's area/areas of special interest, completion of a major project where the student will be asked to demonstrate the ability to carry out investigative processes in problem solving and critical writing under faculty direction.

Prerequisite: A professional writing course with a minimum grade of C-; and must have completed 6 KNES core courses and 2 KNES option courses, all with a C- or higher; and must have completed STAT100 with a C- or better.

Restriction: Senior standing or higher; and must be in Kinesiology program; and permission of department.

KNES498 Special Topics in Kinesiology (3 Credits)

Topics of special interest in areas not covered by regularly scheduled courses.

Prerequisite: Permission of SPHL-Kinesiology department.

Repeatable to: 99 credits if content differs.

KNES600 Kinesiology in Public Health (3 Credits)

A broad introduction to public health within the context of the discipline of kinesiology, focusing on furthering the understanding of the ways kinesiology contributes toward achieving the goals of public health.

KNES601 Epidemiology of Physical Activity (3 Credits)

An exploration of basic epidemiological study design, methods, and health outcomes in the field of physical activity.

Prerequisite: KNES600; and must have completed an undergraduate statistics course (e.g., STAT100 or equivalent).

KNES602 Physical Activity Program Planning and Evaluation (3 Credits)

An in-depth analysis of the planning, implementation, and evaluation of physical activity interventions and programs intended to achieve physical activity and public health goals.

Recommended: KNES600.

KNES603 Research Methods in Kinesiology & Public Health (3 Credits)

The purpose of this course is to expose students: (1) to some of the key issues involved in physical activity and public health related research, and (2) the process of conducting and communicating research. In addition to learning the central aspects of a range of quantitative and qualitative research methods, students will gain practice evaluating and synthesizing existing research, as well as writing a research proposal specific to a topic of their choice.

Prerequisite: KNES600, KNES601, and KNES602.

KNES604 Development of Posture and Locomotion (3 Credits)

Development of posture and locomotion in humans integrating the perspectives of biomechanics, neurophysiology, perception-action theory and dynamical systems.

KNES609 Research Issues in Kinesiology (1-3 Credits)

Issues, methodologies, and critical analyses of current research in Kinesiology.

Prerequisite: Permission of SPHL-Kinesiology department.

Repeatable to: 6 credits.

KNES610 Methods and Techniques of Research (3 Credits)

Studies methods and techniques of research used in Kinesiology; an analysis of examples of their use; and practice in their application to problems of interest to the student.

KNES612 Qualitative Research Methods in Physical Cultural Studies (3 Credits)

Prepares students to design, prepare, and produce independent research projects in Physical Cultural Studies (PCS). Topics include: the philosophy of PCS through its epistemological, ontological, and axiological bases; the politics of PCS as an interventionist project; and the practice of PCS as critical pedagogy, within research methodologies, and through the ways in which PCS work is analyzed and expressed.

KNES613 Theories Physical Culture (3 Credits)

Examines and assesses numerous social and cultural theories as frameworks for critically interpreting the varied institutions, ideologies, and embodiments of physical culture.

Credit Only Granted for: KNES613 or KNES689I.

Formerly: KNES689I.

KNES614 Cultural Studies and Physical Culture (3 Credits)

Discusses the political commitments, constituents, and complexities of cultural studies, and their relevance for furthering the understanding of physical culture and the project of physical cultural studies.

Credit Only Granted for: KNES614 or KNES689P.

Formerly: KNES689P.

KNES615 The Body, Culture, and Physical Activity (3 Credits)

Critically examines the social constitution and embodied experience of various empirical fields of physical culture, including sport, health, movement, exercise, recreation dance, and daily living related activities.

KNES616 Physical Cultural Studies (3 Credits)

Provides an introduction to the derivation, elements, focus, and future of the Physical Cultural Studies project, specifically related to the empirical, theoretical, methodological, and axiological aspects of Physical Cultural Studies.

Credit Only Granted for: KNES616 or KNES689B.

Formerly: KNES689B.

KNES618 Current Readings in Exercise and Applied Physiology (1 Credit)

Student-led presentations of contemporary literature in the areas of genetics, exercise science, fitness and health. Emphasis on papers describing new research findings, novel techniques, innovative methods, and emerging issues.

Prerequisite: KNES360; or students who have taken courses with comparable content may contact the department.

Repeatable to: 10 credits.

KNES619 Current Readings in Physical Cultural Studies (1 Credit)

Student led presentations of contemporary literature in physical cultural studies and related areas. Emphasis on material describing new empirical and/or theoretical insights, innovative methods, and emerging issues.

Repeatable to: 10 credits.

Credit Only Granted for: KNES609 or KNES619.

Additional Information: Priority enrollment for students in Kinesiology in the Physical Cultural Studies specialization area.

KNES621 Teaching Elementary Physical Education (3 Credits)

Students will learn aspects of teaching elementary physical education including: characteristics of elementary school students, testing, grading, teaching lifetime skills, and effective teaching techniques using SHAPE America Standards.

Restriction: Must be enrolled in Pre-K to 12 Physical Education Master of Education program.

Credit Only Granted for: KNES689V or KNES621.

Formerly: KNES689V.

KNES622 Teaching Secondary Physical Education (3 Credits)

Students will learn aspects of teaching secondary physical education including: characteristics of secondary school students, testing, grading, teaching lifetime activities, and effective teaching techniques using SHAPE America Standards.

Restriction: Must be enrolled in PreK-12 Physical Education Master of Education program.

Credit Only Granted for: KNES689I OR KNES622.

Formerly: KNES689I.

KNES628 PCS Research & Writing Workshop (3 Credits)

This directed and project focused writing workshop provides students in Physical Cultural Studies, and related fields, the opportunity to develop a processual understanding of the writing craft, focused on enhancing academic writing and editing skills, practices, and routines.

Repeatable to: 6 credits.

Credit Only Granted for: KNES628 or KNES789P.

Formerly: KNES789P.

KNES630 Sociology of Sport in Contemporary Perspective (3 Credits)

Studies social organization and the role of individuals and groups in sport situations: the interrelationship of sport with traditional social institutions; sport as a sub-system and its structure; and sport and social problems.

KNES643 Public Health & Physical Activity in the Classroom (3 Credits)

The purpose of the course is to engage students in developing curriculum that blends movement activity with courses such as math, science, social studies, literature, writing, art, and music to teach traditional classroom courses as an instrument of public health.

Recommended: KNES600.

Restriction: Must be in the Master of Public Health program; or permission of the Kinesiology Department.

KNES645 Exercise and Brain Health (3 Credits)

Examines the evidence for exercise to affect brain function and brain health in children, in adults, and in old age. Covers the adaptations to acute and chronic exercise within brain networks related to emotion, stress reactivity, memory, and executive function, and the effectiveness of physical activity and exercise as treatments for depression, anxiety disorders, and cognitive impairment.

Prerequisite: Minimum grade of C- in KNES350; or students who have taken courses with comparable content may contact the department.

Credit Only Granted for: KNES645 or KNES689X.

Formerly: KNES689X.

KNES651 Motor Control & Synergy (3 Credits)

Students will learn the history, concepts, theories, computations, and pathology regarding motor synergies of human movements.

Credit Only Granted for: KNES651 or KNES789P.

Formerly: KNES789P .

KNES658 Teaching Internship in Physical Education (1-6 Credits)

The MCERT PE internship is an intense experience that immerses interns into the life of their assigned Secondary school. The internship experience is designed to provide our pre-service teachers with a rich opportunity to learn the craft of teaching through close observation of experts as well as practice in the planning, delivery and assessment of instruction.

Restriction: Must be in the Pre-K to 12 Physical Education Master of Education program.

Repeatable to: 6 credits.

Credit Only Granted for: KNES658 or KNES689T.

Formerly: KNES689T.

KNES660 Psychology of Athletic Performances (3 Credits)

Psychological factors, mechanisms, and processes in athletic performance. The basic approach is social psychological, according to which the focus is on individual performance in the interpersonal athletic context. Intrapersonal and interpersonal factors and their effects on athletic performance. Psychology of peak performance, choking, and errors of mental control. Analysis of the general principles and types of mental training.

Prerequisite: KNES350.

Credit Only Granted for: KNES660 or KNES689Z.

Formerly: KNES689Z.

KNES662 Psychology of Exercise and Health (3 Credits)

Examines the antecedents and consequences of exercise behavior. Explores motivation, attitude, control, socialization. Proposes intervention strategies at the individual, organizational and societal levels.

Prerequisite: KNES350; or students who have taken courses with comparable content may contact the department.

Credit Only Granted for: KNES662 or KNES689O.

Formerly: KNES689O.

KNES663 History of Sport in Western Culture (3 Credits)

The history of sport in the ancient, medieval and renaissance West.

KNES674 Quantitative Methods in Cognitive Motor Behavior (3 Credits)

Includes basic computer programming, algorithm, and quantitative techniques for time-series data with an emphasis on, but not limited to, human movement. These topics will be taught using MATLAB, a programming language and environment for numerical computation, data processing, analysis, and visualization.

Recommended: Proficiency in Precalculus and Linear Algebra or permission of department.

Credit Only Granted for: KNES689R or KNES674.

Formerly: KNES689R.

KNES676 Multisensory Perception and Human Motor Control (3 Credits)

Overview of the major sensory inputs to human motor control and spatial orientation including auditory, somatosensory, visual and vestibular.

KNES678 Professional Seminar for Teacher Development in Physical Education (1-3 Credits)

The spring seminar course is an extension of the fall seminar course and spring internship course. It accompanies a full time undergraduate level teaching internship and is intended to support and extend students' field experience learning. The spring seminar course is designed to continue to provide students with the support they need to successfully meet the College of Education's Middle School Mathematics and Science programmatic requirements and the Maryland State Department of Education's Middle School Mathematics and Science Teacher Certification Requirements. These requirements include demonstrating mastery on all of the College of Education's Foundational Competencies (FCCs) and Performance Based Assessments (PBAs) and the national edTPA, InTASC, and AMLE Standards.

Restriction: By permission only for graduate students enrolled in the KNES MCERT program.

Repeatable to: 3 credits.

KNES689 Special Problems in Kinesiology (1-6 Credits)

Master or doctoral candidates who desire to pursue special research problems under the direction of their advisor may register for 1-6 hours of credit under this number.

Repeatable to: 60 credits.

KNES691 Muscular Aspects of Exercise Physiology (3 Credits)

Skeletal muscle structure and function including muscle development, excitation-contraction coupling, muscle fiber types and fatigue, muscle biochemistry, gene expression, muscle damage and regeneration. The effects of aging and exercise training on skeletal muscle.

Prerequisite: KNES360.

Recommended: BSCI422.

KNES692 Cardiovascular Aspects of Exercise Physiology (3 Credits)

A comprehensive consideration of the various cardiovascular factors affecting human physical performance. Emphasis on the regulation of cardiovascular functions during physical activity. Energy liberation and transfer, circulation, respiration, temperature regulation, physiology of work at altitudes, aerobic endurance training, and exercise, health and aging.

Prerequisite: KNES360.

KNES694 Metabolic Aspects of Exercise Physiology (3 Credits)

Effects of exercise on digestion, absorption, transport, storage, mobilization, and utilization of macronutrients. Emphasis on the effects of exercise training on energy metabolism.

Prerequisite: KNES360.

Recommended: BCHM462 and BCHM461.

KNES711 Professional Development and Grantsmanship (3 Credits)

Enhance continued professional development through an exploration of culture, climate, expectations and mentoring in research universities. Generate a grant application including the hypothesis, structure, specific aims, background and significance, and submission of a total grant. Grant process and product will be emphasized.

Restriction: Must be a Doctoral student; and must be in a major in SPHL-School of Public Health.

Credit Only Granted for: KNES711 or KNES789X.

Formerly: KNES789X.

KNES751 Advanced Neuromechanics (3 Credits)

Covers the neurophysiological mechanisms relevant to the processes of generating voluntary movements. The course promotes independent thinking of students and enhances knowledge of basic facts about the design of cells, muscles, neuronal structures, and the whole body for the understanding of typical and atypical movement production related to the nervous system and the functioning brain.

Recommended: Undergraduate-level biomechanics and motor control or equivalents.

Credit Only Granted for: KNES751 or KNES789A.

Formerly: KNES789A.

KNES778 Practical Experience in Physical Activity and Public Health (1-4 Credits)

The practical experience is a time-limited, supervised period of public/community health activities carried out in a health or allied health organization involved with physical activity. Students gain practical experience in areas such as program planning and implementation, program evaluation, public policy analysis, research, and management.

Prerequisite: KNES600, KNES601, and KNES602.

Repeatable to: 4 credits.

Credit Only Granted for: KNES778 or KNES785.

KNES780 Preparation for Capstone Project in Physical Activity and Public Health (3 Credits)

Provides detailed preparation for the culminating experience in which the student applies knowledge and skills learned in the MPH program to conduct independent work on a physical activity problem under the supervision of a faculty advisor. Students will gain proficiency in conducting literature research and reviews, analyzing research methodology for appropriateness for their individual capstone projects, identifying gaps in the literature to support potential capstone topics, and preparing the capstone proposal presentation.

Recommended: Quantitative/Qualitative research methods course.

Restriction: Must be in the Master of Public Health program; or permission of the Kinesiology Department.

Additional Information: This course is also available for students in programs other than PHAO. Priority enrollment reserved for MPH in PA students.

KNES786 Capstone Project in Physical Activity and Public Health (3 Credits)

The culminating experience in which the student applies knowledge and skills learned in the MPH program to conduct independent work on a physical activity problem under the supervision of a faculty advisor.

Prerequisite: KNES600, KNES601, and KNES602.

KNES789 Advanced Projects in Kinesiology (1-3 Credits)

Advanced projects examining current problems and trends in kinesiology.

Repeatable to: 3 credits.

KNES798 Internship in Physical Education/Sports Management (1-8 Credits)

Practical application of previously acquired skills and knowledge in a sport and/or physical education setting. Emphasis on selected experiences to enhance the total academic program of the student. The internship site assignment will depend upon student's background and career goals.

Prerequisite: Permission of SPHL-Kinesiology department.

Repeatable to: 8 credits.

KNES799 Master's Thesis Research (1-6 Credits)**KNES898 Pre-Candidacy Research (1-8 Credits)****KNES899 Doctoral Dissertation Research (1-8 Credits)**