Department of Kinesiology, Nutrition, and Health

For information, contact the Department of Kinesiology, Nutrition, and Health, 204 Phillips Hall, 513-529-2700.

The mission of the Department of Kinesiology, Nutrition, and Health is to advance the science and practice of human movement and health behaviors to enhance quality of life, improve client/patient outcomes, and reduce local and global health disparities.

In addition to required coursework in specific majors, students are encouraged to engage in research, clinical experiences, service projects, internships, and other educational activities to gain critical knowledge and skill proficiencies in the disciplines that comprise kinesiology, nutrition, and health. Learning occurs in the classroom as well as in laboratories, schools, hospitals, and real-world settings. Students can participate in health and fitness programs such as obesity prevention, diabetes intervention, physical rehabilitation, community health education, sustainable farming, community nutrition, contact tracing, and shadow a variety of health professionals in their work settings.

The department offers two undergraduate program majors, including kinesiology and nutrition. The department also offers two undergraduate program minors: nutrition and health behavior.

- Bachelor of Science in Kinesiology, Nutrition, and Health in:
  - Kinesiology
  - Nutrition

Kinesiology, Nutrition, and Health Courses

KNH 101. Personal Nutrition: a survey course. (2)
Nutrition topics relevant to young adults will be explored through application of basic nutrition principles to real life situations. Self-assessment and monitoring of personal nutrition status are an integral part of this course. This course is for non-majors. This is not substitution for KNH 102 Fundamentals of Nutrition for KNH majors.

KNH 102. Food, Nutrition & Health. (3)
An introduction to the essential nutrients and the associated digestion, absorption, transport and function of these nutrients as part of the metabolic process to sustain human health. This course also explores the connection between diets and development of chronic diseases, current issues in nutrition, and nutrition and food safety research and resources. PA-2B, SI-05.

KNH 103. Introduction to the Profession of Dietetics. (2)
An introductory course for students interested in Dietetics. Content will include the history, current practices and future trends in Dietetics. This course covers the practical application of principles from the integration of knowledge of food, nutrition, biochemistry, physiology, management and behavioral and social science. Students will explore career opportunities in Dietetics including an overview of the dietetic internship application process.

KNH 104. Introduction to Food Science. (3)
Introduction to food composition, selection and preparation, and food science principles. Includes lecture (1) and lab (2).

KNH 116. Personal Wellness. (2)
This course is designed to introduce students to the concepts of wellness; what it is and how in-depth wellness can be. Students will learn tools to help with their own personal wellness and apply concepts for their own need. The course will encourage a development of "achieving balance" and awareness of how making choices affects other dimensions of wellness.

KNH 125. Introduction to Public Health. (3)
Public health is a multi-disciplinary field aimed at reducing preventable morbidity and premature mortality, and promoting a higher quality of life in populations and groups through health intervention. This course is designed to introduce the basic tenets, applications, and foci of public health, including integrating public health with other health professions. It will provide a history of public health, an overview of the core disciplines, current events and issues in the field. IIC. PA-2A.

KNH 141. Physics in Sports. (3)
Various aspects of a dozen or more sports are treated using the laws of physics. Provides the non-science student with insight into principles governing motion, dynamics, and other elements of physics in sports. IVB. PA-2B. CAS-D.
Cross-listed with PHY 141.

KNH 177. Independent Studies. (0-6; maximum 10)

KNH 184. Motor Skill Learning and Performance. (3)
Introductory analysis of neurophysiological, biomechanical, and socio-behavioral factors that facilitate and inhibit acquisition, refinement, and retention of motor skills.

KNH 188. Physical Activity and Health. (3)
Critical examination of relationships among exercise, physical activity, fitness, and health from epidemiological perspective. The role of genetic, sociocultural, economic, geographic and political influences on physical activity patterns, exercise habits, fitness and health are explored. A description of the physiological mechanisms that link physical activity and health are also examined. IIC. PA-2A.

KNH 194. Standard First Aid and CPR. (2)
Meets requirements for American Red Cross Standard First Aid certification and Cardiopulmonary Resuscitation (CPR) certification.
Prerequisite: sophomore standing or permission of instructor.
Co-requisite: KNH 194L.

KNH 194L. Standard First Aid and CPR Laboratory. (1)
Laboratory portion of KNH 194.
Co-requisite: KNH 194.

KNH 202. Nutrition Across the Life Span. (3)
This course examines the nutrient needs related to growth, development, and health across the life span. It includes the study of nutrient requirements, nutrition assessment, and nutritional care for those in each life stage (preconception, pregnancy, lactation, infancy, toddler/preschool, child/preadolescent, adolescent, adult, and older adult).
Prerequisite: KNH 102.

KNH 203. Nutrition in Disease Prevention Management. (3)
This course is the study of nutrition in the relation to chronic disease prevention. The course will focus on the menu development for the institutional food service environment including hospitals, extended care facilities and schools. Basic culinary terms and techniques will be integrated into the lab portion of the course. Students will learn and practice management strategies while designing custom menus for specific health related populations. Economic and financial concepts will also be demonstrated and evaluated.
Prerequisites: KNH 101 or KNH 102 and KNH 104.

KNH 205. Understanding Drugs for the Health Promotion Professional. (3)
Examines historical, personal, and cultural bases for current patterns of drug use, misuse, and abuse, and identifies the short and long-term consequences associated with such patterns.

KNH 207. Serving and Supporting Children, Youth, and Families I. (4)
Introductory analysis of relationships among the conditions, characteristics, and capacities of children, youth, and families (especially those labeled 'at risk') and the institutional services and supports intended to improve their well-being. Emphasis placed upon question-finding in different contexts, especially the ways in which the knowledge we claim and the solutions we offer are dependent upon our analytical frames and language.
Cross-listed with FSW.

KNH 209. Medical Terminology for Health Professionals. (3)
Provides the opportunity for students to comprehend basic terms related to anatomy, pathophysiology, diagnostics and treatment. Students will understand word parts necessary to build medical terms and acceptable medical abbreviations and symbols. Credit not granted to students who have earned credit in BTE 224.

KNH 214. Global Well-Being. (3)
As a result of the positive psychology movement that has gained momentum around the world, well-being is now known to be a significant factor influencing quality of life, health, and human performance. This course explores the essence of well-being and its relevance to everyday living. The course also broadens students' perspective by exploring well-being within cultural and global contexts. Students will be given multiple opportunities to examine institutional and cultural influences on individual and societal well-being as well as the global forces influencing the development and use of the human experience of well-being across the globe. IC. PA-4B, SI-05.

KNH 218. Applied Health Behavior Change. (3)
Applied Health Behavior Change focuses on the role of theory in shaping research and practice in health promotion and education. This course will provide an overview of social and behavioral science theories that are currently used to: 1) understand health related behaviors; and 2) guide development of interventions designed to prevent, reduce or eliminate major public health problems.

KNH 221. Social Marketing in Public Health. (3)
Foundational principles and techniques of social marketing which influences individual and societal health behaviors through a systematic plan.

KNH 242. Personal Health. (3)
Variable course content based upon students' personal health problems and needs. Includes such topics as mental health, marriage and family, mood modifiers, nutrition, etc. IIC. PA-2A.
Prerequisite: sophomore standing.

KNH 244. Functional Anatomy. (3)
The course emphasizes aspects of bodily structures and function among skeletal, nervous, and muscle systems. Students will learn the major bony landmarks, the structure and function of the major joints and muscles responsible for controlling human movement.
Co-requisite: KNH 244L.

KNH 244L. Functional Anatomy Laboratory. (1)
Practical examination of musculoskeletal structures of the human body.
Co-requisite: KNH 244.

KNH 245. Issues of Health & Wellness for the Young Child. (3)
This course examines contemporary issues of health and wellness for children ages three to eight years. Childhood health encompasses physical, intellectual, emotional, social, spiritual, and environmental components. The needs of all children, including those with acute and chronic illness and disability, will be promoted through a child-centered approach in a variety of educational contexts.

KNH 262. Public Health Education. (3)
Foundational principles and techniques of health education pedagogy including professional assessments preparing for the Certified Health Education Specialists credential.

KNH 277. Independent Studies. (0-6; maximum 10)

KNH 293. Fitness and Conditioning. (3)
Analysis of training principles and conditioning strategies for individuals of all ages. Differences between sport-specific strategies and those for health-related fitness are emphasized.

KNH 302. Global and Community Nutrition. (3)
Explores the integration of current food and nutrition research into the development of public policy with emphasis on implementation of Global and Community Nutrition programs.
Prerequisite: KNH 102.

KNH 303. Food Systems Management. (3)
Organization and management of food systems: study of the functions of management including human and physical resources, food service design and layout, production and fiscal controls, computer usage and labor guidelines.
Prerequisites: KNH 101 or KNH 102.

KNH 321. National and Global Health Policy. (3)
National and Global Health Policy provides students with an overview of the U.S. health care system, its components, and the policy challenges created by its organization. The course focuses on the major health policy institutions (nationally and globally) and important issues that cut across institutions, including private insurers and the federal/state financing programs. The course will also address mental health issues, disparities in access to care, the quality of care, structure of the delivery system, the challenges of long-term care and the aging of the population, including the drivers of cost growth.

KNH 329. Psychological Perspectives on Health. (3)
Examines psychological factors involved in health. Topics include appraisal of information concerning risks to health, effects of social comparison on the experience of illness, control processes and coping with illness, emotional and cognitive factors associated with physiological responses to stress, psychosocial factors that moderate stress, including social relationships, personality, and gender, and the processes involved in attitude and behavioral change with respect to health issues.

KNH 340. Internship. (0-20)

KNH 362. Public Health Communication. (3)
Describes the foundations of professional development in health promotion through multiple perspectives: health education, health communication, health science, and health behavior. Principles of design inform the diverse role of health promoters working within an ecological framework. Applications of models and theories are practiced in personal, national, and international contexts.
Prerequisite: Junior standing.

KNH 377. Independent Studies. (0-6; maximum 10)

KNH 381. Biodynamics of Human Performance. (3)
Mechanics and neurophysiology of movement performance.
Co-requisite: KNH 381L.

KNH 381L. Biodynamics of Human Performance Lab. (1)
Provide students with opportunities to explore and apply concepts presented in lecture to daily activities and sport movements through hands-on experiments by using some of the measurement equipment used in the field of biomechanics.
Co-requisite: KNH 381.

KNH 382. Physical Activity & Fitness Assessment. (3)
Examination of the theory and application of various procedures, methodologies and technologies used to assess heart disease risk, physical activity, the attributes of health-related physical fitness and the administration of clinically-oriented exercise testing procedures in healthy and chronic disease populations.
Prerequisite: KNH 188.
Co-requisite: KNH 382L.

KNH 382L. Physical Activity & Fitness Assessment Laboratory. (1)
This course is designed to be taken in conjunction with KNH 382 (Lecture); KNH 382L will supplement the theoretical knowledge gained in KNH 382 (Lecture) and enable you to develop the practical skills necessary to: 1. Assess major signs or symptoms of cardiovascular, renal, pulmonary or metabolic diseases and coronary heart disease risk; 2. Risk stratify individuals for appropriate medical clearance procedures and initial physical activity/exercise intensity recommendations; 3. Develop and administer an appropriate/optimal battery of physical activity, health-related physical fitness and functional movement assessment procedures; 4. Administer clinically-oriented exercise testing procedures; and 5. Interpret and discuss all of these assessment data.
Prerequisite: KNH 188.
Co-requisite: KNH 382.

KNH 395. Public Health Research Methods. (3)
This course will guide students in the interpretation and analysis of research relevant to public health. Students will understand the foundation of research study designs, interpretation of results, and the translation of results to enhance public health practice. Students will also gain experience in the development, maintenance, evaluation, and reporting of public health data. Human subjects protection will be emphasized.

KNH 402. Capstone in Kinesiology, Nutrition, and Health. (3)
The senior capstone enables students to work collaboratively on important societal topics that cut across Kinesiology, Nutrition, and Health. Utilizing research, in which students apply knowledge to improve health outcomes, and a variety of writing genres that include critiques, reflection, creative, research, and media articles, students will explore, analyze, and synthesize scholarly literature on a variety of topics and/or themes. A culminating scholarly project will be created. EL, SC.
Prerequisite: Senior standing.

KNH 403/KNH 503. Nutrition Counseling and Communication Skills. (3)
This course addresses key skills necessary for the practice of dietetics and other health-related professions, including nutrition screening and counseling, group and individual nutrition education, nutrition care plan development, communication, cultural competency, and medical and professional ethics.
Prerequisites: KNH 102, 104 and Senior standing.

KNH 404. Advanced Food Science. (3)
Applications of experimental methods in the preparation of food. Comparison and evaluation of food products in relation to quality and use. Research methods are emphasized.
2 Lec. 1 Lab.
Prerequisites: KNH 104 or equivalent and minimum of 5 hours in chemistry, CHM 141 and CHM 144 or equivalent.

KNH 405/KNH 505. Advanced Nutrition I: Macronutrient Metabolism. (3)
This course focuses on macronutrients and energy and will cover topics related to energy metabolism, carbohydrates and fiber, lipids and lipoproteins, and amino acids and proteins. It is designed to review and build upon students' existing knowledge of biology and chemistry and will provide instruction in biochemical and physiologic principles necessary to understand the aspects of macronutrients. Students cannot get credit for both KNH 304 and KNH 405/KNH 505/505.
Prerequisites: KNH 102, CHM 142 and 145, and BIO 161.

KNH 406/KNH 506. Advanced Nutrition II: Micronutrient and Phytochemical Metabolism. (3)
This course focuses on micronutrients including fat- and water-soluble vitamins and minerals and phytochemicals. It will cover micronutrient and phytochemical sources, digestion, absorption, bioavailability, homeostasis, functions throughout the lifecycle, including roles in health promotion and disease prevention, and deficiency and toxicity states.
Prerequisite: KNH 405/KNH 505 or equivalent.

KNH 409/KNH 509. Nutrition for Sports and Fitness. (3)
Study of the interrelationship between nutrition and physical fitness. Discussion of nutritional aspects for specific sports. Examination of nutrition research related to health enhancement and performance.
Prerequisite: KNH 102.

KNH 411. Medical Nutrition Therapy I. (3)
Examination of physiological and metabolic changes in selected states and implications for medical nutrition therapy.
Prerequisites: KNH 102 and a minimum of 6 hours chemistry.

KNH 413. Medical Nutrition Therapy II. (3)
In depth study of the principles of nutrition in more complicated disease states of the Neurological System, Respiratory System, Musculoskeletal System, and Neoplastic and Metabolic Disorders.
Prerequisites: KNH 102 and a minimum of 6 hours in chemistry.
Co-requisite: KNH 411.

KNH 420. Field Experience. (1-4; maximum 8)
Practice in field settings of instructional, diagnostic, prescriptive, and evaluative processes in physical education, health, sport studies, and athletic training.
Prerequisite: departmental permission.

KNH 420G. Field Experience in Dietetics. (1-4)

KNH 424/KNH 524. Public Health Disparities Past and Current. (3)
Interpretation of the principles and patterns of public health through a historical lens. Thematic comparisons are explored from antiquity to contemporary health practices in human health and disease.

KNH 428. Public Health in Action. (3)
Students will draw upon the knowledge and skills they have developed as part of their entire liberal education to work both independently and as a member of a cross-disciplinary team to critically examine and propose solutions to relevant public health issues impacting today's society. Students will partner with an organization to explore public health issues and develop a final product that can be used by the organization to improve the health of its members. Professionalism, cultural competence and ethics in public health practice are addressed. EL, SC.
Prerequisites: Senior standing and public health major.
Cross-listed with GTY 428 and MBI 428.

KNH 434/KNH 534. Public Health Communication and Marketing. (3)
Describes the foundations of professional development in health promotion through multiple perspectives: health education, health communication, health science, and health behavior. Principles of design inform the diverse role of health promoters working within an ecological framework. Applications of models and theories are practiced in personal, national, and international contexts. Foundational principles and techniques of social marketing which influences individual and societal health behaviors through a systematic plan will also be discussed.
Cross-listed with KNH 534.

KNH 441/KNH 541. Environmental Public Health. (3)
This course is a study of the effects of human-made and natural physical, biological, and chemical agents on human health. The course explores the interaction of population health, demographics, and environmental determinants of disease. The course covers the basic principles of epidemiology, exposure, risk characterization, disease pathogenesis, and diagnostic testing, as well as the public works and regulatory controls used to limit exposure. CAS-D.
Cross-listed with IES 441/IES 541.

KNH 442/KNH 542. Strength Training and Conditioning. (3)
This course critically examines the physiological principles and current research underlying the design of strength training and conditioning programs aimed at improving health and performance of athletes and non-athletes.
Prerequisite: junior or senior standing.

KNH 453/KNH 553. Seminar in Kinesiology and Health. (1-4)
Advanced study of current developments in technical and organizational aspects of activities within these fields.
Prerequisite: junior or graduate standing.

KNH 462/KNH 562. Public Health Planning and Evaluation. (3)
Introduction to current models of health education programming and the issues and trends therein. Provides knowledge and skills needed to plan, implement, and evaluate health education programs.

KNH 465/KNH 565. Musculoskeletal Disorders and Exercise. (3)
This course examines common Musculoskeletal Disorders (MSDs) with special consideration given to the roles of lifestyle and the movement system in the cause and treatment of MSDs.
Prerequisite: junior or senior standing.

KNH 468/KNH 568. Physiology of Exercise and Physical Activity. (3)
Critically examines the physiological processes and mechanisms thought to underlie the relationships between physical activity, exercise, and health.
Prerequisite: (BIO 161 or BIO 305) and KNH 188.
Co-requisite: KNH 468L/KNH 568L.

KNH 468L/KNH 568L. Physiology of Exercise and Physical Activity Laboratory. (1)
This course is designed to be taken in conjunction with KNH 468/KNH 568 (Lecture) and will enable students to develop practical skills involved in exercise physiology assessment necessary to: 1. develop and administer an appropriate/optimal battery of physical activity and health-related physical fitness procedures; 2. administer health- and performance-oriented exercise testing procedures; and 3. interpret and discuss all of these assessment data.
Prerequisite: (BIO 161 or BIO 305) and KNH 188.
Co-requisite: KNH 468/KNH 568.

KNH 477. Independent Studies. (0-6; maximum 10)

KNH 480/KNH 580. Mechanics of Musculoskeletal Injury. (3)
In this class, we learn how various human and animal biological materials such as muscle, tendon, ligament, bone, cartilage, skin and other tissues develop. We then examine how mechanical loading can cause adaptation and injury of these biological materials.
Prerequisite: KNH 244.

KNH 481. Life at Altitude. (3; maximum 6)
During this course we will visit Nepal/Tibet and trek through the Himalayas to Mt Everest Base Camp. We will perform physiological tests before and during the workshop to assess the effects of altitude exposure on the body. We will live among a group of Sherpa and learn about their culture including their religion, role of the family, health care education etc. All majors are welcome. No trekking experience necessary. PA-2B, SI-05.

KNH 482/KNH 582. Exercise Prescription: Healthy Individuals & Individuals with Chronic Diseases/Disorders. (3)
In a case-study format, students will develop evidence-based physical activity/exercise recommendations (exercise prescriptions) for healthy individuals. Additionally, this course provides in-depth information about chronic diseases, disorders and disabilities that are commonplace and can be managed with exercise and physical activity. Content is directed towards understanding of specific physiological and pathophysiological characteristics associated with common chronic diseases, disorders and disabilities, its effect on the exercise response and adaptations, the effects of commonly used medications on the exercise response, and unique circumstances associated with specific chronic diseases/disorders. The development of specific physical activity/exercise prescriptions (recommendations & guidance) is directed for individuals with the following: cardiovascular diseases, pulmonary diseases, metabolic diseases, immunological and hematological diseases, orthopedic diseases and disabilities, neuromuscular disorders, and cognitive, psychological, and sensory disorders.
Prerequisite: KNH 382 and KNH 382L.

KNH 483/KNH 583. Advanced Motor Control and Learning. (3)
This course provides advanced-level examination of the behavioral neuroscience of human action. Emphasis is placed on understanding the sensorimotor control of stance and locomotion, reflex circuitry and voluntary movement, visually-guided actions and programmed movement, as well as the process by which humans benefit from experience so that future behavior is better adapted to the environment.
Prerequisite: must have had an introductory course in motor control and learning such as KNH 184 or permission of instructor.

KNH 491/KNH 591. Injury Recognition and Patient Care. (3)
The course provides an overview of the mechanism, prevention, and management of health conditions commonly seen in athletic training practice. The course examines the affected anatomy and physiology of injuries, explains preventive measures to reduce incidences of such injuries, and provides instruction on procedures employed in injury treatment.
Prerequisite: Junior/Senior standing, or Graduate standing, or permission of instructor.

KNH 600. Independent Reading. (1-9; maximum 9)
Supervised independent reading about research and applied practices in areas of Exercise and Public Health and Health Education (1-9 credits; maximum 9 credits toward graduation).
Prerequisite: permission of department chair and instructor.

KNH 601. Athletic Training Clinical Practicum I. (1)
Provides students with clinical based educational opportunities within a variety of athletic training practice settings working under the direct supervision of an Athletic Trainer (AT) or Physician (MD or DO) assigned as a preceptor. Formal assignment of the clinical experience is based on Commission on Accreditation of Athletic Training Education (CAATE) standards. Students are required to complete 105 hours during the semester while formally assigned to Clinical Practicum I. Over the duration of the seven week rotation, students will average 15 hours per week within the rotation.
Prerequisite: KNH 491/KNH 591/591.

KNH 602. Athletic Training Clinical Practicum II. (2)
Provides students with clinical based educational opportunities within a variety of athletic training practice settings working under the direct supervision of an Athletic Trainer (AT) or Physician (MD or DO) assigned as a preceptor. Formal assignment of the clinical experience is based on Commission on Accreditation of Athletic Training Education (CAATE) standards. Students are required to complete 210 hours during the semester while formally assigned to Clinical Practicum II. Over the duration of the seven week rotation, students will average 30 hours per week within the rotation.
Prerequisite: KNH 601.

KNH 603. Athletic Training Clinical Practicum III. (2,3)
Provides students with clinical-based educational opportunities within a variety of athletic training practice settings working under the direct supervision of an Athletic Trainer (AT) or Physician (MD or DO) assigned as a preceptor. Formal assignment of the clinical experience is based on Commission on Accreditation of Athletic Training Education (CAATE) standards. Students are required to complete 210 hours during the semester while formally assigned to Clinical Practicum III. Over the duration of the seven week rotation, students will average 30 hours per week within the rotation.
Prerequisite: KNH 602.

KNH 604. Athletic Training Clinical Practicum IV. (2-3)
Provides students with clinical based educational opportunities within a variety of athletic training practice settings working under the direct supervision of an Athletic Trainer (AT) or Physician (MD or DO) assigned as a preceptor. Formal assignment of the clinical experience is based on Commission on Accreditation of Athletic Training Education (CAATE) standards. Students are required to complete 315 hours during the semester while formally assigned to Clinical Practicum IV. Over the duration of the seven week rotation, students will average 45 hours per week within the rotation. AT Practicum IV fulfils CAATE Standard 16: The clinical education component is planned to include at least one athletic training immersive clinical experience.
Prerequisite: KNH 603.

KNH 607. Foundational Skills in Athletic Training. (3)
This course investigates the knowledge, skill and professional foundations of Athletic Training. Emphasis is placed on the role of the Athletic Trainer (AT) as a member of the health care system by decision-making through evidence-based practice and foundational skills including environmental illness prevention, fitting protective equipment and devices, and prophylactic preventative taping.
Prerequisite: KNH 605.

KNH 609. Emergency Patient Care in Athletic Training. (3)
A course on recognition, care, and management of emergency health conditions commonly seen in athletic training practice with focus on the practical application of evidence-based standards of care in the management of emergency situations.
Prerequisite: KNH 605.

KNH 610. Internship in Exercise, Health, and Sport Delivery Systems. (1-4)
Supervised clinical experiences in sport and health agencies coupled with directed readings.

KNH 611. Behavioral Approaches to Health Promotion and Education. (3)
Analysis of research and theory in health promotion, especially behavioral approaches to disease prevention.

KNH 612. Theoretical Foundations of Health Promotion and Education. (3)
Focuses on the role of theory in shaping research and practice in health promotion and education. Includes a historical perspective to investigate the interaction between health education and applied social sciences.

KNH 613. Health Communication & Education. (3)
Introduces health communication theory and processes for different audiences within the social ecological model. Explores evidence-based strategies when educating for health, including design analysis of health literacy and media literacy.

KNH 620. Research Problems. (1-9; maximum 9)
Supervised research experience in areas of Exercise and Health Science, and Public Health and Health Education.
Prerequisite: permission of department chair and instructor.

KNH 621. Research Foundations in Kinesiology and Health. (3)
Provides foundational knowledge and skills regarding the research process in kinesiology and health, including a critical analysis of research traditions and practices in the field.

KNH 623. Qualitative Research Approaches in Kinesiology, Nutrition, and Health. (3)
Course provides overview of the methodological procedures used by researchers in the kinesiology, nutrition, and health fields that adhere to an interpretive, qualitatively-based research approach. Course topics include research methods, data collection issues, and basic analysis procedures.
Prerequisites: Graduate Status and KNH 621.

KNH 625. Clinical Anatomy and Kinesiology. (3)
This graduate course will provide in-depth study of human anatomical structures and their function including the upper extremity, lower extremity, head, neck, trunk, and pelvis. There will be a strong emphasis on clinical implications and how disease and/or injury affect normal anatomical structure/function relationships.
Prerequisite: Graduate standing or permission of instructor.

KNH 626. Examination & Diagnosis I - Lower Extremity. (3)
Course will present examination techniques and explore differential diagnoses for health conditions commonly seen in athletic training practice. Clinical examination skills utilized in the diagnosis of lower extremity injury will be the focus. An awareness of diagnostic accuracy will be emphasized throughout the course.
Prerequisite: KNH 605.

KNH 627. Examination & Diagnosis II - Upper Extremity. (3)
Course will present examination techniques and explore differential diagnoses for health conditions commonly seen in athletic training practice. Diagnostic clinical examination skills utilized in the diagnosis of upper extremity injury will be the focus. An awareness of diagnostic accuracy will be emphasized throughout the course.
Prerequisite: KNH 601.

KNH 628. Examination & Diagnosis III - General Medical. (3)
Course will present examination techniques and explore differential diagnoses for health conditions commonly seen in athletic training practice. Diagnostic clinical examination skills utilized in the diagnosis of general medical conditions, including head injuries, will be the focus. The course will also present a comprehensive approach to the assessment and diagnosis of musculoskeletal injuries to the spine and torso including the identification of risk factors, the role of clinical outcome measures, and appropriate referral decisions.
Prerequisite: KNH 601.

KNH 636. Therapeutic Interventions I - Modalities. (3)
A comprehensive study of the use of therapeutic agents for the treatment of athletic injuries. Emphasis will be placed upon the indications, contraindications, precautions, and physiological effects of electromagnetic, acoustic, and mechanical modalities.
Prerequisite: KNH 601.

KNH 637. Therapeutic Interventions II - Rehabilitative Exercise. (3)
A comprehensive study of the application of movement and exercise as each relates to the varied and detailed goals of rehabilitation and reconditioning for injured physically active individuals. Emphasis is placed on pathologies and their relationship to therapeutic rehabilitation.
Prerequisite: KNH 601.

KNH 638. Therapeutic Interventions III - Pharmacology & Psychosocial. (3)
This course prepares the student to safely and effectively recommend over the counter medications, recognize common prescription medications and their implications for physical activity, understand basic pharmacological principles, and act appropriately when the abuse of legal or illegal substances is suspected. Students will also be equipped with the knowledge and skills to respond appropriately to psychosocial disorders and mental health emergencies, as well as address psychological factors in injury response and rehabilitation in order to facilitate return to optimal function. The role of evidence-based nutrition in optimizing physical performance in active individuals will also be discussed.
Prerequisite: KNH 601.

KNH 640. Internship. (0-12; maximum 6)

KNH 641. Supplemental Clinical Experience in Athletic. (1-3; maximum 21)
This course is available to those students who wish to voluntarily extend their clinical experience rotation beyond the allotted requirements for KNH 601, 602, 603, and 604 in a given term. This course is also available to those who wish to complete a clinical rotation during a non-required term (e.g., Winter or Summer).Supplemental clinical experiences are not permitted to extend beyond 315 total clinical experience hours (3 credit hours per).

Prerequisite: KNH 601.

KNH 642. Advanced Nutrition Assessment in Dietetics. (3)
This course explores the scientific basis for practice in medical nutrition therapy. Topics include specific development of practice guidelines for persons in various stages of the life cycle and with health conditions requiring specialized nutritional care.
Prerequisites: KNH 411 and KNH 413 (or equivalent).

KNH 647. Obesity and Weight Management. (3)
This course will examine the prevalence, etiology, risk factors, co-morbidities, and the prevention and treatment of obesity. Emphasis will be on evidence-based strategies to prevent and manage obesity across the lifespan.

KNH 654. Physical Activity Motivation. (3)
This broad survey course examines physical activity from primarily a social psychological perspective. The focus is on the role physical activity plays in people's health and wellbeing as well as the psychological and social factors that influence their physical activity participation. The philosophy and effectiveness of varying types of physical activity interventions, programs, and strategies are also examined.

KNH 656. Clinical Pathology in Athletic Training. (3)
This course provides an in-depth exploration of altered structural and physiological adaptation processes and how they apply to assessment and treatment of disease with an emphasis on conditions encountered in athletic training and health care.
Prerequisite: KNH 601.

KNH 658. Health Care Administration and Informatics in Athletic Training. (3)
This course is to provide students with a survey of Healthcare Information Technology including electronic records and health informatics. Emphasis will be placed on the integration of health information technology into clinical practice. It is also designed to give students an understanding of the planning, management and coordinating all administrative components of an athletic training program.
Prerequisite: KNH 601.

KNH 668. Advanced Physiology and Biophysics of Human Activity. (3)
Advanced level study of the physiological responses and adaptations to physical activity. Heavy emphasis is placed on the nature of control mechanisms and their integration across organ systems.
Prerequisite: KNH 468/KNH 568 or its equivalent.

KNH 677. Independent Studies. (0-6; maximum 10)

KNH 685. Physical Activity and Nutrition in Aging. (3)
Examination of research and practices on the relationship among health, nutrition and selected age-related diseases in relationship to longevity, with a focus on lifestyle and preventative health.

KNH 688. Advanced Biomechanics. (3)
Students will examine biomechanical concepts and applications using math, physics, and physiology. This will include the application of force to the human body and how the human body adapts/reacts to these forces as well as the application of mechanics to sport situations. Students will design and complete a biomechanics research project using the equipment in the biomechanics laboratory. Results of the research will be presented as the final class project.

KNH 691. Evidence-based Athletic Training. (2)
The course introduces the principles of evidence-based practice (EBP) as applied to the field of athletic training. Content covers research evaluation and the implementation of evidence-based practice into clinical practice. Athletic training students will learn to formulate clinical questions, appraise existing research, and apply the principles in an effort at providing the most optimal patient care.

KNH 692. Evidence-based Athletic Training II. (2)
The course builds from the foundation of KNH 691 – Evidence-based Athletic Training. Content covers the appraisal of evidence-based practice within clinical practice. Athletic training students will learn to incorporate outcomes that are reported by the patient into their clinical practice as a means to enhance the decision making process and to prioritize patient-centered care.
Prerequisite: KNH 691.

KNH 693. Graduate Seminar in Athletic Training. (1)
The course is designed to guide first-year Master of Athletic Training (MAT) students through the development of an evidence-related project (e.g., patient case report, literature review, systematic review, meta analysis, critically-appraised paper, critically-appraised topic) with a focus on clinically relevant research in athletic training that enhances patient outcomes.
Prerequisite: KNH 691.

KNH 695. Graduate Seminar in Athletic Training II. (1)
The course is designed to guide second-year Master of Athletic Training (MAT) students through the dissemination (e.g., internal research colloquium, conference free-communication session, journal publication) of an evidence-related project with a focus on clinically relevant research in athletic training that enhances patient outcomes.
Prerequisite: KNH 693.

KNH 697. Graduate Capstone in Athletic Training. (2)
This course will offer students the opportunity to synthesize advanced athletic training theory and evidence-based practices, clinical techniques, and foundational behaviors of professional practice necessary for successful practice as an entry-level athletic trainer. Students will also have opportunities to develop an understanding of the necessary requirements for continued professional growth, and appreciate the roles and responsibilities of an Athletic Trainer (AT). Class meetings will include discussions on current topics pertaining to the field of athletic training.

KNH 700. Thesis, M.A.. (1-10; maximum 10)

KNH 704. Non-Thesis Project. (0-12; maximum 12)