

KINESIOLOGY AND HEALTH SCIENCE (KNES)

Courses

KNES 107 - Lifetime Wellness Credit 1

Students in this course will have the opportunity to gain knowledge about the broad spectrum of human health components as related to personal wellness for life, and participate in activities to support that goal. Through a diverse set of learning experiences, students will gain insight into how they can implement physical activity and exercise into their daily lives. Students will also learn techniques to enhance nutritional, behavioral, emotional, and spiritual wellness, thereby positively impacting their overall quality of life. Structured independent physical activity outside of class hours is required throughout the semester. Core Curriculum: Approved for Core - Kinesiology and Health Science. **Grade Mode:** A.

Restriction(s): Must be Undergraduate Level.

KNES 110 - Lifetime Wellness Activity Credit 1

Fundamental techniques of individual skills, basic strategy and rules. Aerobics, archery, badminton, basketball, bowling, conditioning/jogging, lacrosse, fitness walking/jogging, flag football, first aid/CPR**, flexibility and core training, golf, disc golf, snowboarding/skiing, soccer, softball, swimming, tennis, karate, self defense, Rape Aggression Defense Systems (RADS), volleyball, water polo and weight training. Core Curriculum: Approved for Core - Kinesiology and Health Science.

Note(s): Other activities may be offered upon sufficient demand; recreation classes offered are backpacking, mountain biking, road cycling and rock climbing; only one recreation class may be counted as activity credit; **First Aid/CPR does not count as activity credit. **Grade Mode:** A, C.

Restriction(s): Must be Undergraduate Level.

Repeat Limit (after first attempt): 6.

Course Fee: \$20.

Additional Fee(s): Exceptions to the standard course fee are archery and Rape Aggression Defense Systems (RADS), \$40; disc golf, \$45; bowling, \$55; golf, \$50; backpacking, and rock climbing, \$90; snowboarding/skiing \$580.

KNES 118 - Varsity Athletics Credit 1

Reserved for intercollegiate athletic teams. Enrollment during the registration period necessary. **Grade Mode:** A.

Restriction(s): Must be Undergraduate Level.

Repeat Limit (after first attempt): 6.

KNES 200 - Public Health Principles and Practice Credits 3

Overview of historically fundamental and currently relevant topics/concepts that have influenced how public health is addressed on a large scale and at the community level. Topics will be presented as addressed in a contemporary manner by public health practitioners. **Grade Mode:** A.

Restriction(s): Must be Undergraduate Level.

KNES 201 - Elementary Physical Education Methods and Activities Credits 2

Understanding, planning programs and implementing a range of fundamental movement and fitness activities designed for the elementary child; preparation for the upper-division methods course.

Grade Mode: A.

Prerequisite(s): LEDU 301 or LEDU 355.

Restriction(s): Must be Liberal Stds Multidisciplinary (LSMD), Liberal Studies Elementary Ed (LSEE), Kinesiology (KHPE), Early Childhood (LECD), or Elementary Education Minor (LEED); and Undergraduate Level.

Course Fee: \$15.

KNES 205 - Foundations in Physical Education and Kinesiology Credits 3

A historical review of physical education and kinesiology; objectives of physical education; development of a basic philosophy and background for professional development. **Grade Mode:** A.

Restriction(s): Must be Undergraduate Level.

KNES 213 - Scientific Principles of Health and Fitness Credits 3

Scientific principles of health and fitness related to enhancing aerobic and anaerobic, endurance, muscular strength, power, hypertrophy, endurance, flexibility, body composition, stress management and goal setting will be explored. Acute and chronic adaptations to various populations that occur as a result of various types of training will be discussed. Knowledge, skills, and abilities necessary to develop, implement, and manage a basic fitness regimen for themselves will be developed. Students will participate in practical learning opportunities designed to demonstrate, assess, and enhance parameters of fitness and health. **Note(s):** This course will fulfill the Core Curriculum Kinesiology and Health Science requirement for Kinesiology and Health Science majors only. **Grade Mode:** A.

Prerequisite(s): BIOS 236 or BIOS 254.

Restriction(s): Must be Undergraduate Level.

Course Fee: \$30.

KNES 300 - Health Education and Health Promotion Credits 3

This course introduces the student to the discipline of health education and health promotion. Health education comprises consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills which are conducive to individual and community health. Health promotion is the process of enabling people to increase control over and to improve their health. Students will examine the concepts of health and wellness, determinants of health behavior, and elements in the assessment, planning, implementation, and evaluation in population-based health care. **Grade Mode:** A.

Restriction(s): Must be Undergraduate Level.

KNES 301 - Kinesiology Credits 3

Human movement with emphasis on the structure and function of the skeletal, muscular and nervous systems, with simple mechanical principles involved in movement skills. **Grade Mode:** A.

Prerequisite(s): Majors in the Department of Kinesiology and Public Health: BIOS 236 or BIOS 254; all other majors: BIOS 254.

Restriction(s): Must be Undergraduate Level.

KNES 302 - Exercise Physiology**Credits 3**

Basic physiological concepts of muscular exercise with emphasis on the acute responses and chronic adaptations of the neuromuscular, circulatory and respiratory systems. **Grade Mode:** A.

Prerequisite(s): Majors in the Department of Kinesiology and Public Health: BIOS 236; or BIOS 254 and BIOS 281; all other majors: BIOS 254 and BIOS 281.

Restriction(s): Must be Undergraduate Level.

KNES 303 - Exercise Physiology Laboratory**Credit 1**

Laboratory and field applications of testing in exercise physiology. Theory and skills in fitness assessment will be covered, along with analyses of test results. **Grade Mode:** A.

Prerequisite(s): KNES 302 (may be taken concurrently).

Restriction(s): Must be Undergraduate Level.

Course Fee: \$100.

KNES 305 - Principles of Epidemiology**Credits 3**

This is an introductory course in public health and allied health fields to provide a foundation in key epidemiologic concepts. Principles and methods used to investigate the distribution, determinants, and prevention strategies for disease in human populations. The approaches of epidemiology in estimating the burden of disease; in making inferences about cause of disease; and in evaluating primary, secondary, and tertiary prevention strategies are presented. **Grade Mode:** A.

Restriction(s): Must not be Freshman Class; and must be Undergraduate Level.

KNES 307 - Measurement and Evaluation in Kinesiology**Credits 3**

Lecture, laboratory and field experience in the development, evaluation and application of tests in kinesiology and physical education; use and interpretation of elementary statistics. **Grade Mode:** A.

Prerequisite(s): MATH 210, or MATH 318, or equivalent.

Restriction(s): Must be Undergraduate Level.

Course Fee: \$25.

KNES 310 - Community and Global Health**Credits 3**

This course describes the need for assessment and program planning in community and global health with specific emphasis on strategies/methods used. Strategies for conducting community assessments using community-based participatory approaches to identify factors affecting the health and well-being of population and community health are studied. Students examine health systems across and within countries, including the social, economic, cultural, and political forces and their influence on health outcomes. Organizations, programs, and practices are considered across health issues in a global setting. **Grade Mode:** A.

Restriction(s): Must not be Freshman Class; and must be Undergraduate Level.

KNES 315 - Principles of Biostatistics**Credits 3**

This course helps students learn about the most commonly used statistical methods in clinical, public health, epidemiological, and experimental research. Students will also learn how to interpret and communicate the results of statistical analysis when studying population-level data. Topics covered in this course include basic statistical terminology, probability distributions, sampling distributions, and tests of hypothesis including nonparametric procedures, ANOVA, regression, categorical data, and documenting the results of their analyses. **Grade Mode:** A.

Restriction(s): Must not be Freshman Class; and must be Undergraduate Level.

KNES 320 - Health Behavior and Health Promotion**Credits 3**

This course examines theoretical constructs that underlie explanations for health-positive or health-destructive behaviors and programs to address these. Behavioral theory related to health education, promotion, planning, and assessment in various communities. Health disparities, current health practices, and relevant health-related research and current topics will be covered. Students will learn theory-based approaches to public health and health promotion. Critical analysis of existing models and future needs of the field is encouraged.

Grade Mode: A.

Restriction(s): Must not be Freshman Class; and must be Undergraduate Level.

KNES 325 - Environmental Health**Credits 3**

This course surveys the environmental factors that affect the health and safety of a human community. Topics include causal links between chemical, physical, and biological hazards in the environment and their impact on health, and the genetic, physiologic, and psychosocial factors that influence environmentally compromised health outcomes. The course integrates public health strategies with concepts of sustainability and mitigation of environmental risks. **Grade Mode:** A.

Restriction(s): Must not be Freshman Class; and must be Undergraduate Level.

KNES 329 - Psychology of Exercise and Health**Credits 3**

Psychological and behavioral factors in exercise participation, physical performance, health enhancement, and wellness promotion. Influences, barriers, and positive factors in engagement of exercise and health behaviors is examined from theoretical and practical perspectives. **Grade Mode:** A.

Restriction(s): Must be Undergraduate Level.

KNES 330 - Global Health Leadership**Credits 3**

Building character for global health leadership and understanding the value of cultural humility. Learning how to lead strong, assess organizational dynamics in the US and other countries, and create a culture of honor for international partnerships. This course helps students integrate biblical principles, leadership, and administration in public health within the framework of current health policy. This course will also examine a biblical view of global health leadership.

Grade Mode: A.

Prerequisite(s): KNES 310.

Restriction(s): Must not be Freshman Class; and must be Undergraduate Level.

KNES 335 - Health Concepts**Credits 3**

Physical fitness and disease; nutrition and obesity; mental health and stress management; substance abuse (drugs, tobacco and alcohol); human sexuality. Supports the teacher certification requirement in health for physical education majors. **Lecture/Lab Hours:** Three hours lecture. **Note(s):** The course is designed for majors in kinesiology and physical education; not for the Core Curriculum requirement in the sciences. **Grade Mode:** A.

Restriction(s): Must be Undergraduate Level.

KNES 337 - Exercise in Health and Disease**Credits 3**

Theoretical and practical examination of relationships and scientific aspects of exercise to health and disease. Influences and effects of exercise on health status, human performance, chronic diseases, and dysfunctions. **Grade Mode:** A.

Prerequisite(s): KNES 213, or BIOS 254 and BIOS 281, or BIOS 236.

Restriction(s): Must be Undergraduate Level.

Course Fee: \$25.

- KNES 340 - Health Policy and Ethics** Credits 3
This course focuses on ethical theory and current ethical issues in public health and health policy, including resource allocation, the use of summary measures of health, the right to health care, and conflicts between autonomy and health promotion efforts. Current health policy will be integrated with Christian theology specifically focusing on a biblical view of health and ethics. Students will participate in small group discussions evaluating ethical principles in current health care issues and public health policy. **Grade Mode:** A.
Restriction(s): Must not be Freshman Class; and must be Undergraduate Level.
- KNES 351 - Strength and Conditioning Program Design** Credits 3
Principles of strength and conditioning will be discussed. Program design will examine outcomes associated with different strength training regimens. Periodization and planned variation of frequency, intensity, volume and rest will be highlighted. Optimization of these variables to prevent overtraining and promote peak performance in a variety of contexts will be discussed. **Grade Mode:** A.
Prerequisite(s): KNES 213, KNES 302.
Restriction(s): Must be Undergraduate Level.
Course Fee: \$30.
- KNES 355 - Health Care Systems** Credits 3
This course is a survey of the delivery of health care in the United States with relevant comparisons to systems internationally. This course will discuss the historical growth and development of the U.S. health care system. Grounded in an understanding of factors determining health, a framework for understanding and assessing the health care delivery system will be reviewed including evolving challenges to the current system. Review of the American health care system will also include the roles of state and federal governments, the role of health care providers, and the potential impact of health care reform on the future of the American health care system. **Grade Mode:** A.
Restriction(s): Must be Undergraduate Level.
- KNES 360 - Applied Public Health Research Methods** Credits 3
This course explores qualitative, quantitative, and mixed methods in public health research. Students will learn how to apply appropriate research methods in different career paths within public health. Research projects will allow students to focus on their methodological approach within an area of interest, such as a career as a public health specialist, surveillance coordinator, outbreak investigator, health education specialist, program designer, field epidemiologist, and more. Research methods and theory are brought to life as students apply their knowledge and gain the experience needed to prepare them for successful careers in public health. **Grade Mode:** A.
Restriction(s): Must not be Freshman Class; and must be Undergraduate Level.
- KNES 401 - Care and Prevention of Athletic Injuries** Credits 3
Introduction to understanding athletic injuries, including principles, theories and practice in the disciplines of injury prevention, assessment and treatment. **Grade Mode:** A.
Prerequisite(s): Majors in the Department of Kinesiology and Public Health: BIOS 236 or BIOS 254; all other majors: BIOS 254.
Restriction(s): Must be Undergraduate Level.
Course Fee: \$50.
- KNES 402 - Evidence Based Sports Medicine** Credits 3
This class focuses on evidence-based practices of prevention and rehabilitation of common sports-based injuries through literature searches, expert opinions, and athletic experiences. **Grade Mode:** A.
Prerequisite(s): BIOS 254.
Restriction(s): Must be Undergraduate Level.
- KNES 408 - Motor Learning** Credits 3
Overview of significant factors that influence and determine the learning and control of motor skills. Motor learning issues are examined from a behavioral perspective, and applications are made to teaching, coaching and rehabilitation settings. **Grade Mode:** A.
Restriction(s): Must be Undergraduate Level.
- KNES 410 - Sports Management** Credits 3
The study of people, activities, businesses, and organizations involved in producing, promoting and organizing any sports related business, event, or product. **Grade Mode:** A.
Restriction(s): Must be Undergraduate Level.
- KNES 422 - Biomechanics** Credits 3
The study of biomechanics with respect to the effects of forces, structure, and motion, on and within the human body. Emphasis on both qualitative and quantitative analyses of human movement. **Grade Mode:** A.
Prerequisite(s): KNES 301 and PHSC 111.
Restriction(s): Must be Undergraduate Level.
- KNES 423 - Biomechanics Laboratory** Credit 1
Laboratory application of quantitative analysis of biomechanics with respect to the effects of forces, structure, and motion, on and within the human body. **Grade Mode:** A.
Prerequisite(s): KNES 422 (may be taken concurrently).
Restriction(s): Must be Undergraduate Level.
Course Fee: \$50.
- KNES 430 - Current Issues in Global Health** Credits 3
This course discusses current public health issues and research topics relating to 21st-century challenges and threats, lessons learned, and best practices to strengthen public health systems and enhance public health readiness and preparedness. **Grade Mode:** A.
Prerequisite(s): KNES 310.
Restriction(s): Must be Undergraduate Level.
- KNES 432 - Global Health Ethics and Human Rights** Credits 3
This course highlights the complex interactions between global health, law and human rights, emphasizing the use of human rights in public health thinking and practice. **Grade Mode:** A.
Prerequisite(s): KNES 310.
Restriction(s): Must be Undergraduate Level.
- KNES 434 - Leadership in Sport and Human Movement** Credits 3
A study and application of the core competencies of Transformational Leadership. Contemporary leadership settings in sport, fitness, health promotion and therapy will be given intentional focus. The objective will be to assist leaders and managers to achieve maximum effectiveness in their organizations. Students will have the opportunity to develop the knowledge and capacity to integrate their faith and to apply it to leadership in real life situations in sport and human movement. **Grade Mode:** A.
Restriction(s): Must be Undergraduate Level.
- KNES 440 - Nutrition and Human Metabolism** Credits 3
Theoretical and practical aspects of human nutrition for health and sport. Scientific treatment of applied nutritional principles for health enhancement and successful sport performance. **Grade Mode:** A.
Prerequisite(s): BIOS 281 or equivalent; CHEM 105 or CHEM 120 or equivalent.
Restriction(s): Must be Undergraduate Level.

KNES 442 - Global Communicable Disease Control Credits 3

This course addresses global communicable infectious diseases and their biology, epidemiology, environmental risk factors and control efforts. The course emphasizes the detection, spread, control, and prevention of infectious disease in tropical and developing countries. This is essential training for practitioners of global public health. Using the framework of the Millennium Development Goals, and their successors, the Sustainable Development Goals, the class will explore the prevalence, burden and prevention of HIV, TB and malaria. The course will also cover successful, completed, and ongoing infectious disease eradication campaigns, and discuss why these are necessary to promote and ensure global health equity. **Grade Mode:** A.

Prerequisite(s): KNES 305, KNES 310.

Restriction(s): Must be Undergraduate Level.

KNES 445 - Theology of Work and Vocation Credits 3

This course will explore the place of work within God's kingdom program for history. The contours and major movements in God's program to rule the creation will provide the context for identifying the biblical understanding of the purpose and nature of work in the present age. These major movements include the pattern of work in the initially created order, patterns of work within the theocratic society of Israel, and finally, work redeemed in the truth of Jesus Christ for the present age. Special attention will be given to the place of work in the believer's spiritual formation as the source for being a leader for Christ in the workplace. **Grade Mode:** A.

Restriction(s): Must not be Freshman Class; and must be Undergraduate Level.

KNES 446 - Functional Assessment and the Prescription of Exercise Credits 3

Principles and techniques used to prescribe and design exercise programs for apparently healthy and special populations, including those with medical considerations. Health risk appraisal and physical fitness assessment through the use of field and laboratory tests. **Grade Mode:** A.

Prerequisite(s): KNES 301, KNES 302, KNES 303.

Restriction(s): Must be Undergraduate Level.

KNES 447 - Functional Assessment and Prescription of Exercise Laboratory Credit 1

Laboratory application of quantitative and qualitative assessments of physiological, anatomical, and psychosocial function. Practical experience will guide the development of the exercise prescription.

Grade Mode: A.

Prerequisite(s): KNES 301, KNES 302, KNES 446 (may be taken concurrently).

Restriction(s): Must be Undergraduate Level.

Course Fee: \$50.

KNES 448 - Current Issues in Epidemiology Credits 3

This course focuses on current health issues that are affecting various populations and demographics in the United States and around the world. More specifically, students will examine the public health issues of the past, present, and future and observe how these issues have shaped the practice of epidemiology. Students will also use an ethical decision making model to critic epidemiological studies involving human participants. **Grade Mode:** A.

Prerequisite(s): KNES 305.

Restriction(s): Must be Undergraduate Level.

KNES 449 - Clinical Exercise Physiology Credits 3

This course is intended to train students in the ability to implement prescriptive exercise modalities and programs in a variety of disease and disability states in a clinical or hospital setting. **Grade Mode:** A.

Prerequisite(s): KNES 302, KNES 303.

Restriction(s): Must be Kinesiology (KHPE), Public Health (PBHL), or Health Science (HSCI); and Undergraduate Level.

KNES 453 - Molecular Epidemiology Credits 3

This course explores the impact of these measures on the design, conduct, and analysis of epidemiologic studies by examining applications of molecular tools. Students learn theoretical concepts in molecular epidemiology and the use of biomarkers in epidemiologic studies. Class topics include basics of molecular epidemiology, potential uses and limitations of biomarkers, sample collection and storage, issues in epidemiologic study design and analysis, and discussion of specific research examples involving molecular markers. We also discuss the ethical issues arising from the use of advanced molecular tools in medicine and epidemiology. **Grade Mode:** A.

Prerequisite(s): KNES 305, KNES 315.

Restriction(s): Must be Undergraduate Level.

KNES 454 - Epidemiology of Chronic Disease Credits 3

This course reviews the epidemiology and available methods of prevention for a series of prominent noninfectious diseases. In the first part of the course, chronic disease such as coronary heart disease, stroke, diabetes, hypertension and a general discussion of cancer are discussed. Students present material on a variety of other diseases of their choosing in subsequent sessions. **Grade Mode:** A.

Prerequisite(s): KNES 305, KNES 315.

Restriction(s): Must be Undergraduate Level.

KNES 455 - Outbreak and Emergency Preparedness Credits 3

This course is an intensive introduction to public health emergency preparedness and response and covers a number of topics, including the role of public health in disasters; intentional mass threats; emergency operations planning and exercises; and infectious disease emergency readiness. **Grade Mode:** A.

Prerequisite(s): KNES 305, KNES 310.

Restriction(s): Must be Undergraduate Level.

KNES 457 - Cancer Epidemiology Credits 3

This course is an introduction to cancer epidemiology, highlighting current statistics (in incidence, mortality, and survival) and cancer risk factors (including host and environmental factors). Strategies for cancer prevention and control in the general population and within disproportionately affected populations will also be presented. Additionally, this course will encourage critical thinking about these concepts, covering the use of biomarkers and some controversies on cancer epidemiology research. Students will increase their knowledge of cancer epidemiology and obtain skills needed to interpret and critique research studies in the field of cancer epidemiology. **Grade Mode:** A.

Prerequisite(s): KNES 305, KNES 315.

Restriction(s): Must be Undergraduate Level.

KNES 458 - Health Science Practicum Credit 1

Supervised, professional fieldwork in a community-based health context. Areas covered may include health care, health promotion, health education, health administration, global health, health policy, health advocacy, health research, governmental or non-governmental agency work, pastoral, missionary and/or church health, or similar areas. **Grade Mode:** C.

Prerequisite(s): KNES 200.

Restriction(s): Must be Senior Class; and Undergraduate Level.

KNES 459 - Public Health Policy and Practice**Credits 3**

This course covers an analysis of the government institutions and processes that affect health policy in the American context. The course has two primary goals: (1) to explore how the institutional arrangements of American government work with respect to the development of health policy; and (2) to review several health-policy case studies and identify lessons from them. The course explores fundamental challenges that face all health policymakers—whatever country or its level of economic development—and the array of policy instruments that can be deployed to address them. **Grade Mode:** A.
Restriction(s): Must be Undergraduate Level.

KNES 460 - Topics in Kinesiology and Public Health**Credits 1-3**

Study of topics related to kinesiology and public health in areas such as exercise science, allied health care, current or emerging topics related to public health. The specific material and format will vary by semester and instructor. **Note(s):** May be taken more than once with a different topic. **Grade Mode:** A.

Restriction(s): Must be Undergraduate Level.**Repeat Limit (after first attempt):** 10.**KNES 470 - Seminars in Kinesiology****Credits 1-3**

Seminar related to specific topics in kinesiology in areas such as exercise science and allied health care. **Note(s):** May be taken multiple times for credit with different content. **Grade Mode:** A.

Prerequisite(s): BIOS 254 and BIOS 281, or BIOS 236.**Restriction(s):** Must be Undergraduate Level.**Repeat Limit (after first attempt):** 10.**KNES 475 - Public Health Capstone Practicum****Credits 3**

This public health capstone practicum experience provides students with a structured framework to develop and experience a fieldwork project in a community health setting. Students will work with a community health partner to propose a health intervention for a targeted population. This course is designed to combine students' knowledge and skills related to public health experience and coursework to address public health issues. Students will work through the process of developing, implementing, and evaluating public health interventions. **Grade Mode:** A.

Prerequisite(s): KNES 200; KNES 355 or KNES 432 (may be taken concurrently).**Restriction(s):** Must be Senior Class; and Undergraduate Level.**KNES 480 - Directed Study****Credits 1-3**

Independent work, research, readings and/or professional experiences in the field. **Note(s):** May be taken multiple times for credit. **Grade Mode:** A.

Prerequisite(s): KNES 301, KNES 302, KNES 303.**Restriction(s):** Must be Kinesiology (KHPE); and Undergraduate Level.**Repeat Limit (total number of credits):** 6.**KNES 485 - Internship****Credits 1-3**

Professional experiences in kinesiology, public health, health care, exercise, wellness, sport, or educational settings, with supervision. Documentation of hours and activities performed, with related assignments, must be submitted. **Note(s):** Special approval required. **Grade Mode:** C.

Restriction(s): Must be Junior Class, or Senior Class; and Undergraduate Level.**Repeat Limit (total number of credits):** 6.**KNES 490 - Directed Research in Kinesiology and Public Health****Credits 1-3**

Review of literature, study development, design, laboratory skill/technique, grant/scientific writing techniques, or off site research experience(s) in a specific Kinesiology or Public Health related topic. Course is designed for advanced students to gain specific research, scientific writing, presentation, and publication-related experience(s).

Note(s): Special approval required; requires the development of a tangible research project (proposal, grant, manuscript, completed data set, et cetera). **Grade Mode:** A.**Restriction(s):** Must be Kinesiology (KHPE) or Public Health (PBHL); Junior Class or Senior Class; and Undergraduate Level.**Repeat Limit (total number of credits):** 3.**Course Fee:** \$95.