

THE FIELD

The Department of Kinesiology in the University of Massachusetts School of Public Health and Health Sciences offers an interdisciplinary approach to the study of human movement, investigating the mechanical, neurological, biochemical, physiological and behavior components of human movement. Its four basic elements—biochemistry, biomechanics, motor control, and physiology—are integrated to allow kinesiologists to address a wide variety of questions. Some questions are basic: How are nerves, muscles, and joints coordinated to accomplish complex movements, or what regulates the mixture of fuels oxidized at rest and during exercise? Others have applications to health: How much of what we call aging is actually due to physical inactivity, and how can physical activity be used to prevent and/or manage chronic disease and disability? Still others involve rehabilitation or exercise performance: What factors contribute to musculoskeletal injury and how can they be reversed, and what limits human performance and how can it be optimized? In recent years, the field of kinesiology has evolved toward less emphasis on sport and a much stronger focus on an understanding of human movement and the role of physical activity and exercise in health and disease. To those ends, kinesiologists use tools from molecular biology, neuroscience, engineering, medicine, and computer science to work on unique problems in a diverse array of settings that include laboratories, hospitals, health and wellness centers, and field environments. They are prominent in the health and fitness industry, in the health care system, and in the growing biotechnology industry, particularly in areas related to cardiovascular, musculoskeletal, and metabolic health.

A minor is not available in kinesiology.

THE MAJOR

The major in kinesiology builds on a foundation of basic science in the areas of biology, chemistry, mathematics, physics, and statistics. Kinesiology courses apply these foundation requirements to the scientific study of human movement. Students complete 14 credits of requisite courses, including calculus, physics, and chemistry, as well as 44 credits in core kinesiology courses (KIN 100: Introduction to Kinesiology; KIN 110: Human Performance and Nutrition; KIN 270: Anatomy & Physiology I; KIN 272: Anatomy & Physiology II; KIN 236: Neuromechanics of Human Motion; KIN 247: Physical Activity in Health & Disease; KIN 355: Writing Seminar in Kinesiology; KIN 394A: Applying Kin Concepts to Real-World Health Challenges; Statistics Requirement: Choice of STAT 240, PUBHLTH 223, EDUC 240, RESECON 212 or PSYCH 240; KIN 430: Biomechanics; KIN 440: Physical Activity and Public Health; KIN 460: Movement Neuroscience; and KIN 470: Exercise Physiology). In addition, students choose six credits of kinesiology electives to focus on specific interests within the field.

HONORS

Contact the departmental honors coordinator for information on how to pursue honors opportunities within the major.

STUDY ABROAD

Majors may choose to study abroad if it supports their academic and career goals. Students should contact the International Programs Office (413-545-2710, umass.edu/ipo) and work closely with their academic advisor to choose the appropriate courses in preparation.

CAREER OPPORTUNITIES

An undergraduate degree in kinesiology is excellent preparation for pursuit of an advanced degree that will lead to a career in medicine, research science, physical therapy, or academia. Many kinesiologists also work in the healthcare system, especially in cardiac, pulmonary, and stroke rehabilitation. Increasingly, kinesiologists are providing their specialized expertise to the growing biotechnology industry, particularly in areas related to cardiovascular, musculoskeletal, and metabolic health. Kinesiology majors are prominent in the health and fitness industry and work with manufacturers of sport and rehabilitative equipment. In any area of employment, kinesiology majors will find their rigorous training in scientific method, critical thinking, and clear expression of ideas to be a lifelong advantage.

SCHOOL OF PUBLIC HEALTH AND HEALTH SCIENCES

The School of Public Health and Health Sciences encompasses four undergraduate majors—communication disorders, human nutrition, kinesiology, and public health sciences—all of which focus on enhancing the health and well-being of the public. Students examine nutrition, speech pathology, muscle physiology and mechanics, as well as fitness and wellness. The curriculum provides grounding in the sciences of the human body and takes an interdisciplinary approach to apply that knowledge to the health needs of our communities. Graduates work as researchers, consultants, administrators, therapists, trainers, community health workers, fitness trainers, and other careers related to improving the public's health. Many students pursue graduate work in exercise psychology and biomechanics, speech pathology, audiology, preventive medicine, physical therapy, and other fields.

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