

HEALTH AND EXERCISE SCIENCE (HES)

The purpose of the Health and Exercise Science Department is to advance knowledge through research and to disseminate the knowledge in this field of study through education of and service to humanity. The primary focus of the department is promoting health and preventing and treating disease through healthful behaviors, emphasizing physical activity and nutrition.

All students must complete:

Code	Title	Hours
HES 100	Lifestyles and Health	1

This requirement must be met before enrollment in additional health and exercise science 100 level HES courses, and in any case by the end of the second year.

Contact Information

Health and Exercise Science (<http://college.wfu.edu/hes/>)
 Worrell Professional Center 2164B, Box 7868
 Phone 336-758-5391

Programs

Major

- Health and Exercise Science, B.S. (<https://bulletin.wfu.edu/undergraduate/departments-programs/health-exercise-science/bs-health-exercise-science/>)

Courses

Health and Exercise Science (HES)

HES 100. Lifestyles and Health. (1 h)

A lecture course that deals with the effect of lifestyle behaviors on various health outcomes, including cardiovascular disease, cancer, and sexually-transmitted diseases.

HES 101. Exercise for Health. (1 h)

A laboratory course on physical fitness that covers weight control, cardiovascular endurance, muscular strength, and flexibility.

HES 112. Sports Proficiency. (1 h)

P-POI.

HES 120. Fitness Activities. (1 h)

This course is designed to promote health and well-being through a variety of exercise and skill based activities. The course focuses on providing the knowledge and skills needed for lifetime participation in these activities. Pass/fail only. May be repeated for up to 4 hours of credit if activities differ.

HES 150. Introduction to Health and Exercise Science. (3 h)

A survey course that introduces the interdisciplinary field of health and exercise science. This includes an examination of the scientific basis underlying the core content areas of biomechanics; exercise physiology; epidemiology; health psychology; and nutrition; The role of lifestyle behaviors in the prevention/treatment of chronic disease and physical disability will also be addressed.

HES 232. Emergency Medical Responder. (3 h)

Emergency Medical Response (EMS) is a dynamic 56-hour course featuring lecture, video, simulated emergency situations, discussion and hands-on skill practice based on the national EMS curriculum requirements and educational standards. This course does not provide state licensure or EMT certification but will provide necessary education for service on the campus emergency response team. Clinical hours and Saturday classes are required. Pass/fail only.

HES 262. Statistics in the Health Sciences. (3 h)

Basic statistics with an emphasis on application to research in the health sciences. Students are introduced to graphics and statistical software for statistical analysis. (QR)

HES 265. Medical Terminology. (3 h)

An online course that examines medical terminology and vocabulary used by a variety of professionals in the healthcare field. The focus of this course is on medical and clinical terminology broadly relating to human anatomy and physiology and the basic systems of the human body with added emphasis placed on those terms pertaining to diagnosis and pathophysiology. The bases of medical terms will be examined – such as prefixes, suffixes, roots, combined forms. Pertinent acronyms and abbreviations will also be included.

HES 310. Clinical Research Internship. (1-2 h)

A semester experience in campus- or community-based clinical research program. Students will actively engage with individuals impacted by clinical conditions. The focus is on multiple lifestyle intervention and medical strategies, in conjunction with active participation in therapeutic sessions. Open only to majors. May be repeated for credit. Pass/Fail. P-POI.

HES 312. Exercise and Health Psychology. (3 h)

A survey of the psychological antecedents of exercise and selected topics in health psychology with particular attention to wellness, stress, the biobehavioral basis of coronary heart disease, and the psychodynamics of rehabilitative medicine. P-HES 262 or POI.

HES 320. Mindfulness Meditation in Behavioral Medicine. (2 h)

Study of contemplative science and in the realm of behavioral medicine. Content includes recent evidence from neuroscience and outcome research on both mindfulness-based stress reduction and mindfulness-based cognitive therapy. Taught in a seminar format with laboratory experience. Pass/Fail only. P-POI.

HES 350. Human Physiology. (3 h)

A lecture course which presents the basic principles and concepts of the function of selected systems of the human body, with emphasis on the muscular, cardiovascular, pulmonary, and nervous systems.

HES 350L. Human Physiology Lab. (1 h)

A laboratory course that coincides with HES 350 human physiology lecture course. P or C-HES 350.

HES 351. Nutrition in Health and Disease. (3 h)

Lecture course which presents the principles of healthy nutrition including an understanding of nutrients and their metabolism as well as the impact of nutrition on weight management and chronic diseases. P-HES 350 or POI.

HES 352. Human Gross Anatomy. (4 h)

Lecture/laboratory course in which the structure and function of the musculoskeletal, neuromuscular, pulmonary, and cardiovascular systems are studied using dissected human cadavers.

HES 353. Physiology of Exercise. (3 h)

A lecture course which presents the concepts and applications of the physiological response of the human body to physical activity. Acute and chronic responses of the muscular and cardiorespiratory systems to exercise are examined. P-HES 350 or POI.

HES 354. Assessment Techniques in Health and Exercise Science. (3 h)

A lecture/laboratory course to develop clinical skills and knowledge in the assessment of health in areas of exercise physiology, nutrition/metabolism, biomechanics/neuromuscular function, and health psychology. The laboratory will emphasize use of instrumentation and analysis/interpretation of data collected on human subjects. P-HES 262, HES 350 and 352; or POI. (QR)

HES 355. Exercise Programming. (1.5 h)

Lecture/laboratory course which presents the scientific principles of safe and effective exercise prescription for fitness programs. P-HES 350 or POI.

HES 360. Epidemiology. (3 h)

Introduction to basic epidemiologic principles and methods used to assess disease occurrence and association between risk factors and health outcomes in human populations. Emphasis is placed on modifiable exposures (e.g. diet and physical activity) and chronic disease outcomes. P - An applied statistical methods course, such as ANT 380, BIO 380, BEM 202, HES 262, PSY 311, SOC 271, or STA 111; or POI. (QR)

HES 362. Experimental Design for Clinical and Translational Health Science Research. (3 h)

Examination of scientific methods as applied to Clinical and Translational Health Science Research. Emphasis is placed on understanding the strengths and weaknesses for a broad range of study designs that can be found in the health sciences. Special emphasis is placed on randomized controlled trials, bioethics, the interpretation of data within the context of internal and external validity, as well as skills in reviewing the scientific literature. P - An applied statistics course such as ANT 380, BIO 380, BEM 201, HES 262, PSY 311, SOC 271, or STA 111; or POI.

HES 365. Anatomy and Physiology. (3 h)

A lecture course which presents the basic principles and concepts of the anatomical structures and physiologic functions of selected systems of the human body, with emphasis on the muscular, cardiovascular, pulmonary, and nervous systems. Open only to non-HES majors and does not count toward HES major. POI.

HES 370. Biomechanics of Human Movement. (3 h)

Study of the mechanical principles which influence human movement, sport technique, and equipment design. P-HES 352 or POI.

HES 372. Anatomy Dissection Laboratory. (2 h)

A laboratory course that involves human cadaver dissection of the musculoskeletal, neuromuscular, pulmonary, and cardiovascular systems. Open only to majors. P-POI.

HES 375. Advanced Physiology of Exercise. (3 h)

A lecture course which provides an in-depth examination of the physiological mechanisms responsible for both the acute and chronic changes which occur with exercise. Included are metabolic and cellular changes in response to exercise, as well as the alterations of the major organ systems from acute and chronic exercise training. P - HES 353 or POI.

HES 376. Interventions in Behavioral Medicine. (3 h)

Seminar course providing an overview of the development, implementation, and evaluation of interventions within the context of behavioral medicine. Attention is given to behavior change theories that have served as the framework for physical activity and weight loss interventions. Hands-on experience is included with current interventions through peer counseling and case study analysis.

HES 382. Individual Study. (1-2 h)

Independent study directed by a faculty advisor. The student must consult the advisor before registering for this course. Open only to majors. May be repeated for up to 4 hours of credit. P-POI.

HES 384. Special Topics in Health and Exercise Science. (1-3 h)

Intensive investigation of a current scientific research topic in health or exercise science with focus on a specific topic. May be repeated for credit if topic varies.

HES 386. Honors Research. (2 h)

Directed study and research in preparation for a major paper on a subject of mutual interest to the student and faculty honors advisor. Taken only by candidates for departmental honors. P-POI, approval of departmental honors committee, and prior completion of a 2-hour Individual Study.

HES 388. Field Internship in Health Sciences. (3 h)

An extensive hands-on experience in a discipline of the health sciences related to the student's career goals. This internship occurs outside the Wake Forest University community. Open only to majors. Pass/Fail only. P-POI.

Faculty

Chair Peter H. Brubaker

Associate Chair Gary D. Miller

Professors Peter H. Brubaker, Jeffrey A. Katula, Anthony P. Marsh, Stephen P. Messier, Shannon L. Mihalko, Gary D. Miller

Associate Professor Kristen M. Beavers

Assistant Professors Elliot D. Arroyo, Jason T. Fanning, Megan Irby

Research Professor W. Jack Rejeski

Associate Teaching Professors Edward H. Eaves, Abbie P. Wrights

Assistant Teaching Professor Sergi Garcia-Retortillo

Professor of the Practice Sharon K. Woodard

Associate Professor of the Practice Crystal T. Dixon

Part-time Assistant Professor of the Practice Natascha L. Romeo

Adjunct Assistant Professor Stephanie C. Bunch

Adjunct Lecturers Meghan E. Belanger, Suzanne L. Evans, Dave Lockwood

Teacher-Scholar Post Doc Paige E. Rice

Visiting Assistant Professors Jason Campbell, Claire Newman, Andrew Wells