

# HEALTH & HUMAN SCIENCES (HHSC)

## **HHSC 1550 Human Anatomy and Physiology I (3 semester hours)**

The first part of a two-semester sequence for majors. Comprehensive coverage of anatomy and physiology designed to meet graduate prerequisites for the pre-health professions students. Topics include cell biology; histology; integumentary, skeletal, muscular, and nervous systems. Corequisite: HHSC 1556. HHSC Majors and minors only.

## **HHSC 1556 Human Anatomy and Physiology I Laboratory (1 semester hour)**

Companion laboratory component to accompany HHSC 1550. Comprehensive coverage of anatomy and physiology designed to meet graduate prerequisites for the pre-health professions students. Laboratory histology, experimentation, and dissection of preserved specimens. Corequisite: HHSC 1550. HHSC Majors and minors only. Materials fee Included.

## **HHSC 1700 Personal Health (3 semester hours)**

This course will introduce students to the basics of human health, including physical and psychological well-being, spiritual health, environmental health, nutrition, and exercise. Other health topics will be included. Non-majors or HHSC Minors only. University Core fulfilled: Explorations: Nature of Science, Technology, and Mathematics.

## **HHSC 1900 Exploring Health and Human Sciences Seminar (1 semester hour)**

Introduction to the areas of study and career opportunities within the health sciences and allied health fields. Introduction to the variety of resources available at LMU and the basic necessary skills for a successful college experience. Exposure to information literacy, scientific research, faculty research, and student research opportunities. HHSC Majors only. Credit/No Credit only.

## **HHSC 1910 Medical Terminology (2 semester hours)**

Introduction to the vocabulary, abbreviations, and symbols used in the language of medicine. Emphasis on building medical terms using prefixes, suffixes, and word roots. Upon completion, students should be able to pronounce, spell, and define appropriate medical terminology. HHSC Majors only. Non-majors permitted to enroll upon approval of the Chair.

## **HHSC 1998 Special Studies (1-4 semester hours)**

Special Studies. HHSC majors only.

## **HHSC 1999 Independent Studies (0-5 semester hours)**

Independent Studies. May be repeated for credit. HHSC majors only. Permission of instructor required.

## **HHSC 2300 Nutrition (3 semester hours)**

The study of nutrients and their functions, recommended nutrient intakes, and dietary adequacy while focusing on how to apply this knowledge personally. Emphasis on nutritional roles in health status and chronic disease. Exploration of how behavior change plays a role in nutrition and a healthy lifestyle. HHSC Majors and minors only. University Core fulfilled: Explorations: Nature of Science, Technology, and Mathematics.

## **HHSC 2550 Human Anatomy Physiology II (3 semester hours)**

Continuation course of HHSC 1550 as the second part of a 2-semester sequence. Comprehensive coverage of anatomy and physiology designed to meet graduate prerequisites for the pre-health professions students. Topics include endocrine, blood, cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive systems. The course promotes comprehensive understanding of the structure and function of the human body with an emphasis on organ system integration and homeostasis. Prerequisite: HHSC 1550, HHSC 1556. Corequisite: HHSC 2556. HHSC Majors and Minors only.

## **HHSC 2556 Human Anatomy and Physiology II Laboratory (1 semester hour)**

Companion laboratory component to accompany HHSC 2550. Continuation course of HHSC 1556 as the second part of a 2-semester sequence. Comprehensive coverage of anatomy and physiology designed to meet graduate prerequisites for the pre-health professions students. Topics include endocrine, blood, cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive systems. Laboratory histology, experimentation, and dissection of preserved specimens. Introductory experiences are included towards the acquisition and interpretation of personal physiological data including blood pressure, spirometry, blood typing, hematocrit, and electrocardiography. Prerequisite: HHSC 1550, 1556 Corequisite: HHSC 2550 Materials fee included. HHSC Majors and minors only.

## **HHSC 2780 Science, Nutrition, and Health (3 semester hours)**

The study of nutrients and their functions, recommended nutrient intakes, and dietary adequacy while focusing on how to apply this knowledge personally. Emphasis on nutritional roles in health status and chronic disease. Exploration of how behavior change plays a role in nutrition and a healthy lifestyle. Non-Majors or HHSC Minors only. University Core fulfilled: Explorations: Nature of Science, Technology, and Mathematics.

## **HHSC 2998 Special Studies (1-4 semester hours)**

Special Studies. HHSC majors only.

## **HHSC 2999 Independent Studies (0-5 semester hours)**

Independent Studies. HHSC majors only. May be repeated for credit. Permission of instructor required.

## **HHSC 3100 Health Services for Marginalized Populations (3 semester hours)**

This course will focus on the mental and physical health needs of transitional populations, which include transitional age youth (16-25 years of age), homeless individuals seeking permanent supportive housing, ex-offenders on probation in residential re-entry centers, and veterans seeking stable housing options. All populations are socially and financially vulnerable and may also be struggling with barriers to stability (lack of educational attainment or job training), alcohol/other substance abuse, and depression due to estrangement from friends, family, and/or support networks. Well-being is a complex phenomenon that exists at the intersection of both biologic health and social wellness. As such, this course takes a community health science approach to examining the intersections of individual biological health, broader health systems, and public health. It uses social justice-based, community learning strategies to deepen students' conceptual frameworks, empathy/solidarity, ability to work on team-based projects, and ability to enact social change. Prerequisites: HHSC 2300 or HHSC 2780, HHSC 2550, HHSC 2556, PSYC 1000 Juniors and seniors only. The course will include community-based learning pedagogy and/or engagement with community partners.

**HHSC 3110 Weight Bias (3 semester hours)**

This course will introduce students to the pervasiveness and consequences of weight bias - both overt and subtle forms resulting in health disparities, inadequate access to quality healthcare, and unfair and unequal treatment. Students will gain an understanding of size diversity and weight bias as a public health and social justice issue. Contemporary weight-normative approaches in healthcare will be contrasted with a weight-inclusive approach to health. This course will include a service-learning project and/or engagement with local and virtual organizations involved with health and health promotion. Prerequisites: HHSC 2300 or HHSC 2780 Juniors only. HHSC majors and minors only. The course will include community-based learning pedagogy and/or engagement with community partners.

**HHSC 3120 Physiology of Aging (3 semester hours)**

This course will provide an in-depth exploration of the aging process of humans. Focus on the molecular and physiological aspects of aging, and how it all reflects on clinical and practical aspects of day-to-day life. This course is designed to provide theoretical and practical experience to students willing to work with this population and any health profession. Prerequisites: HHSC 2550 and HHSC 2556. Juniors only. HHSC majors and minors only. The course will include community-based learning pedagogy and/or engagement with community partners.

**HHSC 3130 Medical Bioethics (3 semester hours)**

Bioethics is a field of study directed to the interdisciplinary ethical analysis of the moral dimensions of health professional practice; this includes an analysis of moral character and vision, judgment, decision making, clinical practices, health policies, etc. Toward this end, the goals of this course are: 1) to introduce the wide range of ethical issues in health care; 2) to familiarize students with the bioethical literature that addresses these issues; 3) to develop the basic skills of analysis, interpretation, moral communication, and argument used in bioethics, especially as it affects nurses and physicians, functioning separately and jointly, and 4) to facilitate the application of those habits of thought that integrate bioethics into the intellectual and moral life of physicians and nurses. Juniors only. Majors and minors only. The course will include community-based learning pedagogy and/or engagement with community partners.

**HHSC 3140 Global and Community Health (3 semester hours)**

This course will address all different kinds of health issues in the local community and around the globe. Global and Community Health will address issues on LMU's campus, in Los Angeles, in the United States, and in other regions of the world. These aspects of health include physical, intellectual, social, spiritual, and emotional. The primary topics will be health promotion, disease prevention, health systems, consumer health issues, communicable diseases, and chronic health problems. Each of these issues will be addressed from the perspective of each of the communities previously stated. Critical thinking will be a major component of this course, and ethical and environmental considerations will also be addressed. The topics will be timely and applicable to current health concerns around the globe. There will also be a focus on health promotion and how best to address the health concerns in the variety of communities discussed. Juniors only. Majors and minors only. The course will include community-based learning pedagogy and/or engagement with community partners.

**HHSC 3150 Exercise for Special Populations (3 semester hours)**

Exploration of contemporary chronic disorders and disabilities, including etiology, epidemiology, pathophysiology, pharmacology, and the study of effects and benefits of exercise on attenuation of these conditions. There will be a special focus on maintaining and improving fitness in older adults, particularly those with reduced mobility. Prerequisites: HHSC 2550, HHSC 2556. Juniors only. Majors and minors only. The course will include community-based learning pedagogy and/or engagement with community partners.

**HHSC 3220 Public Health (3 semester hours)**

This course will explore, apply, and critique the theoretical foundations of public and allied health programs and their applications in varied settings and among diverse populations. The course will focus on the theoretical determinants of health and health-related behavior from the individual to the environmental level and consider intervention strategies that are theoretically grounded. Juniors and seniors only. Majors and minors only.

**HHSC 3600 Upper Extremity Evaluation (3 semester hours)**

In-depth instruction on anatomy and functional abilities of the upper extremity. Emphasis on the assessment techniques for recognizing and evaluating athletic-related injuries. Additional concentration on the cervical region and postural issues of the spine will be addressed. Prerequisites: HHSC 1550, HHSC 1556. Majors and minors only. Juniors and seniors only.

**HHSC 3610 Lower Extremity Evaluation (3 semester hours)**

In-depth instruction on anatomy and functional abilities of the lower extremity. Emphasis on the assessment techniques for recognizing and evaluating athletic-related injuries. Additional concentration on the thoracic, lumbar, and sacral regions of the spine and gait analysis will be addressed. Prerequisite: HHSC 3600. Juniors and seniors only. Majors and minors only.

**HHSC 3750 Exercise Physiology (3 semester hours)**

In-depth exploration of the acute and chronic changes to physiology that occur with exercise. The focus is on the cardiovascular respiratory, muscular, and endocrinology systems including the study of metabolism and fuel sources. Prerequisites: HHSC 2550, HHSC 2556. Corequisite: HHSC 3756 Juniors and seniors only. Majors and minors only.

**HHSC 3756 Exercise Physiology Laboratory (1 semester hour)**

This course is the laboratory component to accompany HHSC 3750: Exercise Physiology. Measurement of the physiological mechanisms responsible for adaptations to acute and chronic exercise. Develop fitness assessment techniques and their applications to health and exercise performance. Gain hands-on experience with equipment/instrumentation. Prerequisites: HHSC 2550, HHSC 2556. Corequisite: HHSC 3750 Juniors and seniors only. Majors and minors only. Materials fee included.

**HHSC 3800 Kinesiology (3 semester hours)**

This course examines the human body in motion utilizing the principles of anatomy, physiology, and mechanics in relation to human movement. Topics in this course include the application of principles of mechanics to anatomical systems; neuromuscular basis of movement, analysis of skills used in exercise science and by the physically active. Prerequisites: HHSC 1550, HHSC 1556. Juniors and seniors only. Majors and minors only.

**HHSC 3900 Health and Human Sciences Teaching (0-1 semester hours)**

Guided teaching of undergraduate laboratories. HHSC Majors only. May be repeated for credit. Credit/No-Credit grading. Permission of instructor required.

**HHSC 3950 Allied Health Internship I (1 semester hour)**

Clinical, hands-on, and/or observational experience for 60 hours per unit in an allied health setting such as: hospital, clinic, or health facility. Guided instruction on professional development and graduate school preparation. For majors/minors with four or less semesters remaining until graduation. Juniors and seniors only. HHSC Majors and minors only. University Core fulfilled: Flag: Engaged Learning. Permission of instructor required.

**HHSC 3970 Allied Health Internship II (1-5 semester hours)**

Clinical, hands-on, and/or observational experience for 60 hours per unit in an allied health setting such as: hospital, clinic, or health facility. Majors and minors only. Prerequisite: HHSC 3950 or concurrent enrollment. Juniors and seniors only. May be repeated for credit. A maximum of 5 units can be completed for credit. Credit/No-credit only. Permission of instructor required.

**HHSC 3998 Special Studies (1-4 semester hours)**

Special Studies. Juniors and seniors only. HHSC majors and minors only. Permission of instructor required.

**HHSC 3999 Independent Studies (0-5 semester hours)**

Research activities mentored by Health and Human Sciences faculty other approved independent studies. Letter grading option contingent upon generation and/or dissemination of work. Majors and minors only. May be repeated for credit. A maximum of 5 units can be completed for credit. Permission of instructor required.

**HHSC 4100 Epidemiology (3 semester hours)**

Epidemiology is the study of health, illness, and associated factors at the population level. Overview of the history of the discipline, association and causality, and exploration of cross-sectional and case-control research will be completed to understand the epidemiological basis for preventative medicine. Emphasis on study design, data and specimen collection, and data analysis. Prerequisite: MATH 204 or MATH 205. Juniors and seniors only. Majors and minors only.

**HHSC 4106 Epidemiology Laboratory (1 semester hour)**

Epidemiology is the study of health, illness, and associated factors at the population level. This laboratory is an introduction to the statistical methods used in epidemiology and related fields, and is designed to provide students with a firm grounding in the logic and models of hypothesis testing that are commonly used and encountered in clinical, public health, epidemiological and experimental research. The course consists of readings, class lectures, and computer and data analysis assignments. The data analysis assignments will be conducted using the SAS for Windows statistical package available to students in the computer lab. Prerequisites: MATH 204 or 205. Corequisites: HHSC 4100. Juniors and seniors only. Majors and minors only.

**HHSC 4150 Healthcare Delivery Systems (3 semester hours)**

Mandatory entry-level course for 4+1 students in Healthcare Systems Engineering M.S. program and other students transitioning from non-healthcare fields. History, cultural tradition, and operations of U.S. private, non-profit, hybrid, and government healthcare delivery systems, including discussion of the multifaceted U.S. trauma care system and the U.S. system for mass casualty events. Case study discussions emphasizing the quality and ethical issues challenging the U.S. healthcare system today and its comparative performance amongst the industrialized world. Additional important themes of medical professionalism, and the profession's social contract with society as central to the culture of healthcare professionals and administrators functioning within systems of care. Costs and payment systems. Successes and challenges in modern healthcare. Introduction to: electronic records and their portability; Health Insurance Portability and Accountability Act; technology (e.g., surgical robots) and integrated systems. Review of quality, safety, and regulatory systems. Non-U.S. healthcare delivery systems. Medical and healthcare jargon. Provider burnout. Majors and minors only. Senior standing only.

**HHSC 4600 Therapeutic Modalities in Sports Medicine (3 semester hours)**

Provides information regarding the physics and physiological effects of athletic training modalities. Gain understanding of the inflammatory process and pain management in relation to athletic injuries. Includes the physiological reactions, contraindications, and indications to such modalities as heat, cold, electricity, ultrasound, water, and massage. Instruction on proper use and application of specific modalities. Prerequisites: HHSC 2550, HHSC 2556. Corequisite: HHSC 4606. Juniors and seniors only. Majors and minors only.

**HHSC 4606 Therapeutic Modalities in Sports Medicine Laboratory (1 semester hour)**

This course is the laboratory component to accompany HHSC 4600: Therapeutic Modalities in Sports Medicine. This class will focus on the practical aspect of modalities. These modalities include: heat and cold, ultrasound, electrotherapy, laser, and compression, among others. Prerequisites: HHSC 2550 and HHSC 2556. Corequisite: HHSC 4600. Juniors and seniors only. Majors and minors only. Materials fee included.

**HHSC 4610 Therapeutic Rehabilitation in Sports Medicine (3 semester hours)**

Instruction on how to design, implement, and supervise rehabilitation programs for sports-related injuries and conditions. Theoretical and clinical bases for the use of therapeutic exercises, basic biomechanics, indications, contraindications, and proper application of exercises in therapeutic rehabilitation. Prerequisites: HHSC 2550, HHSC 2556 and HHSC 3600. Corequisite: HHSC 4616. Juniors and seniors only. Majors and minors only.

**HHSC 4616 Therapeutic Rehabilitation in Sports Medicine Laboratory (1 semester hour)**

This course is the laboratory component to accompany HHSC 4610: Therapeutic Rehabilitation in sports Medicine. Students will engage in learning the application of practical aspects of therapeutic rehabilitation exercises, including range of motion, stretching, joint mobilization, strengthening, cardiorespiratory, core, proprioception, and plyometric among others. Students will design a comprehensive rehabilitation program for sport-related injuries. Prerequisite: HHSC 2550, HHSC 2556, and HHSC 3600. Corequisite: HHSC 4610. Juniors and seniors only. Majors and minors only. Materials fee included.

**HHSC 4705 EKG Interpretation (3 semester hours)**

Introduction to electrocardiography. Basic concepts of EKG interpretation, including electro-physiology, arrhythmia identification, and electrode placement for both resting and graded exercise testing. Content is consistent with skills necessary to prepare students as a certified EKG technician by the National Healthcareer Association. Prerequisite: HHSC 3750, HHSC 3756. Corequisite: HHSC 4706. Juniors and seniors only. Majors and minors only.

**HHSC 4706 EKG Interpretation Laboratory (1 semester hour)**

This course is the laboratory component to accompany HHSC 4705: EKG Interpretation. Basic concepts of EKG interpretation, including electro-physiology, arrhythmia identification, and electrode placement for both resting and graded exercise testing. Content is consistent with skills necessary to prepare students as a certified EKG technician by the National Healthcareer Association. Prerequisite: HHSC 3750, HHSC 3756. Corequisite: HHSC 4705. Juniors and seniors only. Majors and minors only. Materials fee included.

**HHSC 4750 Scientific Principles of Strength and Conditioning (3 semester hours)**

Scientific Principles of Strength and Conditioning is intended to introduce the science and physiology behind strength training and conditioning. Oftentimes the strength and conditioning issues are misunderstood due to common popular myths. Sound scientific principles will be used to dispel such ideas. A variety of strength training and conditioning topics will be covered to prepare a student who is interested in becoming a Certified Strength and Conditioning Specialist (CSCS) or a Certified Personal Trainer (CPT) through the National Strength and Conditioning Association (NSCA). Prerequisites: HHSC 2550, HHSC 2556 and HHSC 3800. Corequisites: HHSC 4756. Juniors and seniors only. Majors and minors only. Materials fee included.

**HHSC 4756 Strength Physiology and Assessment Laboratory (1 semester hour)**

This course is the laboratory component to accompany HHSC 4750: Scientific Principles of Strength and Conditioning. This class will focus on the practical aspect of modalities, laboratory experiences in exercise technique, assessment, and instruction methodologies. Students will gain the requisite applied skills and experiences necessary to become recognized by the National Strength and Conditioning Association (NSCA) as a Certified Strength and Conditioning Specialist (CSCS). Prerequisite: HHSC 2250, HHSC 2556, and HHSC 3800. Corequisites: HHSC 4750. Juniors and seniors only. Majors and minors only. Materials fee included.

**HHSC 4800 Biomechanics (3 semester hours)**

An analytical approach to the mechanics of human motion. Kinetics and kinematics of human movement as it pertains to bone, joint cartilage, and connective tissue will be discussed. Consideration towards the forces at major points of the human body and their relations to musculoskeletal injuries. Prerequisites: HHSC 1550, HHSC 1556. Corequisite: HHSC 4806. Juniors and seniors only. Majors and minors only.

**HHSC 4806 Biomechanics Laboratory (1 semester hour)**

This course is the laboratory component to accompany HHSC 4800: Biomechanics. This course will apply and measure mechanical concepts in relation to the human body and human movement. Topics in this course include kinematic and kinetic concepts, linear and angular motion, and applying Newton's Laws to human movement. In particular, the course draws from principles of anatomy, physiology, and mechanics to measure the variables of human movement. Prerequisite: HHSC 1550 and HHSC 1556. Corequisites: HHSC 4800. Juniors and seniors only. Majors and minors only. Materials fee included.

**HHSC 4998 Special Studies (1-4 semester hours)**

Special Studies. Juniors and seniors only. Majors and minors only.

**HHSC 4999 Independent Studies (0-5 semester hours)**

Independent Studies Majors and minors only. Permission of instructor required. Juniors and seniors only. May be repeated for credit.

**HHSC 5999 Independent Studies (0-5 semester hours)**

Independent Studies. Graduate standing only. May be repeated for credit. Permission of instructor required.