

Advanced Core Medical Science (ACMS)

Course information contained within the Bulletin is accurate at the time of publication in June 2025 but is subject to change. For the most up-to-date course information, please refer to the Course Catalog.

ACMS 4004. Fundamentals of Physiology for Pre-Health Postbaccalaureates. 4 Credit Hours.

Fundamentals of Physiology addresses important topics including membranes and membrane transport, excitation and contraction of skeletal, smooth and cardiac muscle, the heart and blood flow, renal physiology and lung physiology. Important medically related examples will be discussed. Course syllabus will be provided by the course director.

Repeatability: This course may not be repeated for additional credits.

ACMS 4005. Fundamentals of Physiology Lab for Pre-Health Postbaccalaureates. 1 Credit Hour.

This course is designed for pre-Physician Assistant students enrolled in the Advanced Core Health Sciences program and provides hands-on laboratory exercises related to the various body systems. The laboratory exercises will expose students to the cardiovascular, digestive, excretory, hematopoietic, neurological, and respiratory systems. Students will conduct laboratory activities designed to emphasize the function and measurement of outputs of each system. Students are expected to complete both pre- and post-laboratory written exercises.

Co-requisites: ACMS 4004.

Repeatability: This course may not be repeated for additional credits.

ACMS 4006. Cellular and Molecular Basis of Immunology and Microbiology for Pre-Health Postbaccalaureates. 4 Credit Hours.

This course is designed for upper level undergraduates and will cover the fundamentals of human immunology and pathogenic microbiology. Students should have taken as prerequisites college level biology and chemistry. The course does not assume any prior knowledge of either microbiology or immunology. Topics will cover the basic material needed to achieve high scores on the MCAT and other standardized tests required for admission to professional degree programs. A wealth of interesting and relevant areas will be covered in the course including the organization, function, and regulation of innate and adaptive immune responses; diseases associated with malfunction of the immune system such as allergy and autoimmunity, and immune-based therapies (for Cancer and Arthritis). The course will also cover the disease syndromes and the molecular and biochemical characteristics of significant pathogenic bacteria, viruses, fungi and parasites. Topics will include, among others, bacterial toxins, Tuberculosis, sexually transmitted diseases, Malaria, and Lyme disease.

Repeatability: This course may not be repeated for additional credits.

ACMS 5003. Fundamentals of Biochemistry. 4 Credit Hours.

Repeatability: This course may not be repeated for additional credits.

ACMS 5004. Fundamentals of Physiology. 4 Credit Hours.

Fundamentals of Physiology addresses important topics including membranes and membrane transport, excitation and contraction of skeletal, smooth and cardiac muscle, the heart and blood flow, renal physiology and lung physiology. Important medically related examples will be discussed. Course syllabus will be provided by the course director.

Repeatability: This course may not be repeated for additional credits.

ACMS 5006. Microbiology and Immunology. 4 Credit Hours.

Repeatability: This course may not be repeated for additional credits.

ACMS 5007. Human Anatomy. 4 Credit Hours.

Human Anatomy provides instruction in gross anatomy for postbac students. Important medically related examples will be discussed. Course syllabus will be provided by the course director.

Repeatability: This course may not be repeated for additional credits.

ACMS 5008. Medical Pharmacology. 4 Credit Hours.

Medical Pharmacology provides instruction in pharmacology for postbac students. Important medically related examples will be discussed. Course syllabus will be provided by the course director.

Repeatability: This course may not be repeated for additional credits.

ACMS 5010. Special Topics in Medicine. 2 to 3 Credit Hours.

Special Topics in Medicine discusses important topics in medicine including translational research and evidence based medicine for postbac students. Course syllabus will be provided by the course director.

Repeatability: This course may be repeated for additional credit.

ACMS 5011. Case-based Clinical Problem Solving. 1 Credit Hour.

A crucial component in training pre-medical students to become effective physicians is developing interactive skills, specifically meaningful patient history taking. This course provides students at the Lewis Katz School of Medicine the opportunity to interact with and receive feedback from standardized patients. Furthermore, the encounter permits the design of learning experiences that integrate the students' understanding of basic science principles with clinical reasoning. This course consists of two parts. The first part provides students with the basic tools for interviewing patients and taking their history. This is accomplished by use of self-study, lectures and one on one interaction with standardized patients. During the second part of the course, students working in teams on specially designed clinical cases reason through and present their diagnosis and reasoning to the class. Included in the clinical case is a session with the simulation mannequins who will be programmed with the appropriate disease characteristics.

Repeatability: This course may not be repeated for additional credits.