PHYSIOLOGY (PHYO)

PHYO 3450. Applied Physiology. 3 Clock Hours.
A systematic approach to the understanding of normal human body's various coordinated functions, such as muscle, cardiovascular, nervous, respiratory, gastrointestinal, renal and endocrine systems will be introduced. The mechanism(s) that regulates individual systems will be discussed. The interrelationship between organ systems such as kidney and heart will be explained. Finally the effects of exercise on organ system, such as cardiovascular system and muscle will be emphasized.
Course Type: Lecture

PHYO 5012. Basic Neurophysiology. 2 Clock Hours.
Introductory neurophysiology, including discussion of sensory pathways reflex responses, and motor systems. Sleep and wakefulness and selected aspects of nervous system development will also be considered.
Course Type: Lecture

PHYO 5016. Human Physiology. 6 Clock Hours.
Prerequisites: Permission of the instructor A course in biochemistry or cell physiology is particularly recommended. A systemic study of the function of various organ systems of the body, including the nervous, cardiovascular, pulmonary, renal, gastrointestinal and endocrine systems, with special emphasis on control systems in the body.
Course Type: Lecture

PHYO 5017. Medical Physiology. 7 Clock Hours.
A systematic coverage of the basic mechanisms and functions of the human body, including cardiovascular, respiratory, renal, gastrointestinal, endocrine and reproductive systems, and their economy in health and disease.
Course Type: Lecture

PHYO 5823. Advanced Exercise Physiology. 3 Clock Hours.
Advanced study of physiological responses, regulatory mechanisms and adaptations of human performance and health; factors affecting performance and health; and training and evaluative techniques. Cross-listed with Norman Campus HSS 5823.
Course Type: Lecture

PHYO 5873. Clinical Exercise Physiology. 3 Clock Hours.
Exercise is examined as an important clinical evaluation and management method. Recent investigations and reviews in physiology and medicine are emphasized in study of the body's responses to exercise stress in the health-disease continuum. Primary focus is given to the mechanisms explaining pathophysiological processes that can be affected by exercise.
Course Type: Lecture

PHYO 5960. Directed Readings. 1-4 Clock Hours.
May be repeated with change of content; maximum credit 8 hours. Individual readings, not for thesis purposes, of some special selected topics.
Course Type: Discussion

PHYO 5971. Seminar. 1 Clock Hour.
May be repeated; maximum credit 99 hours. Required for all physiology majors. Weekly presentation of research from inside and outside the health sciences center.
Course Type: Lecture

PHYO 5980. Research For Masters Thesis. 1-4 Clock Hours.
May be repeated; maximum credit 99 hours. Research For Masters Thesis
Course Type: Independent Study

PHYO 5990. Special Studies. 1-6 Clock Hours.
May be repeated; maximum credit 594 hours. Individual investigation, other than thesis, of some special problem elected or designed. Most of the time is to be spent in the laboratory.
Course Type: Independent Study

PHYO 6201. Behavioral Neuroscience. 1 Clock Hour.
Prerequisites: Admission into Graduate Program in Biomedical Sciences/ Permission of instructor. Crosslisted: PSBS 6201 and OCNS 6201 This course is designed for graduate students who wish to explore a specific topic related to behavioral neuroscience, such as neural plasticity.
Course Type: Lecture

PHYO 6303. Advanced Systemic Physiology. 3 Clock Hours.
This course is aimed at providing in depth an exposure to selected topics in cardiovascular, endocrine, renal and respiratory physiology. The material to be covered will build upon a background taught in the medical physiology course. Lecture, discussion, and selected laboratory exercises will provide the course format.
Course Type: Lecture

PHYO 6311. Neuroimmunology and Neuroinflammation. 1 Clock Hour.
Prerequisites: Admission into Graduate Program in Biomedical Sciences/ Permission of instructor. Crosslisted: OCNS 6311 This course explores the intricacies of neuroimmune interaction and the consequences of inflammation within the central and peripheral nervous systems.
Course Type: Lecture

PHYO 6313. The Cardiovascular System: Structure, Function and Dynamics. 3 Clock Hours.
Mammalian cardiovascular system, emphasizing its integrating and regulatory functions.
Course Type: Lecture

PHYO 6323. Advanced Topics: Exercise Physiology and Medicine. 3 Clock Hours.
Exercise from the perspective of specific organ systems will be taught, as well as the applied physiology of rehabilitative, preventative and diagnostic exercise in medicine today.
Course Type: Lecture

PHYO 6333. Body Fluids and Renal Function. 3 Clock Hours.
A discussion of basic renal mechanisms involved in the regulation of body fluids. Areas to be discussed include renal techniques, cellular and sub-cellular mechanisms, regulatory processes, and effects of perturbations. Both classical and current findings will be discussed.
Course Type: Discussion

PHYO 6341. Molecular Signaling and Regulation. 1 Clock Hour.
Prerequisite: GPIBS Core Curriculum or permission of Instructor. Crosslisted: BIOC 6341 and CELL 6341 - Biochemistry and Molecular Biology Topics. Current understanding of the biochemistry and molecular biology of regulation at the gene, cell, and organism level.
Course Type: Lecture

PHYO 6343. Cell Physiology. 3 Clock Hours.
Physiologic functions of the cell and the importance of those functions in assuring the viability of cells and organisms. Topics which will be considered include: membrane and epithelial transport, electrophysiology, membrane receptors, regulation of cell volume and ph, cell to cell communication and cell motility. Current and classical research publications will be analyzed.
Course Type: Lecture

PHYO 6353. Experimental Studies in Respiration. 3 Clock Hours.
A discussion of the findings of current research in the area of respiration physiology; clinical concepts are also discussed. Areas to be considered include gas exchange, pulmonary mechanics, control of breathing, non-respiratory functions of the lungs and development of the respiratory system.
Course Type: Lecture

PHYO 6363. Muscle Physiology. 3 Clock Hours.
Factors affecting the activity of the three types of muscle including the effects of physical activity on other physiological processes.
Course Type: Lecture

PHYO 6373. Neurophysiology. 3 Clock Hours.
A systematic study of peripheral and central components of the nervous system with emphasis on electrophysiologic and ionic characteristics of cells, synaptic transmission, the visual and auditory sensory systems, the autonomic nervous system, and higher brain function.
Course Type: Lecture

PHYO 6383. Molecular and Cellular Endocrinology. 3 Clock Hours.
Advanced topics in cellular and molecular endocrinology including: recent advances in peptide/protein hormone biosynthesis, eicosinoid and steroid biosynthesis; membrane and nuclear hormone receptor structure/function, signal transduction mechanisms, and genetic disorders of endocrine systems.
Course Type: Lecture

PHYO 6393. Gastrointestinal Physiology and Nutrition. 3 Clock Hours.
Systematic analysis of the functional aspects of the gastrointestinal tract and associated organs. Functions to be discussed include motility, secretion, digestion and absorption emphasis is on underlying cellular and sub-cellular mechanisms.
Course Type: Lecture

PHYO 6401. Genes to Physiology. 1-5 Clock Hours.
Prerequisites: GPIBS Core Curriculum or permission of instructor. May be repeated; maximum credit 5 hours. Cross listed: OCNS 6401. Molecular and cellular processes that underline designated physiological systems or functions.
Course Type: Lecture

PHYO 6403. Advanced Biology of Aging. 3 Clock Hours.
Prerequisites: PHYO 5016 or by permission of the course director This course is designed to give students an overview of the aging process, discuss major theories of aging and identify and analyze trends and topics in modern aging research. Students will be introduced to the cellular and molecular process underlying both "healthy" aging and the development of age-related diseases while examining potential interventions and treatments that extend mammalian healthspan and lifespan.
Course Type: Lecture

PHYO 6407. Integrative Aspects of Physiological Systems. 7 Clock Hours.
Using a combination of instructor presentations, student presentations, and class discussion, the course will establish background knowledge in selected areas of systemic physiology, then consider contemporary issues in those areas. Chosen topics are highly integrative with respect to concepts and methods in modern biology and demonstrate integration among physiological systems.
Course Type: Discussion

PHYO 6980. Research for Doctors Dissertation. 1-16 Clock Hours.
May be repeated; maximum credit 99 hours. Research Dissertation Credit hours vary.
Course Type: Independent Study

PHYO 8600. Medical Physiology. 109 Clock Hours.
May be repeated; maximum credit 218 hours. A systematic coverage of the basic mechanisms and functions of the human body, including cardiovascular, respiratory, renal, gastrointestinal, endocrine, and reproductive, and nervous systems. Emphasis is on clinical applications and the development of interpretive skills.
Course Type: Lecture

PHYO 9980. Special Studies. 1-320 Clock Hours.
Elective. May be repeated with change of subject matter. Topics of special nature or of unusual interest to the individual student.
Course Type: Lecture