

Molecular Physiology and Biophysics Courses (MPB)

MPB Courses

This is a list of courses with the subject code MPB. For more information, see Molecular Physiology and Biophysics (Carver College of Medicine) in the Catalog.

MPB:4199 Research, Independent Study **arr.**

Recommendations: closed to molecular physiology and biophysics graduate students.

MPB:5153 Graduate Physiology **4 s.h.**

Principles of human physiology, organ systems, cell function. Offered fall semesters. Requirements: grades of C- or higher in BIOL:1411 and CHEM:2210 and CHEM:2220, and graduate standing.

MPB:5200 Medical Physiology Online **5 s.h.**

Fundamental principles of cellular membranes, muscle, sensory organs, motor neurological systems, autonomic nervous systems, cardiovascular, pulmonary, renal, gastrointestinal, endocrine, and reproductive systems; interdependence of organ systems to maintain a normal physiological state using clinical correlates as applied to humans; basic physiological principles that establish a solid foundation for future pathophysiological and pharmacological concepts. Recommendations: medical, dental, physician assistant, nurse anesthesia, physical therapy, or graduate standing.

MPB:5201 Advanced Physiology Online **3 s.h.**

Examination of cellular and organ systems of medical physiology; fundamental principles of cellular membranes including muscle, sensory organs, motor neurological systems, autonomic nervous system, cardiovascular, pulmonary, renal, gastrointestinal, endocrine, and reproductive physiology; emphasis on interdependence of organ systems to maintain a normal physiological state (homeostasis) using clinical correlates as applied to humans; basic physiological principles that establish a solid foundation for future pathophysiological and pharmacological concepts.

MPB:5241 Neuromuscular Diseases: Case-Based Seminar **1 s.h.**

MPB:6209 Steroid Receptor Signaling **1 s.h.**

Structure-function relationship and genomic and nongenomic actions of the steroid hormone receptor family; basis for actions of novel new ligands on these receptors. Offered spring semesters of even years. Same as NSCI:6209, PCOL:6209.

MPB:6220 Mechanisms of Cellular Organization **3 s.h.**

Current understanding of basic cell biological processes; key experiments that led to guiding insights; mechanisms that cells use for compartmentalization and how those mechanisms are regulated; biogenesis of major organelles (e.g., mitochondria, peroxisomes, nucleus, secretory/endocytic membrane system); functions of cytoskeleton in cell motility, organelle motility, and cell division. Prerequisites: BMB:3130. Same as ACB:6220, MMED:6220.

MPB:6225 Growth Factor Receptor Signaling **1 s.h.**

Mechanisms of signaling by growth factors; cytokines and related molecules that regulate cell proliferation, development, differentiation, and survival; emphasis on molecular mechanisms of signaling, relevance of these signaling processes to various human diseases. Same as ACB:6225, MMED:6225, PCOL:6225.

MPB:6226 Cell Cycle Control **1 s.h.**

Cell cycle regulation, DNA damage-dependent cell cycle regulation, redox-dependent cell cycle regulation, cellular senescence. Same as ACB:6226, MMED:6226.

MPB:6227 Cell Fate Decisions **1 s.h.**

Cellular fate decisions including signal integration, terminal differentiation in development, mechanisms of embryonic stem cell gene regulation/cellular reprogramming, cell death paradigms, and cell death in development and cancer. Same as ACB:6227, MMED:6227.

MPB:6265 Neuroscience Seminar **0-1 s.h.**

Research presentations. Same as ACB:6265, BIOL:6265, NSCI:6265, PSY:6265.

MPB:6302 Research Physiology and Biophysics **arr.**

Requirements: molecular physiology and biophysics graduate standing.

MPB:7402 Thesis **arr.**

Requirements: molecular physiology and biophysics Ph.D. candidacy.

MPB:8115 Human Physiology for Dental Students **4 s.h.**

Principles of human physiology, organ systems, cell function. Offered fall semesters. Requirements: grades of C- or higher in BIOL:1411, CHEM:2210, and CHEM:2220; and D.D.S. enrollment.