**MOLECULAR AND CELLULAR PHARMACOLOGY (MCP)**

**MCP 701. Seminar. 2 Credit Hours.**
Review of related literature, discussion of special topics, student presentations and attendance of faculty/department seminars. Course may be repeated for a total of eight credits.

**Components:** SEM.
**Grading:** GRD.
**Typically Offered:** Fall & Spring.

**MCP 704. Mechanisms of Drug Action. 3 Credit Hours.**
This course consists of a combination of lectures, problem sessions and student presentations. Students will be given in-depth exposure to the fundamental principles of Pharmacology. The mechanism of action of some specific drug classes will be examined in detail.

**Components:** LEC.
**Grading:** GRD.
**Typically Offered:** Spring.

**MCP 720. Research in Residence. 0 Credit Hours.**
Used to establish research in residence for the thesis for the master’s degree after the student has enrolled for the permissible cumulative total in MCP 710 (usually six credits). Credit not granted. May be regarded as full time residence.

**Components:** LEC.
**Grading:** GRD.
**Typically Offered:** Fall, Spring, & Summer.

**MCP 731. Special Topics. 1-6 Credit Hours.**
Directed readings on subjects not ordinarily treated in depth in specific courses. Course may also consist of special laboratory problems.

**Components:** LEC.
**Grading:** GRD.
**Typically Offered:** Fall, Spring, & Summer.

**MCP 732. Cardiovascular Pharmacology. 2-3 Credit Hours.**
The course covers cardiovascular pharmacology, necessary cardiovascular physiology and anatomy and the function and pharmacology of the autonomic nervous system. The students learn about the function and energetics of the heart and how it is changed in cardiac disease.

**Components:** LEC.
**Grading:** GRD.
**Typically Offered:** Fall.

**MCP 752. Cell Signaling I: Intracellular Signal Transduction. 3 Credit Hours.**
Most therapeutic drugs exert their action by influencing cellular signal transduction processes. This course provides an in-depth molecular level review of the fundamental signal transduction mechanisms that regulate cell growth, cell proliferation, checkpoint response to cell stressors, cell morphogenesis and differentiation, and their role in the onset of disease.

**Components:** LEC.
**Grading:** GRD.
**Typically Offered:** Spring.

**MCP 753. Cell Signaling 2: Cell-to-Cell Communication and Development. 3 Credit Hours.**
This course focuses on receptors and signaling pathways that govern cellular responses to extrinsic signals. It concentrates on specifics of signaling events in selected biological systems such as CNS, endocrine system, cardiac and hematopoietic stem cells.

**Components:** LEC.
**Grading:** GRD.
**Typically Offered:** Spring.

**MCP 768. Neuropharmacology. 2-3 Credit Hours.**
An intensive course covering the regulation of neural processes by drugs that target neurotransmitter signaling at the level of GPCRs, G proteins, second-messengers and ion channels.

**Components:** LEC.
**Grading:** GRD.
**Typically Offered:** Fall.

**MCP 830. Dissertation Research-Pre-Candidacy. 1-12 Credit Hours.**
Required for all PhD candidates. The student will enroll for credits as determined by their advisor/Office of Graduate and Postdoctoral Studies. No more than 12 hours of research may be taken in a regular semester, and no more than six in a summer session.

**Components:** THI.
**Grading:** SUS.
**Typically Offered:** Fall, Spring, & Summer.

**MCP 840. Doctoral Dissertation- Post Candidacy. 1-12 Credit Hours.**
Required for all PhD candidates. The student will enroll for credits as determined by their advisor/Office of Graduate and Postdoctoral Studies but not less than a total of 24. No more than 12 hours of research may be taken in a regular semester, and no more than six in a summer session.

**Components:** THI.
**Grading:** SUS.
**Typically Offered:** Fall, Spring, & Summer.

**MCP 850. Research in Residence. 1 Credit Hour.**
Student must be registered in the semester they plan to defend. Used to establish research in residence for the PhD after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Student may be regarded as full-time residence as determined by the Dean of the Graduate School.

**Components:** THI.
**Grading:** SUS.
**Typically Offered:** Fall, Spring, & Summer.