

Master of Science Curriculum - COLLEGE OF PHARMACY

To graduate, students must complete a minimum of 40 credit hours including 8 credit hours of the two core courses, 8 credit hours of Graduate Seminar, 4 credit hours of Electives, and 20 credit hours of Research and Thesis.

Required core courses

Course Title	Catalog #	Semester	Semester Credits
Advanced Pharmaceutical Sciences I (APS I)		Fall	4
Advanced Pharmaceutical Sciences II (APS II)		Spring	4

Required non-core courses

Research and Thesis		Fall/Spring	5
Graduate Seminar		Fall/Spring	2

Elective courses

Novel Dosage Forms		Fall/Spring	4
Advanced Pharmacology		Fall/Spring	4
Advanced Pharmacokinetics		Fall/Spring	4
Advanced Immunology/Mol Bio		Fall/Spring	4

Advanced Pharmaceutical Sciences I (APS I)

General overview of the Pharmaceutical Sciences taught by a number of department faculty.

Advanced Pharmaceutical Sciences II (APS II)

General overview of the Pharmaceutical Sciences taught by a number of department faculty.

Research and Thesis

Laboratory and literature research directed toward the completion of the student's thesis.

Graduate Seminar

Selected study topics in the pharmaceutical sciences. Required of all M.S. students in Pharmaceutical Sciences.

Novel Dosage Forms

Theoretical basis and design of controlled release and site specific drug delivery systems such as transdermals, microspheres, liposomes and monoclonal antibodies.

Advanced Pharmacology

This advanced elective will address concepts and principles of neuronal identity and function that are germane to pharmaceutical sciences. Principles will be introduced followed by experimental applications. The course will integrate molecular, cellular, and behavioral concepts when applicable. Course topics include chemical and electrical transmission, neurotransmitter chemistry, neuroreceptor pharmacology and

signal transduction mechanisms, structure and function of ion channels and ligand binding sites, synaptic plasticity with an introduction to electrophysiology. Relevant and recent primary literature articles will be introduced for reading and subsequent group discussion.

Recommended textbook: The Biochemical Basis of Neuropharmacology by Cooper et al.

Recommended behavioral textbook: freely available in its entirety at <http://www.rci.rutgers.edu/~lwh/drugs/> and at <http://www.users.drew.edu/ctimmons/drugs/>
 Drugs, Brains and Behavior, a textbook of behavioral pharmacology by C. R. Timmons and L. W. Hamilton.

Advanced Pharmacokinetics

Pharmacokinetic and pharmacodynamic principles and methods used to study absorption, distribution, metabolism and excretion of drugs.

Advanced Immunology/Mol Bio

This course will challenge the student in areas of both Immunology and Molecular Biology through study of the primary research literature and laboratory experience.

Example Degree Schedule

Below is an example of what a typical degree schedule will look like. A student's actual schedule will be determined by the student's thesis committee.

Semester	Course	Credits
Fall, Year 1	APS I	4
	Graduate Seminar	2
	Research	5
Spring, Year 1	APS II	4
	Graduate Seminar	2
	Research	5
Summer	Paid Summer Research	No credit
Fall, Year 2	Elective I	4
	Graduate Seminar	2
	Research/Thesis	5
Spring, Year 2	Elective II	4
	Graduate Seminar	2
	Research/Thesis	5
	Total	44