

# Pharmacy, PhD

## Drug Discovery and Experimental Therapeutics

The Doctor of Philosophy in pharmacy with a subprogram in drug discovery and experimental therapeutics requires 72 s.h. of credit. The degree requires 24 s.h. of didactic coursework, including 14 s.h. of required courses and a minimum of 10 s.h. of interdisciplinary electives. The remaining hours may be fulfilled by research, seminars, additional electives, and the doctoral dissertation. Typical time to complete the degree is five years. Students must maintain a cumulative grade-point average of at least 3.00.

The curriculum provides a strong foundational base of knowledge along with options for a tailored experience for students. The program prepares scientists capable of bridging the complex landscape of medicinal chemistry, biotherapeutics, pharmacogenetics/genomics, and basic pharmacology/toxicology.

The Doctor of Philosophy in pharmacy with a subprogram in drug discovery and experimental therapeutics requires the following work.

## Required Courses

| Course #      | Title   | Hours |
|---------------|---|-------|
| All of these: |   |       |
| PHAR:4146     | Drug Disposition and Pharmacokinetics                         | 2     |
| PHAR:5530     | Pharmaceutical Sciences and Experimental Therapeutics Seminar | 1-2   |
| PHAR:5545     | Current Medicinal Chemistry                                   | 3     |
| PHAR:6515     | Perspectives in Drug Discovery                                | 2     |
| PHAR:6820     | Drug Discovery and Experimental Therapeutics Research         | arr.  |
| BIOS:4120     | Introduction to Biostatistics                                 | 3     |
| PCOL:4130     | Drug Mechanisms and Actions                                   | 3     |
| or PHAR:7101  | Principles of Experimental Therapeutics                       |       |

## Interdisciplinary Electives

Students select a minimum of 10 s.h. of electives chosen from the courses listed below. Additional electives can be selected from biochemistry, chemistry, genetics, neuroscience, and pharmacology at the discretion of the advisor.

| Course #  | Title   | Hours |
|---|---|-------|
| 3-6 s.h., taken every fall and spring semester, from these: |   |       |
| PHAR:5512   | Drug Discovery and Mechanisms                           | 3     |
| PHAR:5537   | Enzymatic Basis of Drug Metabolism                      | 3     |
| PHAR:5541   | Total Synthesis of Biologically Active Natural Products | 3     |
| PHAR:5549   | Analytical Biochemistry                                 | 3     |

|                                       |  |     |
|---------------------------------------|--|-----|
| PHAR:6501                             | Principles and Mechanisms of Chemical Toxicology     | 3   |
| PHAR:6504                             | Mastering Reproducible Science                       | 1   |
| PHAR:6700                             | Advanced Pharmacokinetics and Pharmacodynamics       | 3   |
| PHAR:7101                             | Principles of Experimental Therapeutics              | 3   |
| PHAR:7102                             | Applied Clinical and Translational Science           | 3   |
| BIOL:5512                             | Readings in Genetics                                 | 2   |
| BIOS:5120/<br>IGPI:5120/<br>STAT:5610 | Regression Modeling and ANOVA in the Health Sciences | 3   |
| CHEM:5321                             | Spectroscopic Methods in Organic Chemistry           | 3-4 |
| CHEM:5328                             | Mechanisms of Organic Reactions                      | 3   |

## Comprehensive Examination

Students take the comprehensive examination between the beginning and end of their third year of graduate study.

## Dissertation

The dissertation is defended in a final oral examination.