

Emphasis - Medicinal Chemistry

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Ph.D. in Pharmaceutical Sciences Description

The Ph.D. in pharmaceutical sciences can be completed with an emphasis in environmental toxicology, medicinal chemistry, pharmaceuticals, pharmacology, pharmacognosy, or pharmacy administration.

Minimum Total Credit Hours: 57

Course Requirements

Requirements for each emphasis area are given in the respective program description sections.

Emphasis - Medicinal Chemistry Description

A Ph.D. in pharmaceutical sciences with emphasis in medicinal chemistry prepares a graduate to perform basic and applied interdisciplinary research in drug discovery and development using the tools of computational chemistry, synthetic chemistry, and biological evaluation. Current faculty research programs are focused in cancer, infectious disease, cardiometabolic disorders, and neuroscience/drugs of abuse.

Goals/Mission Statement

The mission of the Department of Medicinal Chemistry is to apply chemistry and the chemically related sciences to the teaching of professional pharmacy students and graduate students. The research mission of the department is the discovery, design, analysis, and the further development of potential drugs and the discovery of potential drug design targets.

Course Requirements

The course requirements for the Ph.D. with emphasis in medicinal chemistry consist of:

- 6 graduate core hours in medicinal chemistry
 - Medc 501: Advanced Medicinal Chemistry I
 - Medc 507: Organic Chemistry of Drug Synthesis
- 2 common core hours
 - BMS 601: Graduate Student Survival Strategies
- 12 hours of Medc courses (600/700 level or BMS courses 700 level)
- 1 hour of Problems in Medicinal Chemistry (Medc 541 or Medc 542)
- 6 hours of graduate-level electives (contingent upon Division of Medicinal Chemistry faculty approval);
- 1 hour Original Research Proposal (BMS 605);
- 2 hours Seminar (BMS 641, repeated for credit, graded)

Seminar Requirement

Students are required to register for BMS 643 (Z grade) every semester, with the exception of those semesters in which the student presents a seminar and instead registers for BMS 641 (graded). No more than 8 seminar hours can be used toward the 54 minimum total credit hours.

A minimum of 18 hours of dissertation research must also be taken to meet degree requirements.

Other Academic Requirements

Original Research Proposal

A student must prepare, submit, and successfully (orally) defend an original research proposal (ORP). Procedures for this requirement will be provided by the department. Students will register for BMS 605 (Original Research Proposal BioMolecular Sciences) in the semester they anticipate defending their ORP.

MALTO Presentation

All graduate students in the Ph.D. program will be required to present their original research in the form of a podium presentation at one of the annual MALTO Medicinal Chemistry Meetings-in- Miniature.

Dissertation

A student must prepare and orally defend a dissertation based on original, independent research in partial fulfillment of their Ph.D. degree.

