

## Emphasis - Pharmacognosy

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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 - Pharmacognosy Description

The Ph.D. in pharmaceutical sciences with emphasis in pharmacognosy involves the study of bioactive natural substances found in terrestrial and marine organisms. "Pharmacognosy" derives from the Greek words "pharmakon" or drug, and "gnosis" or knowledge. The program prepares students for academic or research positions in universities, and industrial or government institutions.

#### Goals/Mission Statement

The Department of Pharmacognosy seeks to contribute to the expansion and advancement of knowledge in the pharmaceutical sciences and related areas through cutting-edge research activities, both basic and applied, and to engage in other scholarly pursuits. This includes as a major emphasis the discovery of new potential chemotherapeutic agents through a study of naturally occurring biologically active substances.

The Ph.D. program emphasizes the chemistry and biology of natural products; the mechanisms of drug actions; the isolation, purification, analysis, structure determination, biosynthesis, and synthesis of naturally occurring substances; structure-activity relationships of bioactive substances; and analytical procedures involving drugs and their metabolites.

#### Course Requirements

Requirements for the Ph.D. with an emphasis in pharmacognosy include:

- Biosynthesis (Phcg 627), 3 hours;
- Advanced Biochemistry (Phcg 620, Phcl 669, or equivalent), 3 hours;
- Problems in Pharmacognosy (Phcg 541, the graduate-level equivalent of Phcg 321: Pathogenesis of Infectious Disease), 3 hours;
- Advanced Topics (Phcg 630, the graduate-level equivalent of Phcy 402: Foundations in BioMolecular Sciences II), 3 hours;
- Graduate Student Survival Strategies (BMS 601), 2 hours; and
- Original Research Proposal (BMS 605), 1 hour.

Students will need to select at least 13 additional elective hours (approved by their committee), at least one of which must be selected from approved offerings outside the department.

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

#### 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.

#### Other Academic Requirements

##### Oral/Cumulative Exam

A student must design, write, submit, and successfully 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.

##### Dissertation

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

