

## 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 the following core courses:

1. Seminar on Current Topics of Interest in Natural Product Chemistry (Phcg 543, 544, 643, 644), 4 hours
2. Natural Product Chemistry (Phcg 627, 628), 6 hours
3. Selected Topics in Pharmacognosy (Phcg 620), Introduction to Molecular Cell Biology, 6 hours

A Ph.D. student will take at least four additional 500/600 level courses, at least three of which are from outside the department from the fields of pharmacology, biochemistry, medicinal chemistry, organic chemistry, botany, microbiology, marine biology, or other approved electives.

#### **Other Academic Requirements**

##### **Seminars**

Each semester, a seminar program will be arranged. Each student will present a minimum of four seminars during the period of graduate study, two on assigned topics, one on a topic of his/her choice, and his/her dissertation defense.

##### **Comprehensive Examination**

For admission to candidacy, the student must successfully complete both written and oral comprehensive examinations administered by the faculty of the department. The oral comprehensive examination will be given within 60 days of the completion of the written comprehensive examination. Students who fail to pass the required comprehensive examinations after two attempts will be terminated from the doctoral program.

##### **Original Research Proposal**

Within six months of passing the oral comprehensive examination, doctoral students will submit and orally defend an original research proposal.

##### **Dissertation**

After completing all other requirements, a doctoral candidate must present and orally defend his/her dissertation, which is based on original, independent research. This defense is before the student's dissertation committee.

