Emphasis - Pharmaceutics

Ph.D. in Pharmaceutical Sciences

Description

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

Minimum Total Credit Hours: 54

Course Requirements

Requirements for each emphasis area are given in the respective program description sections. Each emphasis area requires students to complete a minimum of 36 semester hours of course work and 18 hours of dissertation

Emphasis - Pharmaceutics

Description

The Ph.D. in pharmaceutical sciences with an emphasis in pharmaceutics deals with the science of dosage form design and embraces all facets of the process of turning a new chemical entity into a medication that can be safely and effectively used by patients. Pharmaceutics deals with the formulation of drugs into dosage forms such as tablets, capsules, creams, gels, ointments, transdermal and transmucosal patches, solutions, sprays, drops, injectables, and many others.

Goals/Mission Statement

The primary missions of the Department of Pharmaceutics include providing curricular content in the areas of physical pharmacy, basic pharmacokinetics, dosage forms, and drug delivery systems, and bio- pharmaceutics in both the Bachelor of Science in Pharmaceutical Sciences (B.S.P.S.) and the Doctor of Pharmacy (Pharm.D.) professional degree programs. In addition, the department's educational mission is to educate Ph.D. graduates with scientific competence in these related areas of expertise, including preformulation, formulation, pharmaceutical processing, and novel drug delivery systems. The departmental faculty also provides this same expertise as members of multidisciplinary teams, to scientific projects conducted in the National Center for Natural Product Research (NCNPR).

Course Requirements

The graduate course work requirement for the Ph.D. in pharmaceutical sciences with an emphasis in pharmaceutics includes

- Product Development (Phar 649)
- Statistics and Experimental Design (Bisc 504 or Math 597)
- Analytical Pharmaceutics (Phar 635)
- Advanced Pharmaceutics (Phar 641)
- Surface Phenomena (Ch E 545)
- Stability of Pharmaceutical Systems (Phar 644)
- Advanced Pharmacokinetics (Phar 660)
- Seminar in Current Pharmaceutical Topics (Phar 543, 544)
- Applied Pharmaceutics (Phar 650)

Additional courses may be required by the student's research director and/or advisory committee. If a required course is unavailable, the Department of Pharmaceutics graduate faculty may approve an alternative course for a particular student.

Other Academic Requirements

Comprehensive Examination:

After completion of all course work, including any additional course work required by the research director and/or dissertation committee, a student must successfully pass a comprehensive examination. If a student fails one of the sections of the exam, he or she will be allowed to retake a second exam from a given faculty member. If a student fails more than one section of the exam, he or she will be terminated from the Ph.D. program and allowed to enter the master's program. After passing the exam, a student enters the candidacy stage.

Dissertation Prospectus and Dissertation:

Doctoral students must prepare and orally defend a dissertation prospectus before their dissertation committee. Doctoral students must prepare and orally defend their dissertation, based on original and independent research, before the same committee. The general procedures and composition of the committee are governed by Graduate School policy.

Note: An applicant may enter the Ph.D. program directly, without having to enroll in the master's program.