

## **Emphasis - Pharmaceutics**

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### **M.S. in Pharmaceutical Sciences**

#### **Description**

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

**Minimum Total Credit Hours: 30**

#### **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 24 semester hours of course work and 6 hours of thesis.

### **Emphasis - Pharmaceutics**

#### **Description**

**Minimum Credit hours required for M.S. in Pharmaceutical Sciences with an emphasis in Pharmaceutics: 33**

The M.S. in pharmaceutical sciences with 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.

#### **Course Requirements**

The M.S. in pharmaceutical sciences with an emphasis in pharmaceutics requires 27 semester hours of course work. The following core courses are required:

- Statistics and Experimental Design [BISC 504 (4 hours) or HP 626 (3 hours)];
- Graduate Student Survival Strategies (BMS 601) (2 hours) or Research Ethics (GRAD 600) (1 hour);
- Applied Pharmacokinetics (PHAR 760) (3 hours);
- Product Development (PHAR 749) (3 hours);
- Formulation Development (PHAR 650) (3 hours);
- Advanced Pharmaceutics (PHAR 741) (4 hours).

In addition, at least two of the following electives is required:

- Stability of Pharmaceutical Systems (PHAR 744) (3 hours);
- Colloid and Surface Science (Ch E 545); (3 hours);
- Applied Pharmaceutics (PHAR 750); (2 hours);
- Analytical Pharmaceutics (PHAR 735) (3 hours);
- Pharmaceutical Manufacturing (PHAR 658) (3 hours);
- Regulatory Science I (PHAR 651) (3 hours);
- Regulatory Science II (PHAR 652) (3 hours);
- Problems in Pharmaceutics (PHAR 541, PHAR 542) (1-3 hours);
- Introduction to Polymer Science (Ch E 543) (3 hours);
- Coating Materials Processing and Applications (Ch E 597) (3 hours).

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

#### **Seminar Requirement**

Students are required to register for Seminar in Current Pharmaceutical Topics (PHAR 543 or PHAR 544) every semester. No more than 1 seminar hour can be used toward the 27 minimum total credit hours.

#### **Other Academic Requirements**

A thesis based upon experimental work in the general area of pharmaceutics is also required. **Enrollment in a minimum of 6 thesis hours is required** with at least 3 research hours (thesis) in the last semester.

Prior to the student's thesis defense, the student must have a minimum of one completed manuscript ready for submission to a referred journal for publication.

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