

## Emphasis - Industrial Pharmacy

- [M.S. in Pharmaceutical Sciences](#)
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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 - Industrial Pharmacy** **Description**

The M.S. in pharmaceutical sciences with an emphasis in industrial pharmacy provides fundamental and applied knowledge of the pharmaceutical sciences to prepare B.S. level engineers and scientists (e.g., pharmacy, biology, biotechnology, biomedical engineering, chemical engineering and chemistry) for a career in the pharmaceutical industry.

#### **Course Requirements**

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

The M.S. in pharmaceutical sciences with an emphasis in industrial pharmacy 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 are 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**

The M.S. in pharmaceutical sciences with an emphasis in industrial pharmacy does not require the completion of a thesis or an examination process.

**Students will complete 6 hours of special projects** that complement ongoing research in the department instead of a thesis project.

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