

Graduate Study in Pharmaceutical Sciences

Career outlook

This program prepares students for careers in academic and industrial research.

Educational preparation

The graduate program in Pharmaceutical Sciences encompasses a multidisciplinary approach to graduate training, culminating in the M.S. degree. The program of study leads to either a joint (dual track) Doctor of Pharmacy (Pharm.D.)/M.S. or to an M.S. degree only. The program of study is tailored to the individual needs of each student and is based on the background and career objectives of each student. Students will complete a series of required and elective courses and will perform original research. Furthermore, students will be required to submit a thesis based on the outcome of their research. The program provides the opportunity for students to specialize in the following areas: pharmacology, toxicology, immunopharmacology, pharmaceuticals, pharmacokinetics, medicinal chemistry, and cell biology.

Programs of study

Courses can be selected from the list below or from related subjects, according to the needs of the students. To qualify for the degree, the student must earn at least 30 semester hours of graduate credit beyond the baccalaureate. The student must maintain a B (3.0) average throughout the graduate program.

Coursework

Pharm.D./M.S. Dual Listed Courses

BCH 521	Biochemistry I	4 credits
MPS 531	Medicinal Chemistry I	3 credits
MPS 532	Medicinal Chemistry II	2 credits
PHR 544	Biostatistics and Research Design	3 credits
PHR 631	Medical Pharmacology I	5 credits
PHR 632	Medical Pharmacology II	2 credits

Graduate Courses in Pharmaceutical Sciences

MPS 600	Ocular Pharmacology	2 credits
MPS 633	Research Methods	1-3 credits
MPS 665	Advanced Pharmacokinetics	2 credits
MPS 690	Pharmacology of Immune Response	2 credits
MPS 691	Pharmaceutical Sciences Seminar	1 credit
MPS 692	Directed Independent Study	1-5 credits
MPS 693	Directed Independent Research	1-5 credits
MPS 697	Industrial Pharmacy	3 credits
MPS 797	Master's Directed Independent Research	1-4 credits
MPS 799	Master's Thesis	1-8 credits

Graduate Courses in Other Departments

With permission from their supervisor, students may also enroll in graduate courses offered by other departments. Listed below are examples of courses offered by other departments that may be relevant to the M.S. degree program.

Pharmacology

PHR 711	Receptor and Molecular Pharmacology	3 credits
PHR 715	Advanced Pharmacology	3 credits
PHR 717	Molecular Biology in Pharmacology	2 credits

Medical Microbiology:

MIC 615	Medical Microbiology and Immunology	5 credits
MIC 739	Microbial Physiology	4 credits
MIC 753	Antimicrobial Agents and Chemotherapy	4 credits
MIC 727	Methods in Medical Microbiology and Immunology	3 credits
MIC 746	Advanced Immunology	3 credits

Chemistry:

CHM 501	Inorganic Chemistry I	2 credits
CHM 505	Environmental Chemistry and Natural Resources	3 credits
CHM 525	Organic Spectroscopic Analysis	3 credits

Ethics

IDC 601	Responsible Conduct of Research	3 credits
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The following requirements apply to students enrolled in the Pharm.D./M.S. program:

- ◆ A minimum of 12 credit hours of didactic courses is required.
- ◆ A maximum of four credit hours of seminar and a maximum of six credit hours of thesis can be applied toward the M.S. degree.
- ◆ Not more than 12 credit hours of Pharm.D. courses can be applied toward the M.S. degree.
- ◆ A minimum of 12 credit hours must be earned in courses that are not listed as required courses for the Pharm.D. degree.

Faculty

Peter W. Abel, Ph.D. (West Virginia University), Pharmacology
Naser Z. Alsharif, Ph.D. (Creighton University), Pharmaceutical Sciences
Charles S. Bockman, Ph.D. (Creighton University), Pharmacology
Alekha K. Dash, Ph.D. (University of Minnesota), Pharmaceutical Sciences
Frank J. Dowd, D.D.S., Ph.D. (Baylor College of Medicine), Pharmacology
William B. Jeffries, Ph.D. (Philadelphia College of Pharmacy and Science), Pharmacology
Kenneth R. Keefner, Ph.D. (University of North Dakota), Pharmaceutical Sciences
Manzoor M. Khan, Ph.D. (University of Arizona School of Medicine), Pharmaceutical Sciences
Aimee Limpach, Ph.D. (University of Nebraska Medical Center), Pharmaceutical Sciences
Michael C. Makoid, Ph.D. (University of Wisconsin), Pharmaceutical Sciences
Thomas F. Murray, Ph.D. (University of Washington School of Medicine), Pharmacology
Catherine A. Opere, Ph.D. (Creighton University), Pharmaceutical Sciences
Victor A. Padron, Ph.D. (University of Nebraska Medical Center), Pharmaceutical Sciences
Victoria F. Roche, Ph.D. (University of Nebraska Medical Center), Pharmaceutical Sciences
Margaret A. Scofield, Ph.D. (University of Arizona), Pharmacology
Michael A. Shara, Ph.D. (Creighton University), Pharmaceutical Sciences
Somnath Singh, Ph.D. (North Dakota State University), Pharmaceutical Sciences

Admission requirements

Applicants to the M.S. program in Pharmaceutical Sciences must have a Bachelor's degree or its equivalent from an accredited college or university. Students who are in the Pharm.D. program must be admitted into the Graduate School in order to participate in the joint Pharm.D./M.S. program in Pharmaceutical Sciences.

An application should include:

- ◆ Completed application and application fee
- ◆ Official transcripts from all colleges/universities attended
- ◆ Three recommendations
- ◆ Official scores on the Graduate Record Exam (GRE)

For more information

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