

Doctor of Philosophy in Pharmacology and Toxicology

Pharmacology and Toxicology Graduate Programs

The Department of Pharmacology and Toxicology has research strengths in neuropharmacology — especially in neurodegeneration, mood disorders, and addiction — and the effects of diabetes on the nervous system. The research program is founded on a strong Ph.D. graduate program. Doctoral students are prepared to teach and do research in a university, pharmaceutical, biotechnology, or government laboratory setting.

New Ph.D. students can look forward to personal development in an atmosphere that fosters strong collaborative activities as well as independent scholarship. The department recruits about 4 Ph.D. students each year and offers stipends and tuition coverage. The department's research programs and faculty place it at the leading edge of research in the pharmacological and toxicological neurosciences.

Graduate Admission

Admission is based on the student's undergraduate record in a relevant field, Graduate Record Examination scores, and 3 letters of recommendation. A minimum grade-point average of 3.0 on a 4.0 scale is required. Applications from non-English-speaking countries must include a copy of the Test of English as a Foreign Language score. Acceptance depends on the availability of space and faculty commitment.

Students are expected to have bachelor's degrees in pharmacy, chemistry, biology, pharmacology, toxicology, or other physical science related disciplines. Submit your graduate application online (<http://www.graduate.ku.edu/>). Send transcripts of all completed college and university course work and all other requested application materials to the department:

The University of Kansas
Department of Pharmacology and Toxicology
Malott Hall
1251 Wescoe Hall Drive, Room 5064
Lawrence, KS 66045

Ph.D. Degree Requirements

Course Work

Incoming students should have completed 4 semesters of Chemistry and 4 semesters of Biology, including a course in Cell Biology and one in Biochemistry. Prerequisites can be completed during the first year. The core courses in Pharmacology and Toxicology that all students are required to take are listed below. Prerequisite for all courses is graduate standing in the Pharmacology and Toxicology Program.

Code	Title	Hours
P&TX 700	Professional Issues in the Biomedical Sciences	2
P&TX 730	Advanced Pharmacology I - CNS and ANS	2

P&TX 731	Advanced Pharmacology II - Cardiovascular and Renal System	2
P&TX 732	Advanced Pharmacology III - Immunology and Inflammatory Diseases	2
P&TX 733	Advanced Pharmacology IV - Endocrinology	2
P&TX 742	Experimental Pharmacology	3
P&TX 747	Molecular Toxicology	2
P&TX 799	Pharmacology and Toxicology Seminar	1-2
P&TX 800	Pharmacology and Toxicology Teaching Principles	2
P&TX 801	Issues in Scientific Integrity	1
P&TX 803	Pharmacology Literature Review I	1
P&TX 805	Pharmacology Literature Review II	1
BIOL 841	Biometry I	5
P&TX 825	Research in Pharmacology and Toxicology (Can be repeated during the graduate program based on the advice of each student's mentor)	3-9
P&TX 999	Doctoral Dissertation (Can be repeated during the graduate program based on the advice of each student's mentor)	1-11

Research Advisory Committee members for Ph. D degree aspirants should be identified by the end of the second year in the program. The committee is composed of at least three members, and the research director serves as chairman. The final Dissertation Defense Committee should consist of the original Advisory Committee (3 members) plus two (2) other members of the Graduate Faculty. At least one member of the final Dissertation Committee must be from outside the Department.

Comprehensive Exam Requirements for Ph. D. Students

The comprehensive examination is composed of 3 parts:

1. Written Comprehensive Examination: Each student must complete two written examinations to complete P&TX 803 and P&TX 805.
2. Preparation of an NIH-style research proposal: After successful completion of the second written comprehensive exam, the student should begin working on their NIH grant proposal. These serve as the basis for the Oral Comprehensive Exam.
3. Oral Comprehensive Examination: After approval of the research proposal by the student's advisory committee, each student, in consultation with the advisor, takes an oral examination covering the student's major field.

Dissertation Research

The student, with the advisor's assistance, develops a dissertation project. After the oral comprehensive examination, the student presents the dissertation research project to the advisory committee and receives periodic advice from this committee throughout the project. Upon acceptance of the dissertation by the advisory committee, the candidate must pass a final oral examination, including a defense of the dissertation before the dissertation committee and any other interested members of the Graduate Faculty.

At the completion of this program, students will be able to:

- select and defend a significant problem of topic of study and demonstrate mastery of relevant knowledge in the field.
- communicate effectively in academic writing and effectively defend the work when questioned.
- apply rigorous methods of the discipline and produce a valuable contribution to the field.