

THE 11-Month Non-Thesis MASTER'S DEGREE PROGRAM IN PHARMACOLOGY AND TOXICOLOGY

I PROGRAM OVERVIEW AND OBJECTIVES

Our Graduate Program offers a non-thesis Master of Science Degree in Pharmacology and Toxicology, with options for either a Pharmacology Concentration or a Toxicology Concentration. The Program has two main objectives: 1) to develop competence in directed research for advanced technical positions in industry, government (FDA and EPA), and university medical research laboratories; and 2) to explore the possibility of a future career as an independent scientist in pharmacological or toxicological research, in addition to enhancing credentials for admission to PhD programs; 3) to enhance the student credentials for admission to and performance in professional healthcare programs.

The typical non-thesis Master of Science (M.S.) program consists of a minimum of thirty (30) credit hours, focusing on coursework concentrated in either pharmacology or toxicology and including a laboratory research project, usually completed over an eleven-month period spanning three semesters.

II ADMISSION

A. APPLICATION PROCEDURES

The University of Louisville Graduate School catalog gives a general description of admission procedures. Application information can be found on the Graduate School website (www.graduate.louisville.edu). The following application items must be submitted to the Graduate School Admissions Office at the University of Louisville.

1. One official transcript of the applicant's previous work for each college or university that has been previously attended.
2. At least three letters of recommendation from people who are well acquainted with the applicant's previous academic work.
3. For international applicants, the minimum acceptable scores are: 105 for Duolingo, 80 for TOEFL, or 6.5 for IELTS, as required by the Graduate School.
4. A non-returnable application fee to the University of Louisville.
5. Applicants must state in a letter to the Department but submitted to the Graduate School (referred to as the Personal Statement in the application materials), why they desire a M.S. degree in pharmacology and toxicology.

B. ADMISSION REQUIREMENTS A cumulative undergraduate grade point average that is usually 3.00 or higher on a scale of 4.00 (A=4, B=3, etc.)

III REQUIREMENTS FOR THE MASTER'S DEGREE

ADVISOR SELECTION

1. The Director and Assistant Director of Graduate Studies will meet with the new student to discuss their academic and research interests. The Director of Graduate Studies will serve as a Temporary Advisor until a Permanent Advisor is selected.
2. During the first semester of their graduate study, students are required to visit research laboratories of potential Principal Advisors who hold primary or secondary appointments in the Department of Pharmacology and Toxicology and align with their interests. Students must select a Principal Advisor within the first semester. The selection process involves approval by the student, the Principal Advisor, the Director of Graduate Studies, and the Department Chair.

MINIMUM PROGRAM REQUIREMENTS

At least 30 semester hours beyond the Baccalaureate Degree are required for the degree of Master of Science.

COURSE REQUIREMENTS

The typical M.S. Program must include the following courses:

Pharmacology Concentration:

Fall semester:

BIOC 645 ADVANCED BIOCHEMISTRY I: 4 CH

PHTX 643 ENVIRONMENTAL TOXICOLOGY: 3 CH (elective)

PHTX 641 PRINCIPLES OF PHARMACOLOGY: 3 CH

PHZB 602 PHYSIOLOGICAL CONCEPTS FOR GENERAL LIFE SCIENCES: 2 CH

PHTX 617 LABORATORY RESEARCH ROTATION/RESEARCH: 2-5 CH

PHTX 606 SEMINAR: 1 CH (PASS OR FAIL)

Spring semester:

PHTX 644 ORGAN TOXICOLOGY: 3 CH (elective)

BIOC 667 CELL BIOLOGY: 3 CH

PHTX 642 PRINCIPLES, APPLICATIONS, AND RESEARCH METHODS IN PHARMACOLOGY: 3 CH

BIOC 630 RESPONSIBLE CONDUCT OF RESEARCH: SURVIVAL SKILLS AND RESEARCH ETHICS: 1 CH

PHTX 619 RESEARCH 4-7 CH

PHTX 606 SEMINAR: 1 CH (GRADES)

Summer:

PHTX 632 ANALYSIS OF PARAMETRIC & NON-PARAMETRIC DATA: 2 CH

PHTX 619 RESEARCH 4 CH

Toxicology Concentration:

Fall semester:

BIOC 645 ADVANCED BIOCHEMISTRY I: 4 CH

PHTX 643 ENVIRONMENTAL TOXICOLOGY: 3 CH

PHTX 641 PRINCIPLES OF PHARMACOLOGY: 3 CH (elective)

PHZB 602 PHYSIOLOGICAL CONCEPTS FOR GENERAL LIFE SCIENCES: 2 CH

PHTX 617 LABORATORY RESEARCH ROTATION/RESEARCH 2-5 CH

PHTX 606 SEMINAR: 1 CH (PASS OR FAIL)

Spring semester:

PHTX 644 ORGAN TOXICOLOGY: 3 CH

BIOC 667 CELL BIOLOGY: 3 CH

PHTX 642 APPLIED PHARMACOLOGY: 3 CH (elective)

BIOC 630 RESPONSIBLE CONDUCT OF RESEARCH: SURVIVAL SKILLS AND RESEARCH ETHICS: 1 CH

PHTX 619 RESEARCH: 4-7 CH

PHTX 606 SEMINAR: 1 CH (GRADES)

Summer:

PHTX 632 ANALYSIS OF PARAMETRIC & NON-PARAMETRIC DATA: 2 CH

PHTX 619 RESEARCH: 4 CH

ACADEMIC PERFORMANCE

A student must have at least a 3.0 accumulated GPA to be graduated with a degree of Master of Science in Pharmacology. In general, a student with a GPA that is less than 3.0 at the end of the second semester

will require a 2/3 majority vote of the Departmental faculty to continue in the Program. A student may not be graduated with more than 6 CH of "C" grades in their required courses.

FINAL EXAMINATION

The non-thesis M.S. student will take a Final Examination during the last semester of the M.S. Program. This exam will take the form of a research paper or a literature review paper, plus a final oral exam.

A positive recommendation for the Master of Science Degree shall require a majority vote of the Final Examination Committee (consisting of at least the Principal Advisor who will serve as Chair and two additional members of the Graduate Faculty). The Committee must have been approved by Director of Graduate Studies, the Department Chair, and the Dean of the School of Medicine (or his/her designee) prior to the Final Examination. This recommendation shall be made at least one week before graduation.