Master of Science in Toxicology

Pharmacology and Toxicology both require an understanding of basic properties and actions of chemicals and the biological systems they affect. Toxicology, more specifically, the study of adverse effects of chemicals on living systems, the extent of damage they produce, the relationship between dose and effect, routes of exposure, and potential treatments. Toxicologists not only identify toxins, but also contribute to risk assessment, safety evaluation, and establishment of legal regulations. Toxicologists perform many different duties including research in academic, nonprofit and industrial settings, and in consulting and public service.

The Master of Science (M.S.) in Toxicology degree program provides an academic experience that emphasizes research skills and prepares students for a range of careers in varied employment settings or more advanced academic study. The M.S. curriculum provides a foundation of core concepts and skills through required coursework, but allows considerable flexibility for individualization through advanced electives and mentored research experiences.

The application process is an online process. Application to this graduate program is facilitated through the Interdisciplinary Graduate Program in Biomedical Sciences (IGPBS). Detailed instructions on how to apply and the application deadlines are posted on the Interdisciplinary Graduate Program in Biomedical Sciences website http://www.kumc.edu/igpbs/how-to-apply.html.

Admission Requirements:

- Bachelor's degree from a regionally accredited institution documented by submission of official transcript indicating the degree has been conferred before entering the program. Official transcripts from institutions attended post-baccalaureate are also required.
  
  Students with degrees from outside the U.S. may be subject to transcript evaluation indicating the degree is equivalent to a U.S. degree and meets the minimum cumulative GPA requirements.

- A cumulative grade-point average (GPA) of at least a 3.0 on a 4.0 scale for the bachelor's degree.

- Applicants who are not native speakers of English, whether domestic or international, must demonstrate they meet the Minimum English Proficiency Requirement (http://catalog.ku.edu/graduate-studies/kumc/#admissiontext).

- A background check (http://catalog.ku.edu/graduate-studies/kumc/#admissiontext) is required during the admission process; it may affect the student's eligibility to enter the program.

- An official copy of the Graduate Record Examination (GRE) score sent from Educational Testing Service (ETS) to University of Kansas Medical Center - ETS institutional code 6895.

- Three letters of recommendation.

- Prerequisite coursework:
  
  - One year of general chemistry
  - One year of organic chemistry or one semester of organic chemistry and one semester of biochemistry
  - One year of biological sciences

- Research experience (beyond labs associated with lecture courses) is strongly suggested.

Applicants will be assessed based on a combination of GPA, research experience, and GRE scores. Students not meeting the above requirements may be eligible for provisional admission. After an applicant has been admitted, a program may defer an applicant's admission for one year after which time the applicant must submit a new application.

Admission requirements are subject to change. In most cases, use the catalog of the year student entered the program. Other years' catalogs ».

Degree Requirements:

- Degree requirements are normally completed within 3 years of admission to the degree program although a maximum of 7 years is allowed.

- Cumulative grade-point average (GPA) of at least a 3.0 for all KU graduate coursework.

- Completion of a minimum of 30 credit hours.

- Enrollment in a minimum of one (1) credit hour the semester the student will graduate.

- Successful completion of either a thesis defense or general examination (http://catalog.ku.edu/graduate-studies/kumc/#programtext) the semester the student will graduate.

- If thesis option chosen, then enrollment in a minimum of one (1) credit hour of PTOX 899 Thesis in Toxicology and successful thesis submission and publication (http://catalog.ku.edu/graduate-studies/kumc/#programtext) (according to Office of Graduate Studies policy.)

- Successful completion of the following Interdisciplinary Graduate Program in Biomedical Science (IGPBS) (http://catalog.ku.edu/medicine/graduate-program-biomedical-sciences) courses (or their equivalent):

  - GSMC 850 Proteins and Metabolism 2
  - GSMC 851 Molecular Genetics 2
  - GSMC 852 Introduction to Biomedical Research I 2
  - GSMC 853 Cellular Structure 2
  - GSMC 854 Cell Communication 2
  - GSMC 855 Introduction to Biomedical Research II 2
  - GSMC 856 Introduction to Research Ethics 1
  - GSMC 857 Biographics 1
  - GSMC 858 Introduction to Faculty Research 1
  - GSMC 859 Research Rotations 1-4

- Successful completion of the following Toxicology courses:

  - PTOX 889 Research in Toxicology 1-10
  - PTOX 898 Principles of Toxicology 1
  - PTOX 899 Thesis in Toxicology (if thesis option chosen) 1-10

- Successful completion of elective coursework as determined in consultation with the student's advisor.

Degree requirements and course descriptions are subject to change. Any courses taken as an equivalent must be approved by the Graduate Director and the Office of Graduate Studies. In most cases, use the catalog of the year student entered the program.
## Typical Plan of Study

### Year 1

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hours Spring</th>
<th>Hours Summer</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>GSMC 850</td>
<td>2 GSMC 853</td>
<td>2 GSMC 859</td>
<td>1-4</td>
</tr>
<tr>
<td>GSMC 851</td>
<td>2 GSMC 854</td>
<td>2 May take an elective course from the student's chosen degree program in consultation with the student's advisor.</td>
<td>1-3</td>
</tr>
<tr>
<td>GSMC 852</td>
<td>2 GSMC 855</td>
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<tr>
<td>GSMC 856</td>
<td>1 GSMC 859</td>
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<tr>
<td>GSMC 857</td>
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<td>GSMC 859</td>
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<td></td>
<td><strong>10-13</strong></td>
<td><strong>7-10</strong></td>
<td><strong>2-7</strong></td>
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**Total Hours: 19-30**

### Year 2

<table>
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<th>Hours</th>
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<tbody>
<tr>
<td>PTOX 889</td>
<td>1-6 PTOX 889</td>
<td>1-6 PTOX 889</td>
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<tr>
<td>PTOX 898</td>
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<td></td>
<td><strong>2-7</strong></td>
<td><strong>1-6</strong></td>
<td><strong>1-3</strong></td>
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</tbody>
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### Year 3

<table>
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<th>Hours Spring</th>
<th>Hours Summer</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PTOX 899 or 889</td>
<td>1-6 PTOX 899 or 889</td>
<td>1-6 PTOX 899 or 889</td>
<td>1-3</td>
</tr>
<tr>
<td>PHCL 899 if thesis option chosen, otherwise PHCL 890</td>
<td>PHCL 899 if thesis option chosen, otherwise PHCL 890</td>
<td>PHCL 899 if thesis option chosen, otherwise PHCL 890</td>
<td></td>
</tr>
</tbody>
</table>

Thesis defense or general examination scheduled semester approved by committee to graduate.

|               | **1-6**      | **1-6**         | **1-3**|

**Total Hours: 7-31**