Human Toxicology, Ph.D.

Learning Outcomes
Students will be able to:

• demonstrate an in-depth knowledge of the principles of toxicology, including metabolism, toxicity, risk assessment, and specific expertise related to the area of their dissertation (molecular biology, in vitro and/or in vivo techniques, analytical methods);
• apply the knowledge and skills of toxicology to conduct independent and innovative research;
• demonstrate high ethical and professional standards and responsible conduct in research; and
• synthesize the knowledge and skills of toxicology to succeed as a professional in diverse toxicology careers.

Requirements
The Doctor of Philosophy program in human toxicology requires a minimum of 72 s.h. of graduate credit. Students must maintain a cumulative g.p.a. of at least 3.00.

The program is designed for students with backgrounds in the biological, engineering, and physical sciences. Entering students should have solid training in science, including courses in introductory chemistry and biology, and organic chemistry; knowledge of biochemistry and molecular biology also is useful. Students may remedy deficiencies by taking appropriate courses during their first year of graduate study.

Students begin the program with three two-month rotations in the laboratories of participating faculty members in order to identify a mentor. After the first year, the mentor assumes financial responsibility for the student. With advice from the mentor, each student chooses an advisory committee, which meets at least once a semester to help the student explore the student’s research interests. The committee also provides consultation on coursework and research activities and serves as the committee for the comprehensive examination and the final examination (dissertation defense).

The Human Toxicology Program is flexible. Students work with their advisory committees to plan a course of study tailored to their individual interests and goals within the field of toxicology.

Ph.D. students in human toxicology must successfully complete the following coursework as part of their course of study.

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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>One of these:</td>
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<tr>
<td>OEH:6710</td>
<td>Human Toxicology and Risk Assessment</td>
<td>3</td>
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<tr>
<td>PHAR:6501</td>
<td>Principles and Mechanisms of Chemical Toxicology</td>
<td>3</td>
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<tr>
<td>And all of these:</td>
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<tr>
<td>TOX:7173</td>
<td>Professional Development in Toxicology</td>
<td>arr.</td>
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<tr>
<td>TOX:7180</td>
<td>Toxicology Research Seminar (enrollment is required each semester)</td>
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After successfully completing the comprehensive examination, usually at the end of the second year of graduate study, the student advances to Ph.D. candidacy. Students devote all of their time to dissertation research and writing. Upon successful completion of all requirements, including the dissertation and its oral defense, students are awarded the Doctor of Philosophy degree.

Combined Programs
Ph.D./M.D.

Students may work toward the Ph.D. and the Doctor of Medicine in a combined degree program offered by the Graduate College and the Carver College of Medicine. Applicants must be admitted to both programs before they may be admitted to the combined degree program. See the Medical Scientist Training Program (Carver College of Medicine) in the Catalog.

Admission
Prospective students may apply to the program via a centralized application system; see Admission Information on the Human Toxicology Program website.

Completed applications are encouraged to be submitted by December 1, but applications after that date are given full consideration. Applications submitted after March 1 are reviewed when received and are considered for any remaining openings.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations on the Graduate College website.

Financial Support
Doctoral students in human toxicology receive stipends and tuition support from University of Iowa sources, including internal fellowships and graduate research assistantships, and from non-University sources, such as training grants from the National Institutes of Health (NIH).