Human Toxicology, PhD

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 grade-point average 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.

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

Course #	Title	Hours
One of these:		
OEH:6710	Human Toxicology and Risk Assessment	3
PHAR:6501	Principles and Mechanisms of Chemical Toxicology	3
And all of these:		
TOX:7173	Professional Development in Toxicology	2
TOX:7180	Toxicology Research Seminar (enrollment is required each semester)	0-1
BIOS:4120	Introduction to Biostatistics	3
BIOS:5120	Regression Modeling and ANOVA in the Health Sciences	3
BMED:7270	Scholarly Integrity/ Responsible Conduct of Research I (must be completed within first two years of graduate study)	0
OEH:6720	Advanced Toxicology	4

After successfully completing the comprehensive examination, usually at the end of the second year of graduate study, the student advances to PhD 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

PhD/MD

Students may work toward the PhD 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 Dec. 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.

Academic Plans

Sample Plan of Study

Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

Human Toxicology, PhD

Course	Title	Hours
Academic Career		
Any Semester		
72 s.h. must be graduate level coursework; graduate transfer credits allowed upon approval. More information is included in the General Catalog and on department website. [a]		
Graduate College program GPA of at least 3.00 is required. [b]		
	Hours	**0**

First Year		
Fall		
BIOS:4120	Introduction to Biostatistics	3
OEH:6710 or PHAR:6501	Human Toxicology and Risk Assessment or Principles and Mechanisms of Chemical Toxicology	3
TOX:7173	Professional Development in Toxicology	2
TOX:7180	Toxicology Research Seminar [c]	0
TOX:7201	Toxicology Research	7
	Hours	**15**
Spring		
BIOS:5120	Regression Modeling and ANOVA in the Health Sciences	3
OEH:6710 or PHAR:6501	Human Toxicology and Risk Assessment or Principles and Mechanisms of Chemical Toxicology	3
TOX:7180	Toxicology Research Seminar [c]	0
TOX:7201	Toxicology Research	6
Elective course [d]		3
	Hours	**15**
Second Year		
Fall		
BMED:7270	Scholarly Integrity/Responsible Conduct of Research I	0
OEH:6720	Advanced Toxicology	4
TOX:7180	Toxicology Research Seminar [c]	0
TOX:7201	Toxicology Research	5
Elective course [d]		3
Elective course [d]		3
	Hours	**15**
Spring		
BMED:7271	Scholarly Integrity/Responsible Conduct of Research II	0
OEH:7060	Research Design in Occupational and Environmental Health	3
TOX:7180	Toxicology Research Seminar [c]	0
TOX:7201	Toxicology Research	6
Elective course [d]		3
Elective course [d]		3
Exam: Doctoral Comprehensive Exam		
	Hours	**15**
Third Year		
Fall		
TOX:7180	Toxicology Research Seminar [c]	0
TOX:7201	Toxicology Research	4
	Hours	**4**
Spring		
TOX:7180	Toxicology Research Seminar [c]	0
TOX:7201	Toxicology Research	4
	Hours	**4**
Fourth Year		
Fall		
TOX:7180	Toxicology Research Seminar [c]	0
TOX:7201	Toxicology Research	2
	Hours	**2**
Spring		
TOX:7180	Toxicology Research Seminar [c]	0
TOX:7201	Toxicology Research	2
	Hours	**2**
Fifth Year		
Fall		
TOX:7180	Toxicology Research Seminar [c]	0
TOX:7201	Toxicology Research	1
	Hours	**1**
Spring		
TOX:7180	Toxicology Research Seminar [c, e]	1
TOX:7300	Thesis/Dissertation	1
Exam: Doctoral Final Exam [f]		
	Hours	**2**
	Total Hours	**75**

a Students must complete specific requirements in the University of Iowa Graduate College after program admission. Refer to the Graduate College website and the Manual of Rules and Regulations for more information.

b Graduate College program GPA is comprised of all courses that are approved degree requirements. If a student takes more than the minimum required number of semester hours to complete the degree, but all courses taken are eligible to count toward the degree, those courses will be included in the Graduate College program GPA.

c Students register for 0 s.h. until they present their thesis defense, and then should register for 1 s.h.

d Work with faculty advisor to select graduate level coursework to meet research interests and goals within the field of toxicology.

e Students present their dissertation research.

f Dissertation defense.