

In the Name of God

Islamic Republic of Iran Ministry of Health and Medical Education Deputy Ministry for Education

Toxicology

Degree: Doctorate of Philosophy (PhD)

Total Course Credits

Core: 27

Thesis: 22

Total: 49

Program Description

Toxicology is the science of chemical safety. Aim and mission of toxicology is to identify potential harmful effects of chemical compounds on humans, animals and the environment, and to provide for their prevention and treatment. Appropriate experimentation and expert judgment allow minimizing the probability of the occurrence of adverse effects, which in the past have sometimes been of catastrophic dimension. Toxicology is a multidisciplinary science based upon Physiology, Biochemistry, Molecular Biology, Chemistry, Pharmacology, Pathology, and Epidemiology.

The PhD program in toxicology defines graduate training in toxicology in which the students will be provided with the opportunity to pursue studies that will prepare them for a range of career paths. Graduates of this program are primed for leadership roles in different areas of toxicology including: mechanistic, clinical, analytical, forensic, environmental and regulatory.

Aims and Objectives:

The major aim of the PhD program in toxicology is to educate students in a way that they become qualified to conduct high-level research in different areas of toxicology. The toxicology program provides comprehensive course work and research training to prepare prospective toxicologists for careers in academia, hospital, industry, and government. The objectives of the PhD program in toxicology is to educate the students in a way that they possess a comprehensive understanding of the general field of toxicology, in addition to specific expertise in their particular area of interest. At the end of the program, they should be able to design, carry out and interpret research in the field. Their research findings should be publishable as well. They should show capacity for continuing to make significant contributions in toxicology and for conducting independent research.

Admission Requirements

Graduates of different fields of studies including doctors of Pharmacy, Medicine, Dentistry, Veterinary Medicine, and master degree (MSc) in one of the fields of biochemistry, biology, pharmacy, pharmacology, and toxicology awarded by one the domestic or overseas universities approved by the Ministry of Health and Medical Education can be sit for the entrance examination.

Candidates must pass both a written and oral entrance exam. They should also demonstrate proficiency in verbal and written English.

* Important note: these general conditions do not necessarily exclude specific condition of each institute or university.

Expected Competencies at the End of the Program

General Competencies*

Specific Competencies and Skills

Graduates in this course will be able to take educational responsibilities, conduct research and provide expert and consulting services related to the field of toxicology.

- In education, they will give contribution in teaching toxicology to students of various fields according to the universities' needs.
- In research, they will be able to design, conduct, and evaluate basic and applied researches in various contexts of the related field.
- In providing expert services, they will be able to detect and analyze toxic agents using standard and ingenious methods, and manage poisoning.
- In providing consultation services, they will be able to give consultation on prevention and management of acute and chronic toxicity.
- In regulatory section, they will be able to support the development of standard protocols and new testing methods in order to continuously improve the scientific basis for decision-making processes.

Educational Strategies, Methods and Techniques*

Student Assessment (Methods and Types)

Methods of the assessment

Students will be evaluated by the following methods:

Written; Verbal; Logbook- based assessment.

Types of the Assessment

Periodic, Comprehensive (final); Monitoring the progress and completion of the thesis.

Ethical Considerations*

*Note: The related document(s) can be found at <http://hcmep.behdasht.gov.ir/>.

Tables of the Courses

Table 1: Compensatory courses

Code of the course	Title of the course	Number of credits				Total hours of the course				Prerequisite or concurrent courses
		theoretical	practical	Internships	total	theoretical	practical	Internships	total	
01	Medical Information Systems	0.5	0.5	-	1	9	17	-	26	-
02	Histology	-	1	-	1	-	34	-	36	-
Total		2								

Student will be asked to pass all or part of non-core courses according to decision of the department in which the student is admitted according to student's background.

Table 2: Core courses

Code of the course	Title of the course	Number of credits				Total hours of the course			
		theoretical	practical	Internships	total	theoretical	practical	Internships	total
03	Principles of Advanced Research Methodology	2	-	-	2	34	-	-	34
04	Environmental Toxicology	2	-	-	2	34	-	-	34
05	Advanced and Theoretical Toxicology	2	-	-	2	34	-	-	34
06	Advanced and Practical Toxicology	-	1	-	1	-	34	-	34
07	Advanced and Theoretical Pharmacology	3	-	-	3	51	-	-	51
08	Advanced and Practical Pharmacology	-	1	-	1	-	34	-	34
09	Analytical and Theoretical Toxicology	2	-	-	2	34	-	-	34
10	Analytical and Practical Toxicology	-	1	-	1	-	34	-	34
11	Clinical and Theoretical Toxicology	3	-	-	3	51	-	-	51
12	Clinical and Practical Toxicology		2	-	2	-	68	-	68
13	Information Resources in Toxicology	-	1	-	1	-	34	-	34
14	Cellular and Molecular Toxicology	2	1	-	3	34	34	-	68
15	Forensic Toxicology	-	1	-	1	-	34	-	34
16	Laboratory Internship	-	-	1	1	-		68	68
17	Teaching and Learning Techniques	-	1	-	1	-	34	-	34
18	Crisis Management in Disasters	1	-	-	1	17	-	-	17
19	Thesis	-	-	-	22	-	-	-	

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