

In the Name of God

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

Medical Immunology Doctor of Philosophy (PhD)

Total Course Credits

- Compensatory: 13
- Core: 26
- Non-core (Electives): 4
- Dissertation: 20

Program Description

Field of Medical Immunology is a branch of the medical sciences, which explores the role of immune responses in health and disease particularly immunity against pathogens and it is also an integrated part of educational and research activities.

Extraordinary advances have been achieved in the understanding of immunology concepts from the era of Koch and Pasteur until now. After that, characterization of immunological responses has provided an interesting horizon for research in this growing field. Under special conditions, immune responses can cause tissue damage or adverse effects in the host. These responses are also involved in transplant rejection. Specific immune reactions are utilized in blood grouping, diagnosis of the diseases, bacteria classification and even identification of humans in criminal investigations. Immunology scope has broadly been extended and includes immunochemistry, immunogenetics, transplantation immunology, tumor immunology, neonatal immunology, psychoneuroimmunology, reproductive immunology, aging and nutrition and the immune system.

The graduates will be able to do both basic and applied research and teach related courses as well as provide diagnostic and therapeutic services in the area of immunology.

The aims of PhD program in Medical Immunology include:

- training human resources for employment in the public and private research centers to conduct related applied and basic research;
- providing skillful human resource for employment in education department at universities and higher education institutes;
- training professional resource for employment in diagnostic and therapeutic centers;
- strengthening production of biological products related to immunology science;
- expanding the boundaries of immunology science, innovation and aiding in advancement of immunology science.

Admission Requirements

- Having a master's degree (MSc) in Medical Immunology
- Meeting admission criteria based on regulations of universities
- Being eligible for entering the program

Expected Competencies at the End of the Program

General Competencies*

Specific Competencies and Skills

At the end of the program learners will be competent in the following skills:

- Making a healthy and safe environment in both physical and psychological aspects
- Using specialized equipment
- Working in professional environments
- Having skills in handling animals
- Interpreting test results
- Performing experiments
- Calibrating common measurements and equipment
- Having ability in quality control

Educational Strategies, Methods and Techniques*

Student Assessment (Types and Methods)

- Formative (Quizzes and Midterm Exam)
- Summative (Final Exam)
- Oral and written exams, observation, clinical competence assessments
- (OSCE, OSLE, OSFE, DOPS, 360 degree evaluation competency)
- Portfolio assessment: Log book, test results, reports, articles, certificates, promotion, etc.

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			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Immunology 1	2	-	2	34	-	34	-
02	Immunology 2	2	-	2	34	-	34	-
03	Cellular & Molecular Biology	2	-	2	34	-	34	-
04	Immunology of Infectious Diseases	1	-	1	17	-	17	-
05	Laboratory Methods in Immunology	1	2	3	17	68	85	-
06	Immunoematology and Blood Bank	1	1	2	17	34	51	-
07	Medical Information Systems	0.5	0.5	1	9	17	26	-
	Total	9.5	3.5	13	162	119	281	-

Table 2. Core Courses

Code of the Course	Title of the Course	Number of Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
08	Advanced Immunology	2		2	34		34	02
09	Advanced Molecular Biology	2		2	34		34	03
10	Organ Immunology	2		2	34		34	02
11	Clinical immunology	2		2	34		34	10
12	Vaccines and Vaccination	2		2	34		34	01, 04
13	immunotherapy	1		1	17		17	02
14	Advanced techniques of Immunology and Immunochemistry	1	2	3	17	68	85	05
15	1.5 Month Internship in Dermatology	-	3 (internship)	3	-	204	204	11
16	1.5 Month Internship in "Rheumatology"	-	3 (internship)	3	-	204	204	11
17	1.5 Month Internship in "Infectious Diseases"	-	3 (internship)	3	-	204	204	04
18	1.5 Month Internship in Immunodeficiency Diseases and Allergy	-	3 (internship)	3	-	204	204	11
	Total	12	14	26	204	884	1088	-

Table 3. Non-Core Courses (Electives)

Code of the Course	Title of the Course	Number of Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
19	Advanced Biostatistics Methods	1	-	1	17	-	17	-
20	Bioinformatics	1	-	1	17	-	17	-
21	Short-term Research Project	-	2	2	-	68	68	05
22	Psychoneuroimmunology	1	-	1	17	-	17	02
23	Nutrition & Immune System	1	-	1	17	-	17	02
24	Immunology of Aging	1	-	1	17	-	17	02
25	Reproductive Immunology	1	-	1	17	-	17	02
26	Exercise Immunology	1	-	1	17	-	17	02
27	Nanoimmunology	1	-	1	17	-	17	02
28	Ethics & Biosafety	1	-	1	17	-	17	-
	Total	9	2	11	153	68	221	

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