

## In the Name of God

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

## Medical Immunology Master of Science (MSc)

### Total Course Credits

- Compensatory: 1
- Core: 21
- Non-core (Electives): 1
- Thesis: 7

### Program Description

MSc. graduates will be able to provide services to the community in different fields such as medical diagnosis, evaluations related to organ transplantation, blood transfusion, cancer, allergy, autoimmune diseases, vaccine design and stem cell based immunotherapy.

Field of Immunology is a branch of medical sciences. In this science, the mechanisms of physiologic hemostasis, immune surveillance and the host defense against infectious agents are studied. In addition, molecular mechanisms underlying immune responses and disease onset are broadly discussed.

Future prospect of the field by the next 10 years would be the improvement of educational standards, research products and providing diagnostic and health care services concerning medical immunology. The main mission of the course is training committed, knowledgeable and skilled graduates in the field of medical Immunology.

### Admission Requirements

- Having a bachelor's degree (BSc) 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:
  - Performing experiments
  - Working in professional environments
  - Having skills in handling animals
  - Making a healthy and safe environment in both physical and psychological aspects
  - Using specialized equipment
  - 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	
1	Medical Information Systems	0.5	0.5	1	9	17	26	
2	Biostatistics	1	1	2	17	34	51	
3	Pathology	1	-	1	17	-	17	
4	Biochemistry	2	-	2	34	-	34	
5	Histology	1	-	1	17	-	17	
6	Introduction to Immunological Methods	-	1	1	-	34	34	


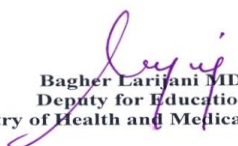
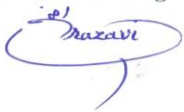
**Table 2. Core Courses**

Code of the Course	Title of the Course	Number of Credits					Teaching Hours					Prerequisite or Concurrent Courses
		Theoretical	Practical	Training	Internship	Total	Theoretical	Practical	Training	Internship	Total	
1	<b>Immunology 1</b>	2	-	-	-	2	34	-	-	-	34	-
2	<b>Immunology 2</b>	2	-	-	-	2	34	-	-	-	34	Immunology 1(07)
3	<b>Infectious Diseases Immunology</b>	2	-	-	-	2	34	-	-	-	34	Immunology 1(07)
4	<b>Immunopathology and Immunotherapy</b>	2	-	-	-	2	34	-	-	-	34	Immunology 1(07)
5	<b>Training Laboratory Methods in Immunology</b>	1	-	2	-	3	17	-	10	-	11	Immunology 1(07)
6	<b>Laboratory Animals</b>	0.5	0.5	-	-	1	9	17	-	-	26	-
7	<b>Cellular and Molecular Biology</b>	2	-	-	-	2	34	-	-	-	34	Biochemistry (04)
8	<b>Immunochemistry</b>	1	-	-	-	1	17	-	-	-	17	-
9	<b>Immunohematology and Blood Banking</b>	1	-	-	-	1	17	-	-	-	17	-
10	<b>Seminar</b>	2	-	-	-	2	34	-	-	-	34	Immunology 1 (07)
11	<b>Internship</b>	-	-	-	1	1	-	-	-	68	68	Training laboratory methods in immunology (11)
12	<b>Dissertation</b>	7										

	<b>Total</b>	26	
--	--------------	----	--

**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	
1	Immunopharmacology	1	-	1	17	-	17	Immunology 1
2	Research Methodology	1	-	1	17	-	17	
3	Bioinformatics	1	-	1	17	-	17	
4	Principles of Paper Writing	0.5	0.5	1	9	17	26	
5	Entrepreneurship	1	-	1	17	-	17	
6	Laboratory Economics Management	1	-	1	17	-	17	

<p>Jamshid Hajati PhD Secretariat of the Council for Education of Health and Basic Medical Sciences (Undergraduate and Postgraduate)</p> 	 <p>Bagher Larijani MD Deputy for Education Ministry of Health and Medical Education</p>	<p>Seyed Mansour Razavi MD Secretary of the Supreme Council for Medical Sciences Planning</p> 
---	--	---