جمهوری اسلامی ایران
وزارت بهداشت، درمان و آموزش پزشکی

Islamic Republic of Iran

Ministry of Health and Medical Education- Deputy of education

MSc Medical Immunology – Course details

1. Course description

The MSc in Medical Immunology has been designed to provide the students with the theorical and practical knowledge of hemostasis mechanisms, immunologic care, and defense against pathogens and pathogenic agents. Graduates will be able to work and conduct research in the fields of diagnosis, organ transplant, blood transfusion, cancer and malignant disorders, allergic diseases, auto-immune disorders, vaccine and sera production, immunotherapy and employing the stem cells for therapeutic goals.

2. Admission requirements*

- Students must be eligible with to enter the higher education regarding the ministry regulations for entering the program.
- Students must have obtained a bachelor's degree from an accredited university in the following programs: medical laboratory sciences, immunology, biochemistry, biotechnology, biology (animal biology, cellular and molecular biology, microbiology, and genetics), bacteriology, microbiology, medical virology, parasitology, and physiology.
- Taking the entrance exam**

* Any changes regarding the admission requirements could be found in Medical MSc Guidebook which publishes for each coming academic year.

** For further information about the entrance exam, see table 3.

3. Career and professional perspective

- Graduates may start their career at:
- Educational context
- Education and research centers
- Medical laboratories
- Centers for manufacturing pharmaceutical products and diagnostic/therapeutic kits
- Centers for manufacturing vaccines and sera
- Organ transplant laboratories
- Knowledge-based companies
- Incubation centers
- Medical and health care provision centers

4. Expected competencies

General competencies

- Communication skills
- Teaching and training
- Critical thinking and problem solving
- Research and writing scientific papers
- Professionalism

Special competencies

- Conducting experimental procedures
- Working in professional environments
- Skills for working with animal models
- Optimum and safe usage of equipment and facilities
- Measurement and calibration, quality control
- Providing the environment with physical and mental health

5. Teaching and Learning

Educational strategies

- Task-based education
- Problem-based education
- Lab-based education
- Blended education

Educational methods

- Workshop, focus group, journal club, and case presentation
- Seminars and conferences in local, interdisciplinary, and intra-university context
- Tele-education
- Self-education and self-study
- Participation in undergraduate education

6. Student assessment (formative and summative)

- Oral and written exams
- OSLE
- Portfolio (logbook, certificates of completion, quizzes, and published papers)

7. Course details*

core credits: 19 Non-core credits: 2 Thesis: 7

* Students may have to pass compensatory courses due to department recommendation and university post-graduate board confirmation.

Table 1. Core credits

Course code	Course title	Count of credits					Teaching hours					Courses of prerequisite/ concurrent
		total	theorical	practical	apprenticeship	internship	total	theorical	practical	apprenticeship	internship	
07	Immunology (1)	2	2	-	-	-	34	34	-	-	-	-
08	Immunology (2)	2	2	-	-	-	34	34	-	-	-	Immunology (1)
09	Infectious disease immunology	2	2	-	-	-	34	34	-	-	-	Immunology (1)
10	Immunopathology and immunotherapy	2	2	-	-	-	34	34	-	-	-	Immunology (1)
11	Experimental methods in immunology	3	1	-	2	-	119	17	-	102	-	Immunology (1)
12	Model animals	1	0.5	0.5	-	-	26	9	17	-	-	-
13	Cellular and molecular biology	2	2	-	-	-	34	34	-	-	-	Biochemistry
14	Immunochemistry	1	1	-	-	-	17	17	-	-	-	-
15	Immunohematology and blood bank	1	1	-	-	-	17	17	-	-	-	-
16	Seminar	2	2	-	-	-	34	34	-	-	-	Immunology (1)
17	Internship	1	-	-	-	1	68	-	-	-	68	Experimental methods in immunology
18	Thesis	7										
Total		26										

Table 2. Non-core credits*

Course code	Course title	Count of credits					Teaching hours					Courses of prerequisite/ concurrent
		total	theorical	practical	apprenticeship	internship	total	theorical	practical	apprenticeship	internship	
19	Immunopharmacology	1	1	-	-	-	17	17	-	-	-	Immunology (1)
20	Research methodology	1	1	-	-	-	17	17	-	-	-	-
21	Bioinformatics	1	1	-	-	-	17	17	-	-	-	-
22	Principles of scientific writing	1	0.5	0.5	-	-	26	9	17	-	-	-
23	Entrepreneurship	1	1	-	-	-	17	17	-	-	-	-
24	Management of laboratory economics	1	1	-	-	-	17	17	-	-	-	-

***** The student must pass one of the above courses based on thesis title and supervisor and department confirmation.

Table 3. Entrance exam details

content	weight
General immunology	6
Cellular and molecular biology	2
Medical biochemistry	1
Microbiology	1
English proficiency	3