Molecular medicine
Degree: Doctor of Philosophy (Ph.D.)

Table 1. Compensatory Courses

Course Code	Title of the Course	Credits			Teaching Hours			Prerequisite courses
		Theoretical Credit	Practical Credit	Total Credits	Theoretical Hours	Practical Hours	Total Hours	
01	Medical information systems*	0.5	0.5	1	9	17	26	---
02	Research Methodology and Biostatistics	2	---	2	34	---	34	---
03	Animal cell culture	1	1	2	17	34	51	---
04	Practical medical genetics		2	2	---	68	68	---
05	Laboratory animals	0.5	0.5	1	9	17	26	---
06	Cellular and molecular Biology	2	---	2	34	---	34	---
07	Medical genetics	2	---	2	34	---	34	---
08	Medical biochemistry	2	---	2	34	---	34	---
09	Immunology	1	1	2	17	34	51	---
10	Microbiology	1	1	2	17	34	51	---
11	Physiopathology of cardiovascular	4	---	4	68	---	68	---
12	Physiopathology of gastrointestinal	4	---	4	68	---	68	---
13	Semiology	1	---	1	17	---	17	---
14	Basic epidemiology	2	---	2	34	---	34	---
15	Basic pharmacology	2	---	2	34	---	34	---
Total				31				

*This course is compulsory to take for all students who had not taken the course previously.

Students should select up to a maximum of 24 credits from Table 1 in accordance with the regulations set by the supervisor and the post-graduate committee of the university.

Table 2. Core Courses

Course Code	Title of the Course	Credits			Teaching Hours			Prerequisite courses
		Theoretical Credit	Practical Credit	Total Credits	Theoretical Hours	Practical Hours	Total Hours	
16	Biochemistry of proteins	2	---	2	34	---	34	---
17	Medical molecular genetics	2	---	2	34	---	34	---
18	Cell signaling and system biology	2	---	2	34	---	34	---
19	Bioinformatics	0.5	1.5	2	9	51	60	---
20	Genetic engineering and molecular biotechnology	2	2	4	34	64	102	17
21	Target therapy	2	---	2	34	---	34	20
22	Molecular basic of diseases	4	---	4	68	---	68	-
23	Molecular diagnostic of diseases	2	2	4	34	64	102	17, 20
24	Thesis	-	-	20		-	-	-

Table 3. Non-core (Electives) Courses

Course Code	Title of the Course	Credits			Teaching Hours			Prerequisite courses
		Theoretical Credit	Practical Credit	Total Credits	Theoretical Hours	Practical Hours	Total Hours	
26	Bioethics	2	---	2	34	---	34	---
27	Personal medicine	2	---	2	34	---	34	23
28	Mechanism of organ regenerative	2	---	2	34	---	34	---
29	News in molecular medicine	2	---	2	34	---	34	17,20,21, 22
30	Protein engineering	2	---	2	34	---	34	---
31	Nano biotechnology	2	---	2	34	---	34	---
32	Passive defense	2	---	2	34	---	34	---

Students should select 4 credits from table 3 in accordance with the regulations set by the supervisor and the post-graduate committee of the university.