Medical Biotechnology
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 Informatics Systems	0.5	0.5	1	9	17	26	---
02	Cellular and Molecular Biology	2	---	2	34	---	34	08
03	Biosafety and Principles of Working in Laboratory	1	---	1	17	---	17	---
04	Research Methodology and Principles of Article Writing	1	---	1	17	---	17	---
05	Electrochemistry	1	---	1	17	---	17	---
06	Immunochemistry	0.5	0.5	1	9	17	26	---
07	Practical Microbiology	---	1	1	---	34	34	---
08	Cell Culture	0.5	0.5	1	9	17	26	---
09	Principles of Working with Laboratory Animals	0.5	0.5	1	9	17	26	---
Total				10				

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

Students should select up to a maximum of 8 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	-
10	Principles of Molecular Genetics and Genetic Engineering (Theory)	2	-	2	34	-	34	-
11	Bioethics	1	-	1	17	-	17	-
12	Seminar	-	1	1	-	34	34	-
13	Computational and Systems Biology	1	1	2	17	34	51	-
14	Genetic Engineering (Practice)	-	3	3	-	102	102	10
15	Protein Engineering	2	-	2	34	-	34	-
16	Principles and Applications of Engineering Processes in Biotechnology	1	1	2	17	34	51	05
17	Applications of Vaccines and Antibodies in Medical Biotechnology	1	-	1	17	-	17	02, 06
18	Nanobiotechnology	1	-	1	17	-	17	-
19	Principles of Standardization and Safety of Biological Products	1	-	2	17	-	68	03
20	Thesis			28				

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	
21	Applications of Stem Cells in Medical Biotechnology	1	1	2	17	34	51	08
22	Applications of Microarrays and Microfluidics in Diagnosis	1	1	2	17	34	51	05, 18
23	Economy, Innovation and Intellectual Property in Biotechnology	1	1	2	17	34	51	19

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.