



Shahid Beheshti University of Medical Sciences
Faculty of Medicine, Department of Clinical Biochemistry

Required Course List for a Master's degree in Clinical Biochemistry

	Code	Name of the course	Number of credits			Course hours			Pre-requisite courses
			Theoretical	Practical	Total	Theoretical	Practical	Total	
Remedial courses Students who have not completed the required prerequisite courses must enroll	01	Medical Information Systems*	0.5	0.5	1	9	17	26	
	02	Basic Biochemistry**	1.5	0.5	2	26	17	43	
	03	General Physiology	2	-	2	34	-	34	
	04	General Immunology	1.5	0.5	2	26	17	43	
	05	Hematology	1.5	0.5	2	26	17	43	
	06	Microbiology	1.5	0.5	2	26	17	43	
	07	Technical English	2	-	2	34	-	34	

Total Credits: 13

	Code	Name of the course	Number of credits			Course hours			Pre-requisite courses
			Theoretical	Practical	Total	Theoretical	Practical	Total	
Core courses	08	Laboratory methods and equipment operation	2	1	3	34	34	68	
	09	Metabolic pathways and disorders	2	-	2	34	-	34	
	10	Enzymology	2	-	2	34	-	34	
	11	Clinical biochemistry 1	3	-	3	51	-	51	
	12	Clinical biochemistry 2	2	-	2	34	-	34	
	13	Clinical internship***	-	1	1	-	51	51	11, 12
	14	Molecular diagnostic methods	1.5	0.2	2	34	17	51	
	15	Hormone biochemistry	2	-	2	34	-	34	09
	16	Seminar	1	-	1	17	-	17	
	17	Medical laboratory internship****	-	2	2	-	102	102	08, 09, 10, 11, 12, 13, 15
18	Thesis			8				All theoretical and practical courses	

Total Credits: 28

	Code	Name of the course	Number of credits			Course hours			Pre-requisite courses
			Theoretical	Practical	Total	Theoretical	Practical	Total	
Elective courses	19	Immunochemistry	1	1	2	17	34	51	
	20	Research Methodology	2	-	2	34	-	34	
	21	Entrepreneurship and Industry Collaboration	1	-	1	17	-	17	
	22	Nutritional Biochemistry	2	-	2	34	-	34	
	23	Membrane Biochemistry and Transport	2	-	2	34	-	34	
	24	Bioinformatics	0.5	0.5	1	9	17	26	
	25	Systems Biology	0.5	0.5	1	9	17	26	
	26	Laboratory Internship*****	-	2	2	-	102	102	

Total Credits: 12

* Passing this course is mandatory for all students who have not previously passed it.

** If necessary, this course can be offered as one of the related courses at the discretion of the department.

*** The hospital internship involves working in the clinical departments of a teaching hospital, while the laboratory internship takes place in a medical center's laboratory.

**** Given that the hospital internship aims to provide practical application of the theoretical concepts taught in Clinical Biochemistry 1 and 2, student attendance at the hospital must coincide with these courses.

***** his course is open to students who can perform laboratory experiments independently and contribute to the work of a medical center's laboratory.

Curriculum for Clinical Biochemistry Master's Students				
	First Semester	Second Semester	Third Semester	Fourth Semester
Remedial courses	Medical Information Systems (0.5 credit theory, 0.5 credit practical)			
Core courses	Laboratory Methods and Equipment Operation (3 credits)	Clinical Biochemistry I (3 credits)	Internship in Medical Diagnostic Laboratory (2 credits)	Thesis (8 credits)
	Metabolic Pathways and Disorders (2 credits)	Clinical Biochemistry II (2 credits)	Hospital Internship (1 credit)	
	Enzymology (2 credits)	Molecular Diagnostic Methods (2 credits)		
		Hormone Biochemistry (2 credits)		
Elective courses	Research Methodology (2 credits)	Bioinformatics (1 credit) Entrepreneurship (1 credit)	Seminar (1 credit)	
	9	11	4	8

- **Total Credits: 32**

- **Overall Structure:**

- 20 credits of required courses
- 8 credits for the thesis
- 4 credits of elective courses