



*Faculty of Medicine
Suez Canal University*

*Medical Biochemistry & Molecular Biology Department
Program Specification- MSc*

PROGRAM SPECIFICATIONS

Program Title:

**Master Degree of Medical
Biochemistry**

Code:

BCBC



Program Specification

A- Basic Information

- 1- Program Title: **Master Degree of Medical Biochemistry**
- 2- Program Type: **Single** **Double** **Multiple**
- 3- Department (s): **Medical Biochemistry & Molecular Biology Department**
- 4- Coordinator: **Prof. Gehan Hussein Ibrahim**
- 5- External Evaluator(s) : **Prof. Hanan Hosny**
- 6- Last date of program specifications approval: the bylaws of the Master program in **Medical Biochemistry** in the Faculty of Medicine, Suez Canal University were approved by the Supreme Council of Universities on 2016
- 7-Date of specification revision approval: **2019**
- 8- **Number of credit points for this degree: 120 CP**

B- Professional Information

1- Program Aim

The overall goals of the program are to develop a medical biochemist with the following characteristics:

- 1- Capable of describing the molecular structure of all the human tissues and organs at normal conditions and their changes in different diseases.
- 2- Understands the different biochemical reactions occurring inside the human body at various physiological states and their changes in pathological conditions. He/she should implement the importance of these reactions with their controlling mechanisms.
- 3- Masters all the biochemical techniques that help him/her in analysis of all the human body fluids, cells and tissues to detect any abnormal changes in human body.
- 4- Appreciates the role of research in development of medicine and has the knowledge and skills of research methodology and capable of doing academic research.
- 5- Using the most recent technology in data collection and apply it to research. He/she should have the skills and attitude of self-learning and continuous education.
- 6- Running and managing a biochemical diagnostic lab with emphasis on quality assurance and quality control protocols. He/she should be skillful in communicating as a medical



consultant with other clinicians for explanation and interpretation of obtained biochemical data.

2- Intended Learning Outcomes (ILOs) of the program

By the end of this program, participants should be able to:

a- Knowledge and Understanding:

- a1** Develop and maintain a knowledge of the main subjects related to medical Biochemistry & molecular biology
- a2** Demonstrate updated knowledge in the basic sciences necessary for effective consultation in biochemistry.
- a3** Demonstrate proficiency in evaluating and presenting biochemical findings from appropriate peer-reviewed journals.
- a4** Recognize the principles of the research design, ethics, implementation, and interpretation and be able to design a study that may help in development of medicine.
- a5** Recognize the unique aspects of laboratory medicine practice and demonstrate awareness and understanding of quality control (QC) and quality assurance procedures as required.
- a6** Recognize basic of ethics and medico legal aspects of professional practice, related to biochemistry.

b- Intellectual Skills

- b1-** Demonstrate problem solving skills.
- b2-** Use all relevant information resources to acquire and evaluate evidence-based information.
- b3-** Explain the different Biochemical pathways, and detect the site of error; if present.
- b4-** Select and integrate the investigations required to diagnose biochemical defect
- b5-** Get access of medical biochemistry & molecular biology information resources and update their knowledge in this field.
- b6-** Apply critical appraisal and judgment skills of scientific papers.
- b7-** Apply concepts of research ethics including dealing with animals
- b8-** Put a plan for self-development
- b9-** Assess risks associated with using hazardous materials used in experimental work



c- Professional and Practical Skills

- c.1 Competently perform biochemical laboratory techniques in accordance with health and safety guidelines
- c.2 Correctly perform quality control and assurance procedures
- c.3 Apply regulatory issues pertaining to the use of human subjects in research.
- c.4 Recognize and respond to moral, ethical and safety issues, which directly pertain to the biomedical science
- c.5 Carry out research experiments
- c.6 Evaluate different methods and tools available related to biochemistry lab.

d- General and Transferable Skills

- d.1 Communicate effectively with peers and group facilitators
- d.2 Use the medical library and electronically mediated resources.
- d.3 Perform self-evaluation and specify his own educational needs
- d.4 State regulations and outcomes for evaluation of others
- d.5 Function effectively in a group and manage small and large groups effectively.
- d.6 Manage time effectively
- d.7 Demonstrate self-learning, and self-regulated learning skills.

3- Academic Standards

3a External References for Standards (Benchmarks)

The generic Academic Reference Standards (ARS) of NAQAAE for Postgraduate (2009)

3b Comparison of Provision to External References

See attached document

4- Curriculum Structure and Contents

4a- Program duration: the program lasts for a minimum of 2 academic years and maximum 5 years, as specified in the internal bylaws for postgraduate studies based on credit points system in the Faculty of Medicine, Suez Canal University approved on February 7th, 2016.

4b- Program structure:

Master Program Credit points (CP) structure:

Total needed credit points for getting master degree 120 CP

The program consists of **First part 30 CP, Thesis 30 CP, and Second part 60 CP**

1. The first part of the program: 30 CP, its duration (15 weeks) for one academic semester. It includes
 - a. A course in Research Methodology planned and held in the Community Medicine Department of the Faculty of Medicine, Suez Canal University. This part includes 4 CP.



- b. A courses in Research ethics planned and held in the Forensic and Toxicology Department of the Faculty of Medicine, Suez Canal University. This part includes 2 CP.
 - c. A course in basic virology planned and held in the Microbiology Department of the Faculty of Medicine, Suez Canal University. This part includes 6 CP.
 - d. A course in immunology planned and held in the Microbiology Department of the Faculty of Medicine, Suez Canal University. This part includes 6 CP.
 - e. The students should select one course either pharmacology, microbiology, physiology or genetics courses. This part includes 10 CP.
 - f. One elective course, the students should select one elective among six courses. This part includes 2 CP.
2. Master thesis: 30 CP, not included in the total marks for master degree, the candidate has the right to register the thesis protocol after 6 months from the degree registration. The thesis defense is allowed after 6 months from the date of the faculty council approval on the thesis protocol and passing the first part exam.
 3. The second part of the program: 60 CP, its duration (45 weeks) for 3 consecutive academic semesters. The second part comprises the specialized courses in Medical Biochemistry & Molecular Biology, planned and held in the Medical Biochemistry & Molecular Biology Department. This part lasts for 1.5 years ending by written, oral and practical exams.

4bi- No. of hours per week: 2 CP / week which equivalent 50 hours/ week, including lectures, tutorials, self-learning and hands-on training.

4bii- No. of credit Points: the Master program is 120 Credit Points

Every credit point include 25 working hour (30% = 7 hours for face to face learning activities, and 70% =18 hours for self-learning activities).

5-Program Courses

5.1- Level/Year of Program: 1st part MSc

Code No.	Course Title	No. of hours /week			Programme ILOs Covered (By No.)
		Lect.	Lab.	Tutorial	
RB	Research methodology and Biostatistics				a3-a5, b6, c6, d1 and d2
RE	Research Ethics				a5, c1, c2, c4, c5, c7, d1-d5
BCBC01	Basic virology				a1, a2, d1, d3-d5
BCBC02	Immunology				a1, a2, d1, d3-d5
BCBC03, BCBC04, BCBC05	Pharmacology, Microbiology, Physiology				a1, a2, a6, b4, c3, d1, d3-d5



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or BCBC06	or Genetics				
E	Elective Course*				a3, a4, a5, b4-b6, c3, d1, d3-d5

1 st part courses	No. of Credit points	Written			Oral exam	Practical exam
		No of Papers	Duration	Marks		
Research methodology and Biostatistics	4	1	2 hours	80		
Research Ethics	2	1	1 hour	40		
Basic virology	6	1	2 hours	90	30	-
Immunology	6	1	2 hours	85	15	20
Pharmacology, Microbiology, Physiology or Genetics	10	1	3 hours	145	20	35
Elective Course	2	1	1 hour	40		
Total	600 marks (30 credit points)*					

*E: Student should select one course of the following as an elective course:

One elective course has 2 CP. The students should select one elective in first part of the Master degree from the following courses:

E01	Evidence Based medicine	(Community Department)
E02	Scientific Writing	(Medical Education Department)
E03	Quality in Medical Education	(Medical Education Department)
E04	Infection Control	(Microbiology Department)
E05	Critical Appraisal	(Community Department)
E06	Communication Skills	(Medical Education Department)

5.2- Level/Year of Programme: 2nd part MSc

Code No.	Course Title	No. of hours /week			Programme ILOs Covered (By No.)
		Lect.	Lab.	Tutorial /others*	
BCBC07	Medical Biochemistry & Molecular Biology	5	6	5	a1-a6, b1-b6, c1-c7 and d1-d6

* others include seminars self-training and discussions

2 nd part Courses	No. of Credit points	Written Exam			Oral exam	Practical Exam	Continuous assessment *(Portfolio)
		No of Papers	Duration	Marks			
Medical Biochemistry & Molecular Biology	30 (Theoretical) 25 (Practical)	2	3 hours For each paper	165 for each paper	110	330	330



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Scientific activities**	5						
Total		1100 score (60 credit points)***					

*Portfolio scores distributed in the different parts of the portfolio and its total score included among the total mark of the second part

**The 5 points of the scientific activities are not included in the total marks

***Every credit point equal 20 marks

5.3- Thesis: A faculty senior & junior supervisor from the staff members are nominated by the department council to prepare a proposal of the thesis protocol after the selection of a subject that is complementary to the research plans of the department. Data collection, methodologies, study question, time table, ethical considerations and budget are formulated by the candidate under guidance of his/her supervisors into a research project. The research protocol is then presented by the candidate and discussed openly at least a week before one of the department councils to be approved and diverted to the Faculty research committee where it is subjected to a critical appraisal to meet the research basic standards set by the committee. The final approvals of the research protocol are then issued by the committee of post graduate studies, the Faculty and University Council to be registered. The candidate has the right to register his/her thesis protocol after 6 months from the degree registration. The first time for thesis defense after 6 months from the date of the faculty council approval on the thesis protocol and passing the first part exam.

N.B. Thesis represents 30 credit points not included in the total mark for master degree.

6-Program Admission Requirements

- The program accepts candidates with Bachelor degree in Medicine and Surgery with minimum good grade & very good in biochemistry.
- Registration for the program opens 2 times/year, according to the internal bylaws for postgraduate studies of the Faculty of Medicine, Suez Canal University.

7- Regulations for Progression and Program Completion

The regulations for program completion follow the regulations of Master degree of medical Biochemistry & Molecular Biology in the Faculty of Medicine, Suez Canal University approved by the Supreme Council of Universities.

First part

Passing level 60% of total marks of the exam

At least 50% passing level of the total written exam marks

Second part

Passing level 60% of total marks of the exam



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Passing level 60% is prerequisite for MSC degree

Thesis/Assay

Approval by a committee of internal and external examiners is required for getting the MSc. degree.

8- Evaluation of Program Intended Learning Outcomes (ILOs)

Evaluator	Tool	Sample
1- Postgraduate students	Needs assessment questionnaires	Random sample of participants
2- Alumni	Self-administered questionnaires	Comprehensive sample
3- Stakeholders	Self-administered questionnaires	Random sample
4-External Evaluator(s) (External Examiner(s))	External audit of the program specifications	

Annex Courses Specifications

Head of Medical Biochemistry & Molecular Biology Department

Prof. Moushira Abdel-Wahab Mahmoud

February 2019