



PROGRAM SPECIFICATIONS

Program Title:

MD of Medical Biochemistry

Code:

BCBC



Programme Specifications

A- Basic Information

1. Programme Title: MD of Medical Biochemistry
2. Programme Type: Single Double Multiple
3. Department (s): Medical Biochemistry & Molecular Biology
4. Coordinator: Prof. Moushira AbdelWahab Mahmoud
5. External Evaluator(s): Prof. Hanan Hosny
6. Last date of program specifications approval: the bylaws of the MD 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 program specification revision approval: 2018
8. Number of credit points for this degree: 180 CP

B- Professional Information

1- Program Aim

The MD program in medical biochemistry is designed to

1. Prepare students for productive careers in biochemistry and molecular biology as both researchers and educators.
2. Provide students with a deep understanding of the chemical principles governing the workings of biological macromolecules.
3. Give students a substantial understanding of the chemical and molecular events in biological processes.
4. Enable students to develop skill in the recognition of meaningful problems and questions for research in Biochemistry and Molecular Biology.
5. Enable students to possess technical skill in laboratory manipulation.
6. Help students to acquire oral, written, and visual communication skills.
7. Enable candidate to demonstrate skill in designing experimental protocols and in conducting productive independent research.

2. Intended Learning Outcomes (ILOs) of the program

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

a- Knowledge and Understanding:

- a1. Describe the structure and function of biological molecules and their assemblies.
- a2. Discuss key metabolic reactions and pathways in the biosynthesis and degradation of biological molecules, including energy metabolism.



- a3. Discuss the key processes involved in the control of metabolism, including signal transduction and the arrangement, regulation and expression of genes.
- a4. Recognize appropriate scientific approaches and technical methods used in the subject: observations, experiments and modeling, as well as methods used in the analysis of data and experimental results.
- a5. Acquire most recent knowledge within selected biochemistry area and the research methods used.
- a6. Identify basic and medicolegal aspects and ethics of professional practice and scientific research and its reflection on environment.
- a7. Identify basis and principles of quality assurance in biochemistry lab.
- a8. Demonstrate advanced knowledge of biostatistics

b- Intellectual Skills

- b1 Demonstrate problem solving skills.
- b2 Demonstrate critical appraisal skills
- b3 Conduct a scientific research and are aware of the rights and obligations of scientists, including matters concerning discretion, copyright, ethics and intellectual property as regards results and data.
- b4 Write scientific papers
- b5 Assess risk in professional practice
- b6 Maintain and improve his standards of knowledge and training by critical self-education.
- b7 Make professional decision in relation to different professional sequences
- b8 Determine levels of evidence in medicine and their translation into evidence-based practice.

c- Professional and Practical Skills

- c1. Perform all laboratory tests required in the course specifications.
- c2. Select appropriate tools and methods for presenting data and information
- c3. Conduct an effective learning session using the appropriate learning facilities and learning aids.
- c4. Update their knowledge in the field of innovative strategies in medical biochemistry & molecular biology.
- c5. Apply regulatory issues pertaining to the use of human subjects in research.

d. General and Transferable Skills

- d.1 Demonstrate effective communication skills.
- d.2 Effectively utilize a range of information sources including information technology / health informatics.
- d.3 Educate and evaluate performance of peers
- d.4 Critically evaluate their personal performance both as an individual and within a team.
- d.5 Demonstrate capacity for self-learning and independent thinking and to utilize problem solving skills and participate in life-long learning activities



- d.6 Use different resources to obtain knowledge and information.
- d.7 Demonstrate skills in working collegiately and effectively with others as a member of a team.
- d.8 Conduct both individual consultations and presentations at multidisciplinary conferences that are focused, clear, and concise.

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 3 academic years and maximum 7 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:

PhD Program Credit points (CP) structure:

Total needed credit points for getting PhD degree 180 CP

The program consists of **First part 30 CP, Thesis 50 CP, and Second part 100 CP**

1. **The first part of the program:** 30 CP, its duration (15 weeks) for one academic semester. The first part comprises the following:
 - 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 8 CP.
 - b. Two electives each one has 2 CP. The students should select one elective which has not been selected in the Master Degree.
 - c. The specialized courses in medical biochemistry & molecular biology (theoretical & practical), planned and held in the Medical Biochemistry & Molecular Biology Department. It includes 18 CP.
- 2- **PhD thesis:** 50 CP, no scores for thesis. 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 2 years from the date of the faculty council approval on the thesis protocol.
- 3- **The second part of the program:** 100 CP, its duration (75 weeks) for 5 consecutive academic semesters. The second part comprises the specialized courses in medical biochemistry and molecular biology, planned and held in the Medical Biochemistry & Molecular Biology Department. This part lasts for 2 years ending by written and practical exams.

3bi- No. of credit Points: *the MD program is 180 credit Point system.*

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: First part of MD (30 CP)

Code No.	Course Title	No. of hours /week			Programme ILOs Covered (By No.)
		Lect.	Lab.	Tutorial	
BR	Research methodology and Biostatistics				a4, a6, a7, b1, b2, b4-b6, c2, c5, c7, d1-d6, d8
BCBC21	Medical Biochemistry & Molecular biology I	2	4	2	a1, a4, a5, b1, b3-b6, c1-c8, d1-d8
E	Two elective courses*				a6, b1, b, c2,c5, d1-d5, d8

*Two elective courses each one has 2 CP. The students should select two elective which has not been selected before in the Master Degree.

- 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)

1 st part courses	No. of Credit points	Written			Oral exam	Practical exam
		No of Papers	Duration	Marks		
Research methodology and Biostatistics	8	1	3 hours	160		
Medical Biochemistry & Molecular biology I	18	1	3 hours	205	35	120
Two Elective courses*	2+2	1+1	1 hour+ 1 hour	40+40		
Total	600 marks (30 credit points)					

5.2- Level/Year of Program: Second part of MD program (100 CP)

Code No.	Course Title	No. of hours /week			Programme ILOs Covered (By No.)
		Lect.	Lab.	Tutorial /others*	
BCBC52	Medical Biochemistry & Molecular Biology II	5	6	7	a2- a7, b1-b6, c1-c8, d1-d8

* 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 II	60 (Theoretical) 30 (Practical)	2	3 hours For each paper	360 for each paper	180	360	540
Scientific activities**	10						
Total		1800 score					

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

**The 10 points of the scientific activities are not included in the total marks

5.3- Thesis: A Professor and faculty senior & junior supervisor from the staff members are nominated by the department council to supervise the PhD thesis of each student. They 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 2 years from the date of the faculty council approval on the thesis protocol.

6- Program Admission Requirements

- The program accepts candidates with Master in Medical Biochemistry with a grade of GOOD at least.
- 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 general regulations for the Faculty of Medicine, Suez Canal University for PhD approved by the Supreme Council of Universities. The program is considered complete with the accomplishment of 2 summative assessments



(for the first and the second parts) and the defense of a thesis developed and submitted for the purpose of acquiring the degree.

First part

- Passing level 60% of total marks of the exam and at least 50% passing level of the total written exam marks

Second part

- Passing level 60% of total marks of the exam
- Passing level 60% total of practical and oral exam

Thesis/Assay

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

8- Evaluation of Program Intended Learning Outcomes (ILOs)

Evaluator	Tool	Sample
1- Postgraduate students	Needs assessment questionnaires	Random sample of participants
2- Alumni (N/A since this is the first time to implement the program)	N/A	N/A
3- Stakeholders	Self-administered questionnaires DELPHI Focus groups	According to the method
4-External Evaluator(s) (External Examiner(s))	External audit of the program specifications	

Head of Medical Biochemistry & Molecular Biology Department

Prof. Moushira AbdelWahab Mahmoud

February 2019