



Program Specification for MD Degree in Physiology

Program type: Single

Department offering the program: Physiology

Program Code: PHYS 900

Total Credit points: 245

Academic year: 2011/2012

Program coordinators: Dr Maha Gamal, Professor of Physiology
Dr Maha Sabri, Professor of Physiology
Dr. Hanan Moubarak, Assistant professor of
Physiology

External Evaluator: Dr. Ibtissam Abou Shadi, Professor of
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I. Aim of the Program

The program in physiology aims at preparing academic researchers and instructors with the specialized advanced knowledge, skills and attitude necessary to achieve excellence in teaching and research in the field of general and specialized Medical Physiology and health and in sharing in the implementation of Kasr Aini faculty of Medicine vision and mission.

II. Intended Learning Outcomes of the Program (ILOs)

A. Knowledge and understanding: By the end of the program the candidate should;

1. Demonstrate an in depth knowledge of molecular and cellular physiology.
2. Explain the physiological basis of performance of different body system .
3. Describe in depth the functions of two body systems that are chosen as part of the elective courses taken.
4. Demonstrate an advanced level of understanding of the physiological background of Applied Physiology in medical practice.

B. Intellectual skills: By the end of the program the candidate should be able to;

1. Develop and implement research projects that bear critical relevance to medical practice.
2. Critically appraise research results and evaluate research papers
3. Interpret clinical physiology test results
4. Write and publish research papers applying international publishing standards.
5. Interpret the essential molecular mechanisms that underlie the mechanisms of functions of different body organs and systems

C. Professional and practical skills: By the end of the program the candidates should be able to;

1. Effectively teach theoretical physiological knowledge and perform and demonstrate practical experiments to students at the undergraduate and postgraduate levels.
2. Effectively perform and interpret results of practical techniques relevant to their area of specialization and research as well as those relevant to different animal preparations used in the teaching laboratory.
- .3. Incorporate research and medical ethics in all areas of practice
4. Effectively perform clinical physiology testing in their specialty systems as required in a clinical setting.
5. Effectively identify required molecular measurements needed to interpret perceived body functions in their areas of specialization.

D. General and transferable skills: By the end of the program the candidates should be able to;

1. Prepare and present scientific presentations in conferences and relevant specialized scientific communities.
2. Work separately and/ or in teams of different health professionals to achieve predefined objectives.
3. Demonstrate ability for continuous professional development.
4. Demonstrate time management skills through effectively working to deadlines.
5. Apply elements of quality management to areas of research and education
6. Respond effectively to patient concerns during physiological clinical testing
7. Effectively communicate with other health care providers to achieve care provision and implement research plans according to predefined standards.
8. Share and perform all activities required for course preparation and implementation at both undergraduate and postgraduate levels.

III. Academic standards

1. Academic reference standers: The academic standers of histology program is adopted and accredited by the departmental council
2. External references for standards:

The program of MD in Physiology given in the faculty of Medicine comprises a combination of a research element as well as a learning taught element. The program is assessed by both a thesis viva as well as an exam that is in written, oral and practical forms. In addition, specialized training is offered and is outlined and documented in a logbook that is countersigned and continuously monitored by the assigned program coordinator.

N.B: Our program differs from most of the international programs which are PhD degrees based mainly on a research component. However, the standards of other Egyptian universities offering the same program have been reviewed and the standards and regulations of both the supreme council for universities and the accreditation body for higher education have been followed.

V. Program Structure and Contents

Program duration: The program is based on a minimum duration of two years duration after completion of a three years MSc Degree.

Program structure:

- Total Credit points 245 credit points distributed as:
Masters degree: 3 years (145 credit points)+ Doctorate degree over 2 years (100 credit points)
- **The Doctorate degree credit points are distributed as follows:**
 - **compulsory courses- (table 1) 8 credit points**
The compulsory courses comprise the following:
 - advanced system physiology 5 credit points
 - advanced molecular and cellular physiology 3 credit points
 - **Elective courses : Two courses each evaluated at one credit point 2 credit points**

The student chooses two of the following: (According to availability of courses provided by the department annually)

- Advanced Neuromuscular and central nervous system Physiology (PHYS 904 ANP)
 - Advanced Skin Physiology (PHYS 904 ASP)
 - Advanced Eye Physiology (PHYS 904 AEP)
 - Advanced Renal Physiology (PHYS 904 ARP)
 - Advanced Cardiovascular Physiology (PHYS 904 ACP)
 - Advanced Respiratory Physiology (PHYS 904 ARP)
 - Advanced Endocrine System and Reproduction (PHYS 904 AESA)
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- **Scientific activities** **4credit points**
 - **Practical training program** **26 credit points**
 - **M.D Thesis** **60 credit points.**

(Table 1)

Courses		Credit Points		ILOs
Code Title	CPS	Total		
COMPULSORY COURSES				
PHYS 904 Ta	5	8	A:2,3,4 B:1,3 C:1,4 D:1,3,6,8	
PHYS 904 Tb	3		A:1, B:5, C:5	
ELECTIVE COURSES				
PHYS 904 ANP	1	2	A:3,4 B:3 C:2,4,5 D:1,3,6,8	
PHYS 904 ASP	1			
PHYS 904 AKP	1			
PHYS 904 ACP	1			
PHYS 904 ARP	1			
PHYS904 AERP	1			
PHYS904 AEP	1			
SCIENTIFIC ACTIVITIES				
PHYS904	4		A:1,2,3,4 B:1,2,4 C:1,3 D:1,2,3,4,5,	
Practical course				
PHYS904	26		A: 2,4 B:1,2,3,4,5 C:1,2,3,4,5 D:1,2,3,4,5,6,7,8	
THESIS				
	60		B:1,4 C:3,5 D:1,2,4,5,7	

MD Thesis:

All MD degree students should prepare a thesis in Physiology and a preference is given to topics from their area of elective specialties. The research and ethical committee must approve the protocol of the research. The thesis may include a review part and a research part. The thesis is supervised by one or more senior staff members and may include other specialties according to the nature of the research. The thesis should be evaluated and approved by a committee of three professors including one of the supervisors and an external professor.

Scientific Activities:

The candidates should actively participate in the scientific activities of the department such as:

- Seminars.
- Journal clubs.
- Scientific meetings.
- Workshops.
- Conferences.
- Thesis discussions.

Each activity is monitored and given credit points registered in a special section in the logbook. Candidates should collect the required points before allowed to sit for final exam.

VII. Assessment

A: Assessment Tools

- **Supervision and Monitoring of Training Program**

According to the Faculty of Medicine, Cairo University Bylaws for practical Training Programs, professors carry continuous assessment during the program. A practical training program logbook will be kept for each candidate to document all his/her practical activities as well as his/her participation in different scientific activities. The head of the department should allow the candidates to undergo the final examination when they complete their training program and collect the credit points needed.

- **Formal Assessment**

Final Exam

- **Advanced physiology** : Three -hour written exam formed of two papers (a and b) (including long essay and short essays)
 - Paper (a) : Advanced system physiology over two hours (PHYS 904 Ta)
 - Paper (b) : Advanced cellular and molecular physiology (PHYS 904 Tb) **over one hour**

- o In addition, a practical and an oral exam also form part of the assessment and their details are outlined in the assessment schedule.
- **Electives:** 2 elective course exams in two written exam papers (a and b) on one day for two hours including long/ short essays and MCQs

- **Assessment Schedule:**

The exam is formed of a three hour written exam in two papers for advanced system and cellular and molecular physiology (Physiology 904 Ta and Tb) as well as a second written exam covering both two elective courses over a two hours period. A practical and oral exam also forms part of the evaluation. The oral exam follows the written exam in time and is conducted by two panels formed of three examiners each and including the external examiner covering General, system and molecular physiology.

The members of the panel are Professors chosen according to their specialty in the departmental council meeting that precedes the exam.

The practical exam is usually formed of several (usually two) experiments conducted over a period of a week (sometimes more depending on the experiments) and presented and evaluated by two panels of examiners and the experiments cover general, system and cellular physiology.

C: Weighing Of Assessment

Courses		Marks			
Title	Code	Written	Oral	P*	Total
PHYS 904	Ta	100	70	80	250
PHYS 904	Tb	60	50	40	150
PHYS 904	(electives)	2x50			100
Total		260	120	120	500

P: practical exam

Remarks

- It is mandatory to pass all the papers of written exams separately.
- The passing mark in any written exam is $\geq 60\%$.

VIII. Evaluation

Evaluator	Tool	Sample
+1. Senior Students	Questionnaire at the end of the program	Sample of the postgraduate students
2. External Evaluators	Review the program and courses Attend the final exam.	Annual report

Date of approval by the department's council:

Signature:

Program Coordinator

Head of the Department

Courses Name	A Knowledge and Understanding				B Intellectual Skills					C Practical Skills					D General /transferable skills							
	1	2	3	4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	6	7	
advanced system physiology		x	x	X	x		x			X			x	X	X		X				X	
advanced molecular and cellular physiology	x								x					x								
Advanced Neuromuscular AND CNS Physiology			x	X			x				x		x	x	x		x				x	
Advanced Skin Physiology			x	X			x				x		x	x	x		x				x	
Advanced Eye Physiology			x	X			x				x		x	x	x		x				x	
Advanced Renal Physiology			x	X			x				x		x	x	x		x				x	
Advanced Cardiovascular Physiology			x	X			x				x		x	x	x		x				x	
Advanced Respiratory Physiology			x	X			x				x		x	x	x		x				x	
Advanced Endocrine System and Reproduction			x	X			x				x		x	x	x		x				x	
Practical course		x		X	x	x	x	x	x	X	x	x	x	x	x	x	x	x	x	x	x	x
Scientific Activities	x	x	x	X	x	x		x		X		x			x	x	x	x	x			
MD Thesis					x			x				x		x	x	x		x	x			X