



## **Program Specification** **for Master Degree in: Physiology**

**Program type: Single**

**Department offering the program: Department of Physiology**

**Total credit points: 145**

**Code: PHYS 800**

**Academic year: 2009/2010**

**Program Coordinators: Prof. HASSAN ISA, Head of Department**

**External evaluators:**

### **I. Program aims**

The program is a professional degree that enables candidates to specialize in research, teaching and clinical testing in Human Physiology including organ , cellular and system Physiology. The candidates should achieve satisfactory levels of basic scientific knowledge, clinical and research skills in all aspects of general Physiology as well as their chosen field of specialization, interact with clinical research problems, respect ethical guidelines in all areas of practice and promote their medical standards through engaging in continuing medical education.

### **II. Intended learning outcomes of program (ILOs)**

- 1. Knowledge and understanding: By the end of the program the candidate should;**
  - a. Explain the functions of all body systems at the organ level.**
  - b. Describe the general cellular mechanisms involved in cellular genomics, function, communication, regeneration and death.**
  - c. Demonstrate an in depth knowledge and physiological expertise at a specific chosen body system or at a specific area of cellular function area as it relates to physiological knowledge.**
  - d. Demonstrate a basic knowledge of another sub-speciality field that is chosen as part of the elective courses taken.**
  - e. Demonstrate a basic understanding of the physiological background of applied physiology in medical practice.**

2. **Intellectual skills: By the end of the program the candidate should be able to;**
  - a. **Identify a research question in clear terms and develop a realistic research plan .**
  - b. **Apply critical thinking techniques to evaluate and judge alternatives.**
  - c. **Integrate Human Physiology with other sciences studied during the program.**
  - d. **Use statistical techniques to analyse and present scientific data.**
  - e. **Interpret clinical physiology test results**
  
3. **Professional and practical skills: By the end of the program the candidates should be able to;**
  - a. Effectively teach theoretical physiological knowledge and perform and demonstrate practical experiments to students at the undergraduate level.
  - b. Effectively perform and interpret results of practical techniques relevant to their area of research.
  - c. Incorporate research and medical ethics in all areas of practice
  - d. Effectively prepare and present scientific research topics to a scientific community.
  - e. Effectively Perform and interpret results of clinical physiology testing of different body systems as required in a clinical setting.
  
4. **General and transferable skills: By the end of the program the candidates should be able to;**
  - a. **Research available sources of information and effectively write and prepare an audiovisual presentation to different types of audiences.**
  - b. **Work separately or in team to achieve predefined objectives.**
  - c. **Demonstrate an ability for continuous professional development.**
  - d. **Demonstrate time management skills through effectively working to deadlines.**
  - e. **Effectively plan and implement, manage and evaluate courses in the field of physiology.**
  - f. Effectively communicate with the scientific community.
  - g. Respond effectively to patient concerns during physiological clinical testing
  - h. Effectively communicate with other health care providers to achieve care provision and research plans according to standards.
  - i. Application of relevant standards and guidelines of quality and excellence in all areas of practice.

### **III. Academic standards.**

#### **External references for standards:**

**Guidance for the programme structure and content was obtained from courses provided by the university of Leicester and also Bath in UK as well as Drexel college of medicine USA.**

## IV. Program admission requirements.

According to the bylaws of the faculty of medicine Cairo University applicants should have MBChB or equivalent degree. According to Cairo University requirements, all applicants for postgraduate studies should fulfill preliminary courses on the following subjects; Medical statistics I – English language (Toefl or equivalent degree) – Computer skills (ICDL) or equivalent computer course offered by the medical education center (MEDC). Admission to the program is open during July. Training prior to registration may be accredited according to departmental evaluation. Admission for the program is open during July.

## V. Program structure and contents.

**Program duration:** Three years.

**Program structure:** Total Credit points 145

- **First part: 1.5 years - (table 1) 55 credit points**
  - Compulsory courses; one academic year (30 weeks)
    - Basics of Physiology courses 6 credit points
    - Research methodology 2 credit points
  - Elective courses 2 credit points
  - Scientific activities 3 credit points
  - Practical training program Part 1 “for one and half year 42 credit points
  
- **Second part: 1.5 years - (table 2) 70 credit points**

**Compulsory courses:**

- (Advanced Physiology course ) one academic year (30 weeks) 9 credit points

And

- Quality in research and education 1 credit point.
  
- Scientific activities 3 credit points
- Practical training program Part 2:  
for one and half year 57 credit points
  
- **Master Thesis: completed during second part 20 credit points.**

**Table 1: First part**

Courses	Course modules	Credit points	total	ILOs			
<b>Compulsory courses</b> (One academic year)							
Basics of Physiology	• General cellular physiology	0.5	9	1:ab,c,e			
	• Physiology of the skin	0.5					
	• Central nervous system	1					
	• Circulatory system	1					
	• Respiratory system	1					
	• Endocrine system	1					
	• Autonomic nervous system	1					
	• Nerve and muscle	1					
	• Renal system	1					
	• Reproductive system	1					
Research methodology	• Identification of type and topic of research	0.1	1	2:a,b,d 3:c,d 4:,d			
	• Research ethics and codes of practice	0.1					
	• Planning of research	0.1					
	• Implementation of plan	0.1					
	• Interpretation of results	0.1					
	• Reporting	0.1					
	• Standards of publication	0.1					
	• Evaluation	0.1					
	• Peer review	0.1					
	• Funding	0.1					
	<b>Elective Courses</b> choose 2 courses						
	Basic Biochemistry				1	2	1: d,e 2:c
Basic Pathology		1					
Basic Clinical Pathology and Immunology		1					
Basic Internal Medicine Practice		1					
Basic Pediatric practice		1					
<b>Scientific activities</b>			3	2:b,3:b 4:a,b,c			
<b>Practical training program</b>			42	3-a,b 4-d.			

**Table 2: Part 2**

Item	Credit points	ILOs.
Advanced Physiology	9	1:c
Quality in Research and Education	1	4:i
Scientific activities	3	2:b,3:b 4:a,b,c
Master thesis	20	2:a,3:b
Practical training program	57	1:e,2:e,3:e,4:f,g,h,l,e

### **Training Program**

- **First phase (Basic Training):**

According to the new bylaws for postgraduate programs (effective since July 2009), all the students should have a basic theoretical and practical training for 18 months. During this period the candidates attend the basic Theory courses as well as the practical training course. They also should complete the elective courses

- **Second phase (Special Training):**

All students should complete the special part of the -training program in the Physiology department. They should spend 18 months in order to complete the needed credit points. The student is expected to attend the taught courses, practical classes s Lab, and the research and organ preparation laboratory, the clinical physiology testing sessions to share in research, teaching and clinical testing care under the supervision of senior staff members. During this period the students will attend the theory course, prepare his thesis and participate in the scientific activities of the department.

### **Master Thesis**

All master-degree students should prepare a thesis in one of the main domains of Physiology .The department and the research ethics committees must approve the protocol of the research. The thesis should include a review part and a research part. The Thesis is supervised by one or more senior staff members from the Physiology department and may include other specialties according to the nature of the research and the area of specialization of the candidate. The thesis should be evaluated and approved by a committee of three professors including one of the supervisors and an external professor. Approving the thesis is mandatory to allow the student to set for the final exam.

## **Scientific Activities:**

The students should participate in the scientific activities of the departments such as:

- *Journal club (presenting scientific articles).*
- *Seminars (including recent topics and controversial issues). Students are expected to participate in the discussions.*
- *Scientific meetings arranged by the department.*

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

## **V. Regulations for progression and program completion**

After finishing the first phase of training program, attending the specified courses and collecting the required credit points, the student should pass the first part exam including the basic physiology course and the electives before proceeding to the second part. In case the student fails to pass the exam, he may proceed in the training program and can resubmit for the next exam. After passing the first part, the student submits a protocol for the master thesis at the beginning of second part. Before submitting to the final exam, he should finish the thesis and get approval, complete the special advanced training program, and collect the required credit points. The candidate will receive his degree after passing this final exam. In case the student fails to pass the exam, he can resubmit for the next exam. The student should finish his master degree within a maximum of 6 years.

## **VI. Assessment**

According to the bylaws of the training programmes, trainers and program coordinators carry continuous assessment during the program. A training logbook including scientific activities will be kept for each student to document all his/her theoretical, clinical, laboratory and/or scientific activities. The head of the department should allow the students to undergo the final examination when they complete their training program and collect the credit points needed.

### **Final Exam Part I**

- Basic Physiology and research methodology: Three -hour written exam (including long assay and short assays) + oral exam+ practical exam
- Electives: 2 electives in one written exam paper for two hours including short assays and mcqs

### **Final Exam Part 2**

*Advanced physiology and quality in research and education: written exam paper for three hours including long assays, short questions, and mcq+ oral exam+ practical and clinical testing exam.*

Remarks

- Passing mark in a written exam is  $\geq 60\%$

## VII. Evaluation of program intended learning outcomes:

Evaluator	Tool	Sample
1. Senior Students	Questionnaire at the end of the program	All the PG students
2. Stakeholders	A meeting will be arranged at the end of each semester	• Programme coordinators, PG students, instructors from elective courses departments
4. External Evaluators	Review the program and courses Attending the final exam.	Once before implementation annual report
5. College Quality Assurance committee	Annual program review	

Date of approval by department council

Head of Department

Prof. Hassan Issa