

Cairo University

Faculty of Medicine

## **Program Specification for Master Degree in** **Orthopedic Surgery**

**Program type:** single

**Program code:** ORTH 800

**Department offering the program:** Department of orthopedic surgery

**Total credit points:** 160

**Academic year:** 2015/2016

**Date of approval by department council:** 5/10/2010

**Date of approval by department council after reviewing:** July 2015

**Program coordinators:**

Prof. Aly Othman Almofty

Prof. Khaled Fawzy

Prof. Ali Mohammad Reda Mansour

**External evaluator:**

Prof. Gamal Hosny, Professor of orthopedics, Faculty of Medicine, Banha University

### **I- Program aims**

The specialty of Orthopaedics and Traumatology involves prevention, diagnostics (including imaging techniques), non-operative, pharmacological and surgical treatments and rehabilitation of degenerative, inflammatory, infectious, metabolic and neoplastic pathologies, as well as the management of musculoskeletal trauma and its post-traumatic consequences. Furthermore it encompasses contributions to the multidisciplinary management of congenital and acquired deformities and functional disorders at any age.

The program is a professional degree that enables candidates to specialize in the area of Orthopedic traumatology and diseases including hip and arthroplasty surgery, spine surgery, sports medicine and arthroscopy, orthopedic oncology, hand and Microsurgery, Foot and ankle and deformity surgery, and pediatric orthopedic surgery. It aims to make links between the surgical education process as a whole and assessment processes in particular, absolutely clear. The candidates should achieve satisfactory levels of basic knowledge, clinical and surgical skills in all aspects of orthopedic practice, interact with community problems, respect ethical values according to community culture, and promote their medical standards through engaging in continuing medical education. The program also aims to introduce the candidates to the basics of scientific medical research.

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

### **A. Knowledge and understanding**

**By the end of the program the candidate should:**

1. Recognize the basic sciences required for understanding of the orthopedic trauma and diseases.
2. Recognize the basic scientific knowledge related to orthopedic trauma and diseases.
3. Identify and discuss common problems related to orthopedic trauma and diseases.
4. Distinguish the basic pathology underlying different orthopedic disorders.
5. Distinguish basic concepts of musculoskeletal laboratory procedures related to metabolic and rheumatic bone diseases and other disorders.
6. Describe different management modalities for common musculoskeletal problems.
7. Recognize the basic principles of surgical procedures that enable the candidate to perform surgeries of musculoskeletal dysfunctions.

### **B. Intellectual skills**

**By the end of the program the candidate should be able to:**

1. Analyze symptoms & signs and construct a differential diagnosis of common musculoskeletal complaints.

2. Design an appropriate diagnostic plan for evaluation of common musculoskeletal complaints taking into consideration the nature of the clinical situation and the risks, benefits and costs to the patient.
3. Interpret the results of different investigations related to musculoskeletal dysfunctions.
4. Design treatment plans for common and rare musculoskeletal problems taking into account the cultural and individual needs.

#### **C. Professional and practical skills**

**By the end of the program the candidate should be able to:**

1. Collect clinical data specially the art of history taking.
2. Examine and identify signs of common and rare musculoskeletal disorders.
3. Perform office clinical procedures related to musculoskeletal dysfunction.
4. Perform simple musculoskeletal laboratory procedures.
5. Offer proper medical treatment for musculoskeletal problems.
6. Perform basic surgical skills and manage common surgical complications related to musculoskeletal system.
7. Offer surgical interventions whenever indicated.

#### **D. General and transferable skills**

**By the end of the program the candidate should be able to:**

1. Communicate with the patients to gain their confidence & respond effectively to a patient's emotional and psychosocial concerns.
2. Communicate with other health care providers & appreciate team working.
3. Achieve computer skills necessary to make the internet use of medical data bases and use the internet for communication.
4. Demonstrate administrative skills to fulfill the paper work needed.
5. Demonstrate leadership skills that enable him to organize work and lead the juniors and paramedical staff

6. Recognize scientific methodologies and have critical reading abilities
7. Read and interpret a medical report.
8. Write scientific article according to the basics of scientific research.

### **III- Academic standards**

#### **1- Academic reference standards:**

The academic standards of orthopedic program is adopted and accredited by the departmental council

#### **2- External references for standards:**

- EFORT European Curriculum in Orthopaedics and Trauma: European Education Platform (EEP)
- The curriculum of the British Orthopedic Association (BOA) Training Standards Committee

### **IV- Program admission requirements**

According to the faculty of medicine, Cairo University Bylaws for post Graduate programs (July 2009), applicants should have MBChB or equivalent degree.

According to Cairo University requirements, all applicant postgraduate studies should fulfill preliminary courses on the following subjects: Medical statistics - English language (Toefl or equivalent degree) - Computer skills (ICDL) or equivalent computer course offered by medical education center (MEDC).

Admission to the program is open during July. Training prior to registration may be accredited according to departmental and hospital evaluation.

Postgraduates who had a master in general or specialized surgery and its equivalent degree can also apply for the master in orthopedics. In such case, candidates will be exempted from the first part courses and the first phase of the residency training.

### **V- Program structure and contents**

**Program duration:** Three years.

**Program structure:** Total Credit points 160

**Program Matrix of Orthopedics M.Sc. Degree:** Appendix I & II

<b><u>First part</u></b> <b>1 year</b> <b>51 credit points</b>	Compulsory courses one academic year (30 weeks)	Basic sciences courses Table 1	6 credit points
		General surgery courses	3 credit points
	Elective courses		1 credit point
	Scientific activities		1 credit points
	Residency training program phase I: General surgery and orthopedics		40 credit points
<b><u>Master Thesis:</u></b> completed during second part			<b>20 credit points</b>
<b><u>Second part:</u></b> <b>2 years</b> <b>89 credit points</b>	Compulsory courses one academic year (30 weeks)		16 credit points
	Scientific activities		3 credit points
	Residency training program phase II: orthopedics		70 credit points

**Table 1: First part**

<b>Code</b>	<b>Courses</b>	<b>Course modules</b>	<b>Credit points</b>
	<b>Compulsory courses (One academic year)</b>		9
ORTH 801	Anatomy	Upper limb, lower limb, bony pelvis and its soft tissue relations and vertebral column.	2.5
ORTH 804	Medical Physiology	Regulation of blood pressure, hemostasis, the types of shock and the defense mechanisms, tissue edema, the physiology of growth, the thyroid gland and the calcium metabolism.	1
ORTH 808	Pathology	Metabolic bone disease including osteomalacia and osteoporosis, osteomyelitis, bone tumors and bone dysplasias	1.5
ORTH 806	Medical Microbiology and Immunology	Aerobic and anaerobic organisms, hepatitis and AIDS viruses, vaccination, hospital acquired infections, hypersensitivity reactions, cell mediated and humoral immunity, disinfection and sterilization.	1
ORTH 812	General Surgery	Management of shock, blood and blood component replacement, soft tissue infections, management of acute ischemia, thyroid gland dysfunctions, management of acute abdomen, penetrating and blunt abdominal trauma and management of head injuries	3
	<b>Elective Courses (MEDC) choose 2 courses</b>		1
MEDC1	•	Critical Reading	0.5
MEDC2	•	Scientific writing	0.5
MEDC3	•	EBM	0.5
MEDC4	•	Medical statistics II	0.5
MEDC5	•	Medical ethics	0.5
MEDC6	•	Communication Skills	0.5
	Scientific activities		1
ORTH 832C1	Residency training program (general surgery & orthopedics, traumatology)		40

**Table 2: Second part**

Code	Item	Credit points
ORTH 832Ta 832Tb	<b>Basic Orthopedic Surgery</b>	
	a) Orthopedic trauma	8
	b) Orthopedic diseases	8
	Scientific activities	3
ORTH 832C2	Residency training program (Orthopedic Surgery and trauma)	70
	Master thesis	20

**Residency (practical) Training Program:**

- Basic Training (1 year):

According to the Faculty of Medicine, Cairo University Bylaws for postgraduate Programs (July 2009), all the students should have a basic surgical training for 6 months in Cairo University hospitals or one of the hospitals accredited by Cairo University. They should attend in the general surgery and emergency department every day for 1 month for the hands on training. During the first year, the students will attend the basic sciences courses as well as the general surgery course. They should also complete the elective courses.

- Special Training (2 years):

All students should spend **at least 12 months** in the orthopedic department to complete the special part of the residency training program. The student is expected to attend the outpatient clinics, inpatient section and the operating room to share in patients care under the supervision of senior staff members. During this period the students will attend the basic orthopedic surgery courses of the second part and will participate in the scientific activities of the department.

**All students should attend:**

1. Post-graduate orthopedic review lectures (At least 60%).
2. Orthopedic clinical examination for post-graduates lectures (At least 60%).
3. Basic orthopedic course (At least once).

4. At least 2 other specialized courses arranged by the orthopedic department.

**Master Thesis:**

All master-degree students should prepare a thesis in orthopedic trauma or disorders. The department and the ethical committees must approve the protocol of the research. The thesis will be 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 committee of three professors including one of the supervisors and an external professor.

**Scientific Activities:**

The students should participate in the scientific activities of the departments and participate in the discussions which include:

- Journal club once every one- two weeks.
- Seminars (including recent topics and controversial issues) once weekly.
- Scientific meetings arranged by the department.
- Attendance of Thesis discussions.
- Staff rounds.
- Orthopedic department annual conference.

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

**VI- Regulations for progression and program completion**

After collecting the required credit points for the respective courses, the first phase of the residency training, and the scientific activities, the student will be eligible to sit for the first part examination. In case the student fails to pass the examination, he may proceed in the clinical training and can resubmit for the next examination.

After passing the first part, the student submits a protocol for Master thesis at the beginning of the second part. Before submitting to the final examination he should finish the thesis and get approval, complete phase 2 of special training program, and collect the required credit points.



The candidate will receive his degree after passing this final examination.

Master degree should be obtained within a maximum of 6 years after registration date.

## **VII- Assessment**

### **A: Assessment Tools:**

- **Supervision & Monitoring of the Training program:**

According to the Faculty of Medicine, Cairo University Bylaws for Residency Training Programs, professors carry continuous assessment during the program. A residency-training program logbook will be kept for each student to document all his/her clinical, laboratory and/or operative/procedural activities as well as his/her participation in different 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.

- **Formal Assessment**

According to the Faculty of Medicine, Cairo University Bylaws for postgraduate Programs (July 2009), students should be assessed at the end of first part and at the end of the second part

#### **1. First Part Final Exam:**

- Anatomy & Embryology: three-hour written exam (including short assay and multiple choice questions) + oral exam + practical exam.
- Pathology: Two-hour written exam (including short assay and multiple choice questions) + oral exam + practical exam.
- Microbiology / immunology: one-hour written exam (including short assay and multiple choice questions) + oral exam.
- Physiology: one-hour written exam (including short assay and multiple choice questions) + oral exam.
- General surgery: three-hour written exam (including short assay and multiple choice questions) + oral exam + clinical exam.

#### **2. Final Exam Part 2:**

Orthopedic diseases

Orthopedic trauma

Two written exams, in two separate days, three-hours each, including short assay questions, and MCQ (including problem solving) + oral exam + clinical exam

**B- Assessment Schedule:**

**1. First Part Final Exam:**

The written exam will be held in April/October (4 days):

Day one: Anatomy & Embryology: (3hours)

Day two: Pathology: (2hours)

Day three: Microbiology / immunology + Physiology: (2hours)

Day four: General surgery: (3 hours)

This will be followed by the clinical and oral exams in separate days

**2. Second Part Final Exam:**

The written exam will be held in May/ November (2days):

Day one: Orthopedic diseases (3 hours)

Day two: Orthopedic trauma: (3 hours)

This will be followed by the clinical, oral, and operative exams in separate days

**C. Weighting of assessment: Marks allocated to courses**

**(50 marks for each credit point)**

<b>Course</b>	<b>written</b>	<b>oral</b>	<b>Clinical/practical</b>	<b>total</b>
<b>First part</b>				
Anatomy	75	25	25	125
Medical physiology	25	25	-	50
pathology	45	15	15	75
Medical microbiology & immunology	25	25	-	50
General surgery	75	50	25	150
<b>Second part</b>				
Orthopedic trauma	240	80	80	400
Orthopedic diseases	240	80	80	400

**Remarks:**

The written exam of the physiology and microbiology will be held in the same paper and its marks will be summed together. Otherwise it is mandatory to pass the papers of the exam separately.

Passing mark in the exam is 60%

### **VIII- Evaluation of program intended learning outcomes**

<b>Evaluator</b>	<b>Tool</b>	<b>Sample</b>
<b>Senior</b>	Questionnaire at the end of the program	All the PG students
<b>Alumni</b>	The faculty is currently developing an alumni Office for postgraduates	All assistant lecturers of the department.
<b>Stakeholders</b>	A meeting will be arranged during the annual conference of the department	Available representatives from: <ul style="list-style-type: none"> <li>✓ Army hospital</li> <li>✓ National medical insurance</li> <li>✓ Medical syndicate</li> <li>✓ Ministry of health</li> </ul>
<b>External Evaluator</b>	Review the program and courses attending the final exam	<ul style="list-style-type: none"> <li>✓ Once before implementation</li> <li>✓ Bi-annual report</li> </ul>

#### **Program Coordinators**

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Prof. Khaled Fawzy

Prof. Aly Almofty

#### **Head of Department**

Prof. Aly Almofty