



Program Specification for Master Degree in Thoracic and cardiovascular surgery

Program type:	Master Degree in thoracic and cardiovascular Surgery
Program code:	CARS 834.
Department offering the program:	Department of Thoracic and Cardiovascular Surgery.
Total credit points:	163
Academic year:	2016/2017
Program Director:	Prof. Dr. Hesham Shawky

I. Program aims

This Program aims to refresh the candidate knowledge about the structure, function and pathology of the different intrathoracic systems as well as the related microbiology, immunology and basics of pharmacological therapy relevant to such systems. Also to be familiar with cardiothoracic surgery concepts, basic surgical skills, and whole body homeostasis and sound post operative conduct.

II. Intended learning outcomes of program (ILOs)

- 1. Knowledge and understanding: By the end of the program the candidate should;**
 - a) Understand basic scientific knowledge and pathology related to cardiovascular and thoracic diseases.
 - b) Understand concepts of cardiopulmonary diagnostic / imaging tools.
 - c) Understand proper electrolyte and fluid balance, surgical nutrition, and antibiotics usage.
 - d) Understand the management issues of post operative care and all related complications.
 - e) Understand Pathophysiology of shock and management of its different types.
 - f) Understand the basics of medical emergency, trauma and priority of mass causality / crisis management.

- 2. Intellectual skills: By the end of the program the candidate should be able to;**
 - a) Interpret history taking, clinical findings, laboratory results and imaging analysis to formulate proper differential diagnosis.
 - b) Analyze multiorgan affection and plan treatment scheme taking each in account.
 - c) Able to deal with mass causality including initiation of a triage list.

- 3. Professional and practical skills: By the end of the program the candidate should be able to;**
 - a) Diagnose and first aid different general surgery and trauma emergencies.
 - b) Perform invasive ICU procedures (vascular line insertion, intercostals tube placement, air way management including intubation).
 - c) Interpret culture reports and manage antibiotic therapy.
 - d) Manage proper surgical nutrition both enteral and parental.
 - e) Perform under senior assistance simple surgical procedures.

- 4. General and transferable skills: By the end of the program the candidate should be able to;**
 - a) Communicate and cooperate as part of multi disciplinary team.

- b) Appreciate that continuous medical education through peer discussion, critical reading and conference attendance is vital for a healthy up to date body of knowledge.
- c) Master Information technology for research and presentations issues.
- d) Convey to the patient and his family his diagnosis, explain intended therapy and all its related implications including risk /benefit analysis.

III. 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. All applicants for 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 the 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.

1. Academic reference standers: The academic standers of anatomy program m is adopted and accredited by the departmental council
2. External References for Standards:

IV. Program structure and contents.

Program duration: Three years.

Program structure: Total Credit points 163

A) First part: 1 year - (table 1)

A total of 55 credits points (CP) are to be fulfilled as follow:

Candidate should fulfill the following:

- **Compulsory courses; ten CP** one academic year (30 weeks Starts October)

- a) Anatomy (CARS 801) one CP
- b) Pathology (CARS 808) one CP
- c) Physiology (CARS 804) one CP
- d) Pharmacology (CARS 807) one CP
- e) Microbiology (CARS 806) one CP
- f) General Surgery (CARS 812) Five CP

▪ **Elective courses two CP**

Whereby two of following four options are required:

- a. Post Operative ICU (General Surgery) (CARS 834 ICUS)
- b. Post Operative ICU (Cardiothoracic) (CARS 834 ICUC)
- c. Emergency Medicine (CARS 834 ERS)
- d. Heart assist devices,IAB,heart lung machine(CARS 834 HA HL)

▪ **Scientific activities : one CP**

In form of journal club, mortality and morbidity conference, specific topics seminars and specialty meetings at tendency

▪ **Residency training program Phase 1:**

Total of 42 CP. (CARS 834 C1)

In conjunction with the department of general surgery.

B) Second part: 2 years - (table 2)

A total of 88 credit points are to be fulfilled as follows:

▪ **Compulsory courses 14 CP (one academic year 30 weeks).**

- Congenital heart surgery :
(CARS 834 Ta) 3 CP
- Valve Surgery:
(CARS 834 Tb) 3 CP
- Coronary Surgery:
(CARS 834 Tc) 3 CP

- Chest Surgery:
(CARS 834 Td) 3 CP
- Emergency :
(CARS 834 Te) 2 CP

- **Scientific activities.** Four Credit points:

In form of journal club, mortality and morbidity conference, specific topics seminars and specialty meetings attendance.

- **Residency training program phase 2:** Seventy CP
(CARS 834 C2)

According to curriculum of the department of cardiothoracic surgery with a dedicated log book for the different activities including operating room maneuvers (operations whether as assistant or operator), clinical rounds, case presentation, topic discussions and research work.

C) Master Thesis: Twenty CP

All master-degree students should prepare a thesis in one of the domains of cardiothoracic surgery. The timing of thesis protocol presentation for approval is at the start of the second part of the master degree.

The department and the ethical 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 cardiothoracic surgery department 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. Approving the thesis is mandatory to allow the student to set for the final exam.

Table 1: First part

Course	Credit hours	ILOs
Compulsory courses <u>(One academic year)</u>		
Anatomy (CARS801)	1 CP	- 1 a) c)

Pathology (CARS 808)	1 CP	
Physiology (CARS 804)	1 CP	
Pharmacology (CARS 807)	1 CP	
Microbiology (CARS806)	1 CP	
General Surgery (CARS812)	5 CP	- 1 e) f)
Elective Courses <u>Candidate should choose 2 courses:</u>	2 CP	
<ul style="list-style-type: none"> - Postoperative ICU (General Surgery) (CARS 834 ICUS) - Postoperative ICU (Cardiothoracic) (CARS834 ICUC) - Emergency medicine (CARS834 ERS) - Heart assist devices, IAB, heart lung machine (CARS 834 HA HL) - 		- 1 c) d) f)
Scientific activities	1 CP	- 4 b)
Residency training program (CARS834 C1)	42 CP	- 3 a) c) f)

Table 2: Part 2

item	Credit points	ILOs.
Course		
Congenital heart surgery (CARS 834 Ta)	3 CP	
Valve Surgery: (CARS 834 Tb)	3 CP	- 3 a) b) c) d) e)
Coronary Surgery: (CARS 834 Tc)	3 CP	

Chest Surgery: (CARS 834 Td)	3 CP	
Emergency: (CARS 834 Te)	2 CP	
Scientific activities	4 CP	- 4 b)
Master thesis	20 CP	- 4 c)
Residency training program (CARS 834 C2)	70 CP	- 3 a) b) c) d) e)

Residency (practical) Training Program

- **Basic Training:**

According to the Faculty of Medicine, Cairo University Bylaws for Post Graduate Programs (July 2009), all the students should have a basic Surgical training for 12 months. They should spend at least 6 months in a general surgery department and 6 months in an emergency department(s). During this period the students will attend the basic sciences courses as well as the general surgery course. They also should complete the elective courses.

- **Special Training:**

All students should complete the special part of the residency training program in the Cardiothoracic Surgery department. They should spend 24 months in order to acquire the needed credit points. During this period the students will attend the cardiothoracic course(s) of the second part and will participate in the scientific activities of the department.

- **Master Thesis**

All master-degree students should prepare a thesis in Cardiothoracic Surgery. The department and the ethical 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 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 students should participate in the scientific activities of the departments such as:

- Journal club once every one- two weeks.
- Seminars (including recent topics and controversial issues) once weekly. Students are expected to participate in the discussions.
- Scientific meetings arranged by the department
- Attendance of Thesis discussions
- Others (Mortality and Morbidity conferences)

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 the final exam.

V. 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 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.

VI. Assessment

Supervision & Monitoring of the Training Program:

According 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 clinical and operative procedures activities as well as his 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.

A: Attendance criteria:

This includes attending a minimum of 75% of the lectures and completing the necessary log book credentials as specified by the department policy.

B: Assessment Tools:

1. Final Exam Part I

Basic sciences

- Anatomy and pathology: two-hours written exam (including short assay and multiple choice questions) + oral exam
- Physiology , pharmacology and Microbiology / Immunology:-three-hours written exam (including short assay and multiple choice questions) + oral exam

General Surgery

- General Surgery: Three-hour written exam (including short assay and multiple choice questions) + oral exam + clinical exam
- Optional course: one-hour written exam (including short assay and multiple choice questions) + oral exam for each of the two courses chosen.

The Written exam will be hold in four days:

Day one: anatomy and pathology (2 hours)

Day two: physiology, pharmacology and microbiology (3 hours)

Day three: the two optional courses (1 hour for each course)

Day four: general surgery (3 hours)

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

2. Final Exam Part 2

Cardiothoracic surgery:

- a- Two written exams on two different days (Three-hours each) including short assay questions, and MCQ (including clinical problem solving)
- b- Oral exam (20 min duration) focused on imaging evaluation, operative and instruments discussion with three faculty examiners.
- c- Clinical exam (20 min duration) focused on practical case problem solving with three faculty examiners.

Written exam will be hold in Two days:

Day one: Cardiothoracic surgery (3 hours)

Day two: Cardiothoracic surgery (3hours)

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

C: WHEIGHTING OF ASSESSMENT: Marks allocated to courses

Course	Written	Oral	Clinical/practical	Total
First part				600
Anatomy	30	20		100
Pathology including single 2 hrs paper	30	20		
Microbiology Pharmacology	30	20		150
	30	20		
Physiology including single 3 hrs paper	30	20		
Optional 2 courses including 1 hr paper	30 + 30	20 + 20		100
General surgery including single 3hrs paper	150	50	50	250
Second part				700
Cardiothoracic surgery				
o Clinical and oral		150	150	300
o First day 3hrs paper	200			400
o Second day 3hrs paper	200			

Remarks

- It is mandatory to pass the two papers of the cardiothoracic surgery exam separately
- Passing mark in a written exam is $\geq 60\%$

VII. Evaluation of program intended learning outcomes:

Evaluator	Tool	Sample
1. Senior Students	<ul style="list-style-type: none">• Questionnaire at the end of the program	<ul style="list-style-type: none">• All the postgraduate students
2. External Evaluators	<ul style="list-style-type: none">• Review the program and courses• Attend the final exam.	<ul style="list-style-type: none">• Annual report

Date of approval by department council

Program Director : Prof. Dr. Hesham Shawky

Professor and head of department
Of Cardiothoracic surgery.
Faculty of medicine, Cairo University.