



## Program Specification for Medical Doctorate Degree in Critical Care Medicine

Program Type: **Single**

Department offering the program: **Critical care Medicine**

Program code: **CCM 900**

Total credit points: **290 point**

Academic Year: **2015/ 2016**

Date of approval: **July 2015**

Program Coordinators: **Prof. Osama Tayeh, MD**

External evaluators:

### I. Aim of Program

The educational process in Critical Care Medicine aims to produce physicians who have been introduced into the basics of scientific medical research, developed leadership and team working skills, maintained the highest healthcare standards, performed the core investigations and procedures required in critical care medicine, developed clinical practice which is based on an analysis of relevant clinical trials and finally developed the skills of an effective teacher.

### II. Intended Learning Outcomes of the Program (ILOs)

A. **Knowledge and Understanding:** By the end of the program the candidate should be able to:

- 1) Acquire knowledge and mastery of the medical science and technology used in the intensive care units.
- 2) Define knowledge of appropriate ethical standards and ability to cope with the psychological and social effects of critical illness on patients and their relatives.
- 3) Identify critical disorders in various systemic diseases.
- 4) Explain basic concepts of noninvasive diagnostic tools (e.g., ECG, CXR, echocardiography, radionuclide imaging...)
- 5) Associate basic concepts of cardiac catheterization and EPS.
- 6) Describe different management modalities for common critical care problems, life style modification, pharmacological, percutaneous, and surgical management.
- 7) Master the research and teaching skills in critical care medicine.

B. **Intellectual Skills:** By the end of the program the candidate should be able to:

- 1) Interpret the results of different investigations related to various diseases in the field of critical care medicine.
- 2) Set up a clinical decision according to cultural and individual needs.

- 3) Offer treatment plans for common and rare critical care problems.
- 4) Construct teaching and research plans in the field of critical care medicine

**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) Identify signs of common and rare critical care disorders.
- 3) Interpret surface ECG, CXR, and ABG within the context of clinical evaluation.
- 4) Perform transthoracic echocardiographic study of common and rare cardiovascular diseases.
- 5) Perform cardiac nuclear scans.
- 6) Perform cardiac catheterization for different cardiovascular diseases (diagnostic and interventional coronary angiography).
- 7) Perform electrophysiological studies.
- 8) Offer proper medical treatment for common and rare critical care disorders.
- 9) Manage all cardiovascular, pulmonary, central nervous system, renal, liver, surgical, hematological and other clinical emergencies properly.
  
- 10) Construct plans for management of patients during clinical rounds with residents.

**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 respect and cooperation.
- 2) Work in a multi disciplinary team.
- 3) Acquire knowledge of contemporary research fields.
- 4) Distinguish different scientific methodologies and data analysis.
- 5) Achieve Computer skills necessary to make use of medical data bases and use of the internet for communication.
- 6) Write scientific articles and MD thesis under the basics of scientific research.
- 7) Gain scientific reading and writing skills enabling him to lead a scientific research.
- 8) Develop social and communication skills necessary for case presentations and scientific arguments as well as the process of teaching for students.

### III. Academic Standards

#### External references for standards

1. Core Curriculum for the European Society of Intensive Care Medicine.

### IV. Program Admission Requirements

According to the Faculty of Medicine, Cairo University Bylaws for Post Graduate Programs (July 2009), applicants should have Master degree in Critical Care Medicine or equivalent degree. According to Cairo University requirements, 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.

### V. Program structure and contents

Program duration: Two academic years.

Program structure: Total Credit points 290

- Master degree 173 points
- 2 Years – Total credit points 117 - table 1
  - Compulsory courses; two academic years ( 30 weeks each)
    - a. Cardiology 6 credit points
    - b. Nephrology 2 credit points
    - c. Pulmonology 3 credit points
    - d. Neurology 2 credit points
    - e. Gastroenterology 2 credit points
    - f. Surgical care + organ transplantation and toxicology 3 credit points
  - Elective courses (only one chosen by the candidate) 4 credit points
    - Clinical Pathology
    - Molecular biology
- Scientific activities 5 credit points
- Practical training program 50 credit points
- Medical Doctorate Degree Thesis 40 credit points

**Table 1 (2 years)**

Courses Code Title	Credit Points		ILOs
	CPs	Total	
<b>COMPULSORY COURSES {Critical Care Medicine “Advanced level , CCM 926”}</b>			
<b>CCM 926Ta Cardiology</b> <ul style="list-style-type: none"> <li>• Valvular heart disease</li> <li>• Heart Failure</li> <li>• Myocardial disease</li> <li>• Diseases of the Aorta</li> <li>• ACS with primary intervention including primary PCI.</li> <li>• Chronic Ischemic Heart disease</li> <li>• Systemic HTN</li> <li>• Arrhythmia and electrophysiological study</li> <li>• Syncope</li> <li>• Thromboembolic Venous disease</li> <li>• Primary Pulmonary HTN</li> <li>• Pericardial disease</li> <li>• Infective endocarditis</li> <li>• Trauma to the aorta and heart</li> <li>• Congenital heart Disease</li> <li>• Diabetic heart Disease</li> <li>• Peripheral Arterial disease</li> <li>• Cardiovascular risk assessment and prevention</li> <li>• Sudden cardiac death and resuscitation</li> <li>• Pregnancy and heart disease</li> <li>• Cardiac Tumors</li> <li>• Genetics</li> <li>• Clinical Pharmacology</li> <li>• Rehabilitation and Exercise physiology</li> <li>• Cardiac Imaging including nuclear imaging and coronary angiography.</li> </ul>	6	18	A1-6,B1-3,C1-8,D1-5
<b>CCM 926Tb Nephrology</b> <ul style="list-style-type: none"> <li>• Diagnosis and management of renal emergencies such as hematuria, proteinuria, anuria and urinary tract infections.</li> <li>• Clinical picture, diagnosis and management of nephritis and nephritic syndrome</li> <li>• Diagnosis and management of patients presenting with acute and chronic renal failure</li> <li>• Mechanism of renal dialysis and its possible cutaneous associations</li> <li>• Indications, postoperative management and complications of renal transplantation</li> <li>• Precautions of medical treatment in a patient with renal impairment</li> <li>• Diagnosis and management of electrolyte imbalances</li> <li>• Modalities of dialysis</li> </ul>	2		A1-6,B1-3,C1-8,D1-5
<b>CCM 926Tc Pulmonology</b> <ul style="list-style-type: none"> <li>• Various clinical presentations and management of TB</li> <li>• Precautions of systemic steroid therapy in relation to TB</li> <li>• Clinical picture and basic management of asthma and COPD</li> <li>• Clinical picture and diagnosis of lung cancer</li> <li>• Clinical picture, diagnosis and management of sarcoidosis</li> <li>• Clinical picture and basic management of respiratory failure</li> <li>• Handling different modalities of mechanical ventilation and cardiac assisted devices</li> </ul>	3		A1-6,B1-3,C1-8,D1-5
<b>CCM 926Td Neurology</b> <ul style="list-style-type: none"> <li>• Clinical picture, investigations and management of CVS</li> <li>• Clinical picture, diagnosis and management of parkinsonism</li> <li>• Clinical picture, diagnosis and management of neuro-trauma</li> <li>• Clinical picture, diagnosis and management of spinal cord lesions</li> </ul>	2		A1-6,B1-3,C1-8,D1-5

<ul style="list-style-type: none"> <li>• Clinical picture, diagnosis and management of peripheral neuritis</li> <li>• Clinical picture, diagnosis and management of neuro-muscular disorders</li> <li>• Clinical picture, diagnosis and management of coma</li> <li>• Clinical picture, diagnosis and management of epilepsy</li> <li>• Clinical picture, diagnosis and management of meningeal disorders</li> </ul>			
<b>CCM 926Te Gastroenterology</b> <ul style="list-style-type: none"> <li>• Clinical presentations, investigations and management of different hepatic conditions presenting with elevated liver enzymes such as acute hepatitis, chronic hepatitis, liver cirrhosis, hepatic failure and hepatotoxicity (particularly drug induced).</li> <li>• Precautions of medical treatment in a patient with liver disease</li> <li>• Causes and management of vomiting, diarrhea and GIT bleeding</li> <li>• Clinical picture, diagnosis and management of peptic ulcer disease and gastro-esophageal reflux disease</li> <li>• Clinical picture, diagnosis and management of: Crohn's disease, ulcerative colitis and diverticulosis</li> </ul>	2		A1-6,B1-3,C1-8,D1-5
<b>CCM 926Tf Surgical care+ organ transplantation and toxicology</b> <ul style="list-style-type: none"> <li>• Postoperative management to all surgical procedures including neurosurgery, cardiothoracic, cardiovascular, ENT, plastic and neurosurgery.</li> <li>• Postoperative management of organ transplant patients</li> </ul>	3		A1-6,B1-3,C1-8,D1-5
<b>SCIENTIFIC ACTIVITIES</b>			
Scientific activities	5	5	A1-6,B1-3,C1-8,D1-6
<b>PRACTICAL TRAINING PROGRAM</b>			
<b>CCM 926C Practical Training Program</b>	50	70	A1-6,B1-3,C1-8,D1-5
<b>MEDICAL DOCTORATE THESIS</b>			
MD Thesis	40	20	A1-6,B1-3,C1-8,D1-6

### **MD Thesis:**

All MD degree students should prepare a thesis in Critical Care Medicine. 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 participate in the scientific activities of the department such as:

- Journal club once every 1-2 weeks
- Monthly mortality and morbidity discussions
- Weekly grand round lectures

- Seminars (including recent topics and controversial issues) once weekly. Candidates are expected to participate in the discussions.
- Scientific meetings and conferences arranged by the department
- Attendance of thesis discussions

**Candidates are required to be acquainted by the following scientific journals.**

1. Year book of critical care.
2. Journal of critical care.
3. Journal of American College of Cardiology.
4. New England Journal of Medicine.
5. The Medical Journal of Cairo University.
6. Journal of Egyptian colleague of critical care physicians.

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

## **REGULATIONS FOR PROGRESSION AND PROGRAM COMPLETION**

After collecting the required credit points for the respective courses, the advanced residency training, the scientific activities and the thesis the student will be eligible to sit for the final examination. In case the student fails to pass the examination, he/she may resubmit for the next examination. The candidate will receive his/her degree after passing this final examination. MD degree should be obtained within a maximum of 6 years after registration date.

### **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.

- **Summative Assessment**

According to the Faculty of Medicine, Cairo University Bylaws for post graduate programs (July 2009). Students should be assessed at the end of the program.

#### **B: Assessment Schedule:**

The written exam will be held in April/October every year

Day one: first written paper

Day two: second written paper

Day three: Problem solving paper

Day four: 2 papers for the elective courses

(The student choose an elective course)

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

**C: Weighing Of Assessment (Marks allocated to courses):**

- 50 marks for each credit point

Table 2: C: Clinical exam;

P: practical exam

Courses		Marks			Total
Code	Title	Written	Oral	C/P	
CCM 926	Advanced critical care	400	200	200+100	900
CCM 926 Ta	Cardiology				
CCM 926 Tb	Nephrology				
CCM 926 Tc	Pulmonology				
CCM 926 Td	Neurology				
CCM 926 Te	Gastroenterology				
CCM 926 Tf	Surgical post- operative ICU, Organ Transplantation & Toxicology				
Elective courses		125	75	-	200
CCM 922	Clinical Pathology				
CCM 926 MB	Molecular biology	<b>Total</b>			1100

**Remarks**

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



## Evaluation of Program Intended Learning Outcomes

<b>Evaluator</b>	<b>Tool</b>	<b>Sample</b>
1.Senior Students	Questionnaire at the end of the program	All the PG students
2.Alumni	The faculty is currently developing an Alumni office for postgraduates	Not yet determined
3.Stakeholders	A meeting will be arranged during annual conference of the department	Available representatives from: <ul style="list-style-type: none"><li>- Army hospitals</li><li>- National medical insurance</li><li>- Medical syndicate</li><li>- Ministry of health</li></ul>
4.External evaluators	Review program and courses Attending the final exam	Once before implementation Bi-annual report
5.College Quality Assurance committee	Annual program reviewer	

## Signatures

- ***Date of Approval by Department Council:***
- ***Program Coordinator: Prof. Dr. Osama Tayah, MD***
- ***Assistant Coordinator: Dr. Sayed Gaber, MD***

***Program Coordinator***  
**Prof. Dr. Osama Tayah, MD**

***Head of Department***  
**Prof. Dr. Waheed Radwan, MD**

# Matrix

Compulsory Courses		A Knowledge and Understanding										B Intellectual Skills					C Clinical Skills										D Attitudes								
		1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	
CCM 926 Ta	Cardiology	x	x	x	x	x	x						x	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x			
CCM 926 Tb	Nephrology	x	x	x	x	x	x						x	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x			
CCM 926 Tc	Pulmonology	x	x	x	x	x	x						x	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x			
CCM 926 Td	Neurology	x	x	x	x	x	x						x	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x			
CCM 926 Te	Gastroenterology	x	x	x	x	x	x						x	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x			
CCM 926 Tf	Surgical post- operative ICU, Organ Transplantation & Toxicology	x	x	x	x	x	x						x	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x			
<b>Elective Courses</b>																																			
CCM 922	Clinical Pathology																																		
CCM 926 MB	Molecular biology																																		
<b>Scientific Activities</b>		x	x	x	x	x	x						x	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x	x		
CCM 926 C2	<b>Practical Training Program</b>	x	x	x	x	x	x						x	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x			
	<b>MD thesis</b>	x	x	x	x	x	x						x	x	x			x	x	x	x	x	x	x	x			x	x	x	x	x	x		