MD. ROGRAMME SPECIFICATION

Cardiovascular Department

Faculty of Medicine– Mansoura University

COURSE SPECIFICATION

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Program Title & Code	Postgraduate **MD degree** of cardiovascular medicine / CARD600
(2) Final award/degree	**MD Cardiovascular Medicine**
(3) Department (s)	Department of **Cardiovascular Medicine**
(4) Coordinator	Dr. Ahmed Wafa Dr. Moheb Magdy
(5) External evaluator (s)	**Prof. Medhat Mohammad Ashmawy** (Professor of Cardiovascular medicine - Tanta Faculty of Medicine)
(6) Date of approval by the Department`s council	**24-5-2016**
(7) Date of last approval of program specification by Faculty council	9-8-2016

(B) Professional information

(1) Programme Aims:

The broad aims of the Programme are as follows:

1- Explain the Applied Embryology and Anatomy Basics of the different cardiovascular entities

2- Explain the Applied Physiologic Basics of the different aspects of Cardiovascular System

3- Describe and identify causes, pathogenesis, clinical Features , presentation , diagnosis and management of all cardiovascular disorders

4- Apply cardiovascular Preventive measures.

5- Use cardiovascular therapeutic modalities and protocols

6- Design a clinical study and research project in the field of cardiovascular medicine with stress on major problems in local and national bases

7- To update and renew his knowledge from the Updated Published Articles in the field of CVM

8-To provide an agreed framework for the purposes of training doctors in cardiovascular medicine.

(1) Intended Learning Outcomes (ILOs):

Intended learning outcomes (ILOs); Are four main categories: knowledge & understanding to be gained, intellectual qualities, professional/practical and transferable skills.

On successful completion of the course, the candidate will be able to:

A- Knowledge and Understanding

A1- Illustrate and explain the applied embryology and anatomy of the cardiovascular system
A2- Illustrate and explain the applied physiologic basics of the cardiovascular system
A3- Understand basic and updated knowledge of CV Drug therapeutics
A4- Understand basic and updated knowledge of CV Pathology.
A5- Discuss basic and updated knowledge of investigatory methods of CVM
A6 - Discuss basic and updated knowledge of patient management and different modes of diagnostic and therapeutic modalities of CV diseases .
A7- Design research project and training program in CVM.
A8- Present the cardiovascular knowledge and clinical practice in local meeting and national and international conferences.
A9- Discuss management strategy for cardiac patients and arrangement of clinical research that improve the management of major cardiovascular health problems with special stress on preventive strategies

B- Intellectual skills

B1- Apply the cardiovascular embryology and anatomy Facts During clinical diagnosis and management of cardiovascular diagnosis.

B2- Apply the facts of physiology which are appropriate to clinical diagnosis and management of cardiovascular diagnosis.

B3: Interpret the data gained from patient interrogation and clinical examination to reach a provisional diagnosis and differential diagnosis that facilitate selection of diagnostic procedures

B 4: Interpret different ECG modalities with recognition of the normal pattern and abnormalities in different cardiovascular diseases

B 5: Interpret the normal and abnormal non-invasive cardiac imaging including plain radiology, Echocardiography with its modalities, cardiac CT and CT angiography, radioisotope studies of the heart and MRI examination of the heart

B 6: Interpret the data reported from different cardiac invasive diagnostic and therapeutic techniques including cardiac catheterization and electrophysiological studies and invasive monitoring

C- Professional/practical skills

C1-Performing the standard clinical general body system examination in the inpatients, outpatients as well as during emergency situation

C2-Perform proper care of patent with acute clinical situations

C3-Performing the specific local cardiac examination

C 4: Perform ECG recording and reporting (level II, III)*

C 5: Practice Stress ECG and reporting (level I, II, III)*

C 6: Perform 24 h Holter ECG monitoring and reporting (level I, II, III)

C 7: Practice Echocardiography examination with its different modalities; TTE (level I, II, III), TEE, stress ECHO and reporting (Level I, II)

C 8: Perform external cardioversion and basic life support (level I, II, III)

C 9: Insert temporary pacemaker (level I, II)

C 10: Practice permanent pacemaker follow up and programming (level I, II)

C 11: Assist and practice cardiac catheterization of both right and left side, coronary angiography and percutaneous coronary intervention (level I, II)

*** *Level I: Observation, Level II: Do under supervision, Level III: main operator***

D- Communication & Transferable skills

D 1: Communicate effectively with patients, families and public

D 2: Communicate effectively with physicians, other health care professionals and health related agencies

D 3: Work effectively as a member or leader of a health care team or other professional group

D 4: Maintain comprehensive, timely and legible medical records

D 5: Conduct a good training for the young colleagues, participate in CME program and perform self-appraisal.

D 6: Conduct an effective lecture and presentation according to the known standards and time schedule.

D 7: Share in design and participate effectively in research project that improve patient care and population health in our locality and allover Egypt

	A1	A1	A6	A9	A5	A7	A8	A9
Objective1	✔							
Objective2		✔						
Objective3			✔					
Objective4				✔				
Objective5					✔			
Objective6						✔		
Objective7							✔	
Objective8								✔

	B1	B2	B3-B5	B3-B5	B5	B5–B6	B5–B6	B5–B6
Objective1	✔							
Objective2		✔						
Objective3			✔					
Objective4				✔				
Objective5					✔			
Objective6						✔		
Objective7							✔	
Objective8								✔

	C3	C1	C4-C11	C4-C11
Objective1	✔			
Objective2		✔		
Objective3			✔	
Objective4				✔
Objective5				
Objective6				
Objective7				
Objective8				

(3) Academic standards:

Academic standards for the programme are attached in Appendix I. in which NARS issued by the National Authority for Quality Assurance & Accreditation in Education are used. External reference points/Benchmarks are attached in Appendix II.

3.a- External reference points/benchmarks are selected to confirm the appropriateness of the objectives, ILOs and structure of assessment of the program: The European Society of Cardiology

- European Society of Cardiology Core Curriculum for General Cardiologists 2013 Update prepared by the education committee.

http://www.escardio.org/Guidelines-&-Education/Career-development/ESC-and-education/ESC-core-curriculum-and-CME-catalogue

3.b- Comparison of the specification to the selected external reference/ benchmark:

- All programme aims of the Benchmarks are covered by the current programme.
- The programme courses are matched by 80% degree to those offered by the international universities except in the context of credit hours.

(4) Curriculum structure and contents:

4.a- Duration of the programme (in years or months):…36 months

4.b- programme structure:

Candidates should fulfill a total of ……60……credit hours

First part: 5 credit hours.

Second part: 25 credit hours.(24 for compulsory course and 1 for Elective Course)+15 practical credit hours

Thesis: 15 credit hours

(2) Programme courses:

First part

a- Compulsory courses:

Course Title	Course Code	NO. of hours per week					Total teaching hours
		Theoretical		Laboratory /practical	Data terpretatior	Total	
		Lectures	seminars				
Applied physiology	CARD 614 AP	30	7.5			2.5	37.5
Applied anatomy	CARD 416 AA	30	7.5			2.5	37.5

b- Elective courses:

None

Second part (60 weeks)

a- Compulsory course **:(Cardiovascular Medicine): Divided into Four Modules:-1-2-3-4**

Course Title	Course Code	NO. of hours per week				Total teaching hours
		Theoretical		Laboratory /practical	Total	
		Lectures	seminars			
Cardiovascular Diseases	CARD 614 CM	360		450		810
Module 1	CARD 614 CM1	90		115		205
Module 2	CARD 614 CM2	90		110		200
Module 3	CARD 614 CM3	90		115		205
Module 4	CARD 614 CM4	90		110		200

b- Elective courses:

1- Stem Cell Transplantation
2- Preventive Cardiology

3- Cardiovascular Genetics
4- EPS and cardiac pacing

Program–Courses ILOs Matrix

Program ILOs are enlisted in the first row of the table (by their code number: a1, a2……etc), then the course titles or codes are enlisted in first column, and an "x" mark is inserted where the respective course contributes to the achievement of the program ILOs in question.

P.S. All courses` specifications are attached in Appendix III.

Course Title/Code	A1	A2	A3-A9
Applied Anatomy / CARD 614 AA	X		
Applied Physiology / CARD 614 AP		X	
Cardiovascular Diseases /CARD 614 CM			X

Course Title/Code	B1	B2	B3-B6
Applied Anatomy / CARD 614 AA	X		
Applied Physiology / CARD 614 AP		X	
Cardiovascular Diseases /CARD 614 CM			X

Course Title/Code	C11	C4	C1-3 C5-10
Applied Anatomy / CARD 614 AA	X		
Applied Physiology / CARD 614 AP		X	
Cardiovascular Diseases /CARD 614 CM			X

(3) Programme admission requirements:

●General requirements:

According to the faculty postgraduate bylaws Appendix IV.

●Specific requirements (if applicable):

None

(4) Regulations for progression and programme completion:

Student must complete minimum of 60 credit hours in order to obtain the M.D. degree, which include the courses of first and second parts, thesis and activities of the log book.

● Registration for the M.D. thesis is allowed 18 months from the day of registration to the programme and must fulfill a total of 15 credit hours including material collection, laboratory work, patients follow-up, and meetings with supervisors.

Log book fulfillment:

● Student must fulfill a minimum of 15 credit of log book activities including the activities in log book; grand rounds, cardiac outpatient clinic, Echo lab, exercise ECG lab, pacemaker follow up unit, cath lab, ICU and emergency room

● Student must present at least 6 case presentation/year

● Lectures and seminars of the previously described courses must be documented in the log book and signed by the lecturer.

● Works related to thesis must be documented in the log book and signed by the supervisors.

●Any workshops, conferences, thesis discussions and scientific meetings should be included in the log book.

Final exam:

First part

Tools	Mark
Applied Physiology	Written exam: 100 degree foe each (20for MCQ, 80 for written exam)
Applied Anatomy	Written exam: 100 degree foe each (20for MCQ, 80 for written exam)

Second part

Tools	Mark
Cardiovascular Medicine	
Written exam **Cardiovascular Diseases** (2 papers with time allowed 3 hours for each paper) **Commentary**	90+90 60
MCQ	60
Oral exam	100
Viva exam	100
Clinical exam	100
Total marks:	600
Elective course	
Written	24
MCQ	6

(5) Evaluation of Programme's intended learning outcomes (ILOs):

Evaluator	Tools*	Sample size
Internal evaluator **(s)** • **Prof. Fawzia El-Demerdsh** • **Prof. Essam Mahfouz** • **Prof Mohammad Baiomy Shehab**	**Group discussion and meeting**	
External Evaluator **(s)** **Prof. Medhat Mohammed Ashmawy**	**Reviewing according to external evaluator checklist report.**	
Senior student **(s)**		
Alumni	**None**	
Stakeholder **(s)**	**None**	
others	**none**	

* TOOLS= QUESTIONNAIRE, INTERVIEW, WORKSHOP, COMMUNICATION, E_MAIL

We certify that all information required to deliver this programme is contained in the above specification and will be implemented. All course specification for this programme are in place.	
Programme coordinator: Name: Prof. Dr Ahmed Wafa Dr Moheb Magdy	Signature & date:
Dean: Name:	Signature & date:
Executive director of the quality assurance unit: Name:	Signature & date:

مقارنة ما يقدمه البرنامج من نتائج تعليمية مستهدفة مع المعايير المرجعية لبرنامج الدكتوراه في طب أمراض القلب و الأوعية الدموية

أ ـ المعرفة والفهم:

المقررات التى تحقق المعايير الأكاديمية للبرامج	ILOs مخرجات التعلم المستهدفة	(ARS) Benchmark المعايير الأكاديمية لجامعة European Society of Cardiology Core Curriculum for General Cardiologists	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الدكتوراه في طب امراض القلب و الاوعية الدموية)
Cardiovascular Diseases	A 3,4,5,6	Advances in technology call for sub-specialization in many areas of cardiology, especially in those where skills are highly dependent on the number of examinations or interventions performed	1- Recent advances and areas under research in the field of Cardiovascular medicine
Cardiovascular Diseases	A7,8	stimulating trainees to participate in basic or clinical research and to develop critical and research-oriented approach to clinical practice. When cardiovascular research is performed on a full-time basis or to an extent that prevents sufficient progression of clinical training, adaptation of the total training time must be considered	2- Scientific research ethics, research methodology & research design. Curriculum must advance knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care.
Cardiovascular Diseases	A9	The process for medical decision-making and patient information is guided by the 'four principles' approach to healthcare ethics: autonomy, beneficence, non-maleficience, and justice	3- Legal aspects in practice of cardiovascular medicine as well as medical ethics.
Cardiovascular Diseases	A8,9	Assumption of responsibility for the appropriate ordering and performance of invasive tests, while carefully balancing the risks and benefits of these procedures.	4- Principles and basic concepts of quality in professional practice including planning, improvement of performance and control of practicing outcomes.
Cardiovascular Diseases Applied Anatomy Applied Physiology	A 1,2,3,4,5,6	Teach the knowledge, skills, clinical judgment, attitudes, and values that are essential to cardiovascular medicine	5- Knowledge related to cardiovascular medicine development, patient safety, and research results in improving public health outcomes.

ب ـ القدرات الذهنية :

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لجامعة European Society of Cardiology Core Curriculum for General Cardiologists	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الدكتوراه في طب أمراض القلب و الأوعية الدموية)
Cardiovascular Diseases	B 3,4	To develop expertise in the consultative evaluation of cardiovascular problems and presentations, to acquire the skills necessary to rapidly and efficiently triage medical problems, to communicate assessments and recommendations to colleagues and, where necessary, to implement diagnostic and therapeutic strategies	6- Medical data analysis, interpretation and proper therapy choice.
Cardiovascular Diseases	B 5.6	Throughout the training programme, and afterwards, the cardiologist should apply the best available evidence to deliver optimal patient centred care, following the principles of evidence based medicine as developed in the Clinical Practice Guide- lines of the ESC	7- Medical problem solving and Evidence-based medicine.
Cardiovascular Diseases	B6	Basic, clinical, and/or translational research in cardiovascular medicine should be an inherent part of the cardiovascular training programme	8- Participation in research development and innovation.
Cardiovascular Diseases *Log book "personal development programs"	B6	The training, faculty encourage trainees to cultivate an attitude of scholarship and dedication to continuing education that will remain with them throughout their professional careers	9- Scientific paper reviewing.
Cardiovascular Diseases	B3	Risk assessment and the prevention of cardiovascular disease in their community and in their patients.	10- Risk assessment in Cardiovascular medicine
Cardiovascular Diseases	B1,2,3	the training programme should be clearly defined for each individual, incorporate a periodic review of their progress, and formal assessment at least once a year	11- Planning for improvement of professional performance in the field of cardiovascular medicine. Residents are expected to develop skills and habits to be able to meet the following goals: (1) identify strengths, deficiencies, and limits in one's knowledge and expertise; (2) set learning and improvement goals; (3) identify and perform appropriate learning activities; (4)

			systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement; (5) Incorporate formative evaluation feedback into daily practice; (6) locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems; (7) use information technology to optimize learning; and participate in the education of patients, families, students, residents and other health professionals.
Cardiovascular Diseases	B 3	A system is in place to track the competency of each fellow as they learn those skills.	12- Decision making skill.
Cardiovascular Diseases	B6	Intensive training in invasive and noninvasive clinical cardiologic techniques, and in basic and clinical cardiovascular research, individually tailored, prepares each fellow to pursue his/her career at the forefront of cardiology.	13- Development, innovation and medical breakthrough.
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ج - المهارات العملية:

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لجامعة European Society of Cardiology Core Curriculum for General Cardiologists	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الدكتوراه في طب أمراض القلب و الأوعية الدموية)
Cardiovascular Diseases	C1.2.11	The ability to apply knowledge to clinical problems requires mastery of the indications for, and the performance and interpretation of cardiological investigations, treatments, and procedure	15- Professionalism and up to date practice. Providing patient care that is compassionate, appropriate, & effective for the treatment of health problems and the promotion of health. In this context; Residents must demonstrate a commitment to carrying out professional responsibilities & an adherence to ethical principles. Residents are expected to demonstrate: (1) compassion, integrity, and respect for others; (2) responsiveness to patient needs that supersedes self-interest; (3) respect for patient privacy and autonomy; (4) accountability to patients, society and the profession; and,(5) sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture,

			race, religion, disabilities, and sexual orientation.
			16- Medical report writing and evaluation/appropriateness of workers' medical report.
Cardiovascular Diseases	C1.2.3	The cardiologist must be an effective communicator; at all stages of the clinical process it is essential to be able to explain, in layman's terms, the significance of the findings and their implications	17- Ability to investigate and evaluate the Health of workers and workplace environment, to appraise and assimilate scientific evidence, and to continuously improve worker's health based on constant self-evaluation and life-long learning.
Log book "personal development programs"	C4,5,6,7	To adapt to technological innovations, to provide the educational and experiential preparation necessary to underpin progression, where desired, to further sub-specialty training and, above all, to respond to the changing expectations of society.	18- Effective use of IT and healthcare information system in medical practice and patient medical records to optimize learning; and participate in the education of patients, families, students, residents and other health professionals
Cardiovascular Diseases	C 1.2.3.4.5.6	The training should imbue the cardiologist with the habit of life-long learning and enable them to improve their knowledge of and experience in the practice of cardiology, Importance of regular, structured, and formally documented assessment, which is crucial to implementation of the curriculum	19- Planning for improvement of professional performance in the field of cardiovascular medicine. Residents are expected to develop skills and habits to be able to meet the following goals: (1) identify strengths, deficiencies, and limits in one's knowledge and expertise; (2) set learning and improvement goals; (3) identify and perform appropriate learning activities; (4) systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement; (5) incorporate formative evaluation feedback into daily practice; (6) locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems; (7) use information technology to optimize learning; and participate in the education of patients, families, students, residents and other health professionals

د- مهارات الاتصال:

المقررات التى تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لجامعة European Society of Cardiology Core Curriculum for General Cardiologists	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الدكتوراه في طب أمراض القلب و الأوعية الدموية)
Cardiovascular Diseases	D 1 - 2	The objectives should include knowledge, and specific and generic skills including communication and appropriate behaviors and attitudes that will further be reinforced during ongoing training	20- Interpersonal and communication skills that result in the effective exchange of information and collaboration with workers, their families, and other health professionals
logbook "personal development courses	D 5	The fellows are afforded opportunities to present seminars on clinical or basic research topics as well as to participate in monthly journal clubs	21- Teaching and evaluation skills as senior staff.
logbook Activities	D 4	Completion of the curriculum in general cardiology should equip the trained cardiologist with the knowledge, skills, behaviours, and attitudes to act independently	22- Self-appraisal and life-long learning.
logbook "personal development courses	D5.6	Tutorial lectures are provided each year to provide fellows with basic concepts in clinical cardiology, biostatistics and clinical epidemiology as well as cellular and molecular biology	23- Accessibility to specialty-specific and other appropriate reference material in print or electronic format. Electronic medical literature databases with search capabilities.
logbook "personal development courses	D 2,3	The general cardiologist is a team-worker who interacts closely with sub-specialty cardiologists, other medical specialties, nurses, paramedics, and other healthcare professionals	24- Teamwork/leadership.
logbook "personal development courses	D 4		25- Time management and meeting organization