MEDICAL DOCTORATE (M.D.) DEGREE PROGRAM AND COURSES SPECIFICATIONS FOR

Cardiovascular Medicine

(According to currently applied Credit point bylaws)

Cardiovascular department
Faculty of medicine
Assiut University
2022-2023

M. D. degree of cardiovascular Medicine

A. Basic Information

- Program Title: M. D. degree of cardiovascular Medicine
- Nature of the program: Single.
- Responsible Department:
  Cardiovascular department
- Program Academic Director (Head of the Department):
- Prof. Amr A Yossef
- Coordinator (s):
  - Principle coordinator:
    Prof: Mohamed Abdel Ghany Kaoriem
  - Assistant coordinator (s)
    DR. Marwan sayed
- Internal evaluators:
  Prof: Yehia Kishk
- External evaluator
  Prof: NASSER MOHAMED TAHA - Menia University
- Date of Approval by the Faculty of Medicine Council of Assiut University: 23-9-2014.
- Date of most recent approval of program specification by the Faculty of Medicine Council of Assiut University: 27/11/2022

- Total number of courses: 8 courses

First par: 5 courses.
Second part: 1 course.
Elective courses: 2 courses

B. Professional Information

1- Program aims

I/1Enable candidates to keep with international standards of cardiac patients care by mastering high level of clinical skills, bedside care skills, in addition to update medical knowledge as well as clinical experience and competence in the area of cardiovascular diseases, non invasive and invasive investigations of cardiovascular diseases and enabling the candidates of making appropriate referrals to a sub-specialis

1/2. **Provide assistant lecturers with fundamental knowledge of unit care as regards;** mastering dealing with critically ill cardiac patients, CCU equipments, techniques, indications, contraindications and training skills of different coronary care techniques.

1/3 **Enable candidates to perform high standard scientific medical research and how to proceed with publication in indexed medical journals.**

I/4 **To provide the candidates with skills**

- Enabling them to have professional careers as a consultant in Egypt.
- Making them recognized as a consultant abroad.
- Enabling them to continue self learning in subspecialties.
- Enabling them to master different research methodology and do their own.

2-Intended learning outcomes (ILOs) *for the whole program*:

2/1Knowledge and understanding:

MD student must be able to demonstrate:-

A. Demonstrate in-depth knowledge and understanding of theories, basics and updated biomedical, clinical epidemiological and socio – behavioral science relevant to his speciality as well as the evidence – based application of this knowledge to patient care.

B. Explain basics, methodology, tools and ethics of scientific medical, clinical research.

C. Mention ethical, medico logical principles and bylaws relevant to his practice in the field of cardiovascular medicine.

D. Mention principles and basics of quality assurance and quality improvement in medical education and in clinical practice of cardiovascular medicine.

E. Mention health care system, public health and health policy, issues relevant to this speciality and principles and methods of system – based improvement of patient care in common health problems of the field of cardiovascular medicine.

2/2 Intellectual outcomes

A. Apply the basic and clinically supportive sciences which are appropriate to the speciality related conditions / problem / topics.

B. Demonstrate an investigatory and analytic thinking “problem – solving “approaches to clinical situation related to speciality.

C. plan research projects.

D. Write scientific papers.

E. Participate in clinical risk management as a part of clinical governance.

F. Plan for quality improvement in the field of medical education and clinical practice in his speciality.

G. Create / innovate plans, systems, and other issues for improvement of performance in his practice.

H. Present and defend his / her data in front of a panel of experts.

I. Formulate management plans and alternative decisions in different situations in the field of cardiovacular medicine.

2/3 Skills

2/3/1 Practical skills (Patient Care)

Students will be able to:

A. Provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

p.s. Extensive level means in-depth understanding from basic science to evidence – based clinical application and possession of skills to manage independently all problems in field of practice.

B. Provide extensive level of patient care ***for patients with all common diagnoses and for uncomplicated procedures*** related to cardiovascular medicine.

C. Provide extensive level of patient care ***for non-routine, complicated patients and under increasingly difficult circumstances***, while demonstrating compassionate, appropriate and effective care.

D. Perform diagnostic and therapeutic procedures considered essential in the field of cardiovascular medicine.

E. Handles unexpected complications, while demonstrating compassion and sensitivity to patient needs and concerns.

F. Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families in cardiovascular medicine.

related situations**.**

G, Gather essential and accurate information about patients of cardiovascular medicine.related conditions.

H. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence and clinical judgment for cardiovascular medicine related conditions.

I. Develop and carry out patient management plans for cardiovascular medicine related conditions.

J. Counsel and educate patients and their families about speciality related conditions.

K. Use information technology to support patient care decisions and patient education in all cardiovascular medicine related clinical situations.

L. Perform competently all medical and invasive procedures considered essential for cardiovascular medicine related conditions / area of practices.

M. Provide health care services aimed at preventing cardiovascular medicine
related health problems.

N. Lead health care professionals, including those from other disciplines, to provide patient-focused care in cardiovascular medicine related conditions**.**

O. Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets. (Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible medical records)

2/3/2 General skills

Including:

- Practice-based Learning and Improvement
- Interpersonal and Communication Skills
- Professionalism
- Systems-based Practice

Practice-Based Learning and Improvement

A. Demonstrate the competency of care provision to patients in the different area of cardiovascular medicine
B. Appraise scientific evidence.
C. Continuously improve patient care based on constant self-evaluation and life-long learning.
D. Participate in clinical audit and research projects.
E. Practice skills of evidence-based Medicine (EBM).
F. Educate and evaluate students, residents and other health professionals.
G. Design logbooks.
H. Design clinical guidelines and standard protocols of management.
I. Appraise evidence from scientific studies related to the patients' health problems.
J. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies.
K. Use information technology to manage information, access on-line medical information; for the important topics.

Interpersonal and Communication Skills

L. Master interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals, including:-

- Present a case.
- Write a consultation note.
- Inform patients of a diagnosis and therapeutic plan completing and maintaining comprehensive.
- Timely and legible medical records.
- Teamwork skills.

M. Create and sustain a therapeutic and ethically sound relationship with patients.
N. Elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.

O. Work effectively with others as a member or leader of a health care team or other professional group.

Professionalism

P. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society.

Q. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.

R. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities.

Systems-Based Practice

S. Work effectively in health care delivery settings and systems related to cardiovascular medicine including good administrative and time management.

T. Practice cost-effective health care and resource allocation that does not compromise quality of care.

U. Advocate for quality patient care and assist patients in dealing with system complexities.

V. Design, monitor and evaluate specification of under and post graduate course and programs.

W. Act as a chair man for scientific meetings including time management.

3- Program Academic Reference Standards (ARS) (Annex 2)

Academic standards for Medical Doctorate (MD) degree cardiovascular medicine.

Assiut Faculty of Medicine developed MD degree programs' academic standards for different clinical specialties.

In preparing these standards, the General Academic Reference Standards for post graduate programs (GARS) were adopted. These standards set out the graduate attributes and academic characteristics that are expected to be achieved by the end of the

program.These standards were approved by the faculty council on 20/3/2010. These standards were revised and approved without changes by the Faculty Council on 23-9-2014.

These standards were re-revised and reapproved recently without changes by the Faculty Council on 27-11-2022

4- Program External References (Benchmarks)

1. **ACGME (Accreditation Council for Graduate Medical Education). http://www.acgme.org/acWebsite/navPages/nav_Public.asp**

2. **American Board of Cardiovascular Medicine** http://www.touchcardiology.com/suppliers/american-board-cardiovascular-medicine.

Comparison between program and speciality external reference		
Item	**Assuit University, Faculty of Medicine MD Cardiovascular medicine program**	**American Board of Cardiovascular Medicine**
Goals	Matched	Matched
ILOS	Matched	Matched
Duration	4 -6 years	Different
Requirement	Different	Different
Program structure	Different	Different

5- Program Structure

A. Duration of program: 4-6 years

B. Structure of the program:

Total number of credit points: = 420 CP

Master degree: 180 credit point

Didactic #: 37 CP (23.1%), practical 123 (76.9%), total 160 CP

Thesis and researches: 80 CP (33.3%)

First part
Didactic 10 (100%), practical 0 (0 %), total 10 CP
Second part
Didactic 24, (16.3 %), practical 123 (83.7 %), total 147 CP
Elective courses: 3 credit points
#Didactic (lectures, seminars, tutorial)

According the currently applied bylaws:
Total courses: 160 credit point
Compulsory courses: 157 credit point (98.1%)
Elective courses: 3 credit point (1.9%)

	Credit point	% from total
Basic science courses	10	4.1%
Humanity and social courses	3	1.2%
Speciality courses	147	61.3%
Others (Computer, …)	-	0
Field training	123	51.3%
Thesis	40	16.7%
2 published researches	40	16.7%
Master degree	180	

C. Program Time Table

Duration of program 4 years divided into

- Part 1

Program-related essential courses
Program-related basic science courses
- Medical statistic
- Research methodology

- Medicolegal Aspects and Ethics in Medical Practice and Scientific Research

Students are allowed to sit the exams of these courses after 6 months from applying to the M D degree.

Students are allowed to sit the exams of the remaining basic science courses after 12 months from applying to the MD degree.

Thesis and 2 published researches

For the M D thesis;

MD thesis subject should be officially registered within 1 year from application to the MD degree,

Discussion and acceptance of the thesis should not be set before 24 months from registering the M D subject;

It could be discussed and accepted either before or after passing the second part of examination

- Part 2

Program –related speciality courses and ILOs

Students are not allowed to sit the exams of these courses before 4 years from applying to the MD degree.

Two elective courses can be set during either the 1st or 2nd parts.

The students pass if they get 50% from the written exams and 60% from oral exams, 60% from clinical/practical exams of each course and 60% of summation of the written exams, oral and clinical/practical exams of each course

Total degrees 1700 marks.

500 marks for first part

1200 for second part

Written exam 40% - 70%.

Clinical/practical and oral exams 30% - 60%.

Curriculum Structure: (Courses):

Levels and courses of the program:

Courses and student work load list	Course Code	Core Credit points		
		Didactics	training	total
First Part				
Basic science courses (10 CP) Course 1: Medical statistics Course 2: Research methodology Course 3: Medicolegal Aspects and Ethics in Medical Practice and Scientific Research. Course 4: Anatomy &Physiology Course 5: **Cardiovascular 1** (Genetic and Molecular biology of cardiovascular diseases)	FAC309A FAC309B FAC310C CAR332A# **CAR331**	1 1 1 4(2+2) 3	- - - - -	1 1 1 4 3
Elective courses*	3 CP			
○ Elective course 1 ○ Elective course 2				
Thesis	40 CP			
Published researches**	40 CP			
Second Part	Speciality courses 24 CP Speciality Clinical Work (log Book) 123 CP			
Speciality Courses Course 6: **Cardiovascular 2**	**CAR332B**	24		**24**
Speciality Clinical Work (123 CP)	**CAR332B**		123	**123**
Total of second part				

#Didactic (lectures, seminars, tutorial)

* Elective courses can be taken during either the 1st or 2nd parts.

Student work load calculation:

Work load hours are scheduled depending on the type of activities and targeted competences and skills in different courses

Elective Courses#:

- Advanced medical statistics.
- Evidence based medicine.
- Advanced infection control.
- Quality assurance of medical education.
- Quality assurance of clinical practice.
- -Hospital management

Two of the above mentioned courses are prerequisites for fulfillment of the degree.

3. Thesis / Researches:

40 CP are appointed to the completion and acceptance of the thesis.

**Another 40 points are appointed to acceptance or publication of one research from the thesis in international indexed medical journals or publication of 2 researches from the thesis in local specialized medical journals.

6. Courses Contents (Annex 1)

The competency based objectives for each course/module/rotation are specified in conjunction with teaching/training methods, requirements for achieving these objectives and assessment methods.

See Annex 1 for detailed specifications for each course/ module

Annex 6 II: Program Matrix

7-Admission requirements

Admission Requirements (prerequisites) if any :

I. General Requirements:

- Master degree in the speciality.

II. Specific Requirements:

- Fluent in English (study language)

VACATIONS AND STUDY LEAVE

The current departmental policy is to give working residents -3-4 weeks leave prior to first/ second part exams.

FEES:

As regulated by the postgraduate studies rules and approved by the faculty vice dean of post graduate studies and the faculty and university councils.

8-Progression and completion requirements

- Examinations of the first part (Medical statistic, Research methodology and Medicolegal Aspects and Ethics in Medical Practice and Scientific Research) could be set at 6 months from registering to the MD degree.
- Students are allowed to sit the exams of the remaining essential courses of the first part after 12 months from applying to the MD degree.
- Examination of the second part cannot be set before 4 years from registering to the degree.
- Discussion of the MD thesis could be set after 2 years from officially registering the MD subject, either before or after setting the second part exams.
- The minimum duration of the program is 4 years.

The students are offered the degree when:

1. Passing the exams of all basic science, elective and speciality courses of this program as regulated by the post graduates approved rules by the faculty council.
2. Completing all scheduled CP and log book (minimum 80%).
3. Discussion and acceptance of the MD thesis.
4. Acceptance or publication of one research from the thesis in international indexed medical journals or publication of 2 researches from the thesis in local specialized medical journals.

9-Program assessment methods and rules (Annex IV)

Method	ILOs measured
Written examinations: Structured essay questions Objective questions MCQ Problem solving	K & I
Clinical: Long/short cases OSCE	K ,I, P &G skills
Structured oral	K ,I &G skills
Logbook assessment	All
Research assignment	I &G skills

Weighting of assessments: **Weighting of assessments:**

Courses		Degrees			
Courses	**Course code**	**Written Exam**	**Oral ***	**Practical / Clinical Exam**	**Total**
First Part					
Basic science courses:					
Course1: Medical Statistics	FAC309A	35	15		50
Course 2: Research Methodology	FAC309B	35	15		50
Course3:Medicolegal Aspects & Ethics in Medical Practice and Scientific Research	FAC310C	35	15		50
Course 4: Anatomy &Physiology	CAR332A #	120 (60+60)	80 (40+40)	-	200
Course 5: **Cardiovascular 1** (Genetic And Molecular biology of cardiovascular diseases)	**CAR331**	100	50	-	150
Total					

Second Part					
	Course code	written	oral	clinical	total
Speciality Courses Course 6: **Cardiovascular 2**	CAR332B	480(4 Papers) 120 marks for each	120	600	1200
Total of the second part		480	120	600	1200
Elective course 1		50	50		100
Elective course 2		50	50		100

* 25% of the oral exam for assessment of logbook

Total degree 1900

500 marks for first part

1200 for second part

Written exam 40% (480 marks).

Clinical/practical and oral exams 60% (720 marks).

200 marks for elective courses.

Examination system:

- **First part:**
  - Written exam 2 hours in Medical Statistics and Research Methodology + oral examination
  - Written exam 1 hours in Medicolegal Aspects and Ethics in Medical Practice and Scientific Research + oral examination
  - Written exam 3hours in Anatomy &Physiology+ oral exam.
  - Written exam 3 hours in Cardiovascular1(Genetic and Molecular biology of cardiovascular diseases)+ oral exam
- **Second part:**
  - Written exam four papers 3 hours for each in Cardiovascular 2 + Oral exam+ Clinical/Practical exam

➢ **Elective courses**

- Written exam one paper 1 hour in Elective course 1 + Oral & Practical exam
- Written exam one paper 1 hour in Elective course 2 + Oral & Practical exam.

10-Program evaluation

By whom	method	sample
Quality Assurance Unit	Reports Field visits	#
External Evaluator (s):According to department council External Examiner (s): According to department council	Reports Field visits	#
Stakeholders	Reports Field visits questionnaires	#
Senior students	questionnaires	#
Alumni	questionnaires	#

#Annex 5 contains evaluation templates and reports (Joined in the departmental folder).

11-Declaration

We certify that all of the information required to deliver this program is contained in the above specification and will be implemented.

All course specifications for this program are in place.

Contributor	Name	Signature	Date
Program Principle Coordinator:	**Dr Mohamed Abdel Ghany**		
Head of the Responsible Department (Program	**Prof. Amar A Yossef**		

Academic Director):			

Annex 1, Specifications for Courses / Modules

Annex 1: specifications for courses/ modules

First Part

1- Course 1 Medical statistics.
2- Course 2 Research methodology.
3- Course 3: Medicolegal Aspects and Ethics in Medical Practice and Scientific Research
4- Course 4 Anatomy & Physiology.
5- Course 5 Cardiovascular 1

Course 1: Medical statistics

Name of department: Public Health and Community Medicine
Faculty of medicine
Assiut University
2022-2023

1. Course data

- **Course Title: Medical statistics**
- **Course code: FAC309A**
- **Specialty: offered to all clinical and academic specialties**
- **Number of credit points: 1 credit point**
- **Department (s) delivering the course:** Pubic Health and Community Medicine
- **Coordinator (s):**
  - Course coordinator: Prof. Farag Mohammed Moftah
  - Assistant coordinator (s): Prof. Medhat Araby Khalil Saleh
- Date last reviewed: January -2022
- **Requirements (pre-requisites) if any:**
  - Completed Master degree in any of the academic or clinical departments of Medicine.

2. Course Aims

Enable gradute students to use statistical principles to improve their professional work and develop the concept of critical interpretation of data

3. Intended learning outcomes (ILOs):To be able to use statistical principals to manage data

A knowledge and understanding

ILOS	Methods of teaching/ learning	Methods of Evaluation
A. List the types of variables	Lecture and discussion	Written examination
B. Identify the methods of data collection	Lecture and discussion	Written examination
C. Describe the different sampling strategies	Lecture and discussion	Written examination
D. Identify types of tabular and graphic presentation of data	Lecture and discussion	Written examination
E. Identify measures of central tendency and dispersion	Lecture and discussion	Written examination
F. Identify the characters of normal distribution curve.	Lecture and discussion	Written examination
G. Detect the difference between parametric and non-parametric tests	Lecture and discussion	Written examination
H. Identify the concepts of correlation and regression	Lecture and discussion	Written examination

B. intellectual

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Describe the normal curves.	Lecture& Discussions	Written examination
B. Describe and summarize data	Lecture& Discussions	Written examination
C. Select the proper test of significance	Lecture& Discussions	Written examination
D. Interpret the proper test of significance	Lecture& Discussions	Written examination
E. Describe the difference between parametric and non-parametric tests	Lecture& Discussions	Written examination

C. Practical skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Design data entry files.	Tutorial on SPSS	Assignments SPSS exam
B. Validate data entry.	Tutorial on SPSS	Assignments SPSS exam
C. Manage data files.	Tutorial on SPSS	Assignments SPSS exam
D. Construct tables and graphs.	Tutorial on SPSS	Assignments SPSS exam
E. Calculate measures of central tendency and dispersion.	Tutorial on SPSS	Assignments SPSS exam
F. Select, apply and interpret the proper test of significance.	Tutorial on SPSS	Assignments SPSS exam

D general skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Appraise scientific evidence	Discussions	Research assignment
B. Use information technology to manage information, access on-line medical information; for the important topics.	tutorial	Research and audits' assignment

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
Introduction	A-F	A-D	-	A&B
Tables and graphics	D	A-D	-	A&B
Sampling	C	-	-	A&B
Methodology of data collection	B	-	-	A&B
Type of variables	A	-	-	A&B
Proportion test& Chi-square test	E,F	C&D	-	A&B
Student T test& Paired T test	E,F	C&D	F	A&B
ANOVA test	E,F	C&D	F	A&B
Non parametric tests	E,F	C&D	F	A&B
Discrimination analysis factor analysis	E,F	C&D	-	A&B
SPSS Introduction	A-F	A-D	-	A&B
Data entry and cleaning of data	A	A-D	A-C	A&B
Transforming of variables	A	A&B	A-C	A&B
Descriptive statistics	D	A-D	D&E	A&B
Graphic presentation	D	A&B	D	A&B
Chi square and interpretation of results	E,F	C&D	F	A&B
Correlation Regression	E,F	C&D	F	A&B
Multiple and logistic Regression	E,F	C&D	F	A&B

5. Course Methods of teaching/learning

1. Lectures
2. Assignments
3. Discussions
4. Exercises
5. Tutorial on SPSS v.16

6. Course assessment methods:

i. Assessment tools:

1. Attendance and active participation
2. Assignment
3. Practical SPSS examination
4. Written exam

ii. Time schedule: After 6 months from applying to the M D degree.

iii. Marks: 50 (35 for written exam and 15 for practical exam).

7. List of references

i. Lectures notes

Department lecture notes

ii. Essential books

- Medical Statistics: Book by Ramakrishna HK 2016
- Janet Peacock and Philip Peacock. Oxford Handbook of Medical Statistics (second edition.) Publisher: Oxford University Press, Print Publication Date: Nov 2010 Print ISBN-13: 9780199551286, Published online: Jun 2011. DOI: 10.1093/med/9780199551286.001.0001
- Leslie E. Daly MSc, PhD, Hon MFPHM,, Geoffrey J. Bourke MA, MD, FRCPI, FFPHM, FFPHMI, Interpretation and Uses of Medical Statistics, Fifth Edition, First published:1 January 2000, Print ISBN:9780632047635 |Online ISBN:9780470696750 |DOI:10.1002/9780470696750
- Marcello Pagano, Kimberlee Gauvreau: Principles of Biostatistics second edition published in 2000 by Brooks/Cole and then Cengage Learning. CRC Press, Feb 19, 2018 - Mathematics - 584 pages.

Iii- Recommended books

- Ji-Qian Fang (Sun Yat-Sen University, China) Handbook of Medical Statistics: https://doi.org/10.1142/10259 | September 2017.Pages: 852
- Robert H. Riffenburgh: Statistics in Medicine 4th Edition (2020). EvidenceEvidence Based Medicine How to practice and teach EBM.
- Discovering Statistics Using IBM SPSS Book by Andy Field, 2013.

iii. Periodicals, Web sites, etc

iv. **Periodicals , etc** Statistics in Medicine - Wiley Online Library

v. **Web sites** https://www.phc.ox.ac.uk/research/medical-statistics

8. Signatures

Course Coordinator: Farag Mohammed Moftah	**Head of the Department:** Prof. Eman Morsy Mohamed
Date: 10-1-2022	**Date**: 10-1-2022
Associated Coordinator: Prof. Medhat Araby Khalil Saleh	
Date: 10-1-2022	

Course 2: Research Methodology

Name of department: Public Health and Community Medicine
Faculty of medicine
Assiut University
2021-2022

1. Course data

- **Course Title: Research methodology**
- **Course code: FAC309B**
- **Specialty: Offered to all clinical and academic specialties**
- **Number of credit points: 1 credit point**
- **Department (s) delivering the course: Department of public health**
- **Coordinator (s):**
  - **Course coordinator:** Prof. Mahmoud Attia

Assistant coordinator (s): Prof. Ekram Mohamed

- Prof. Medhat Araby Khalil

- **Date last reviewed:** January 2022
- **Requirements (prerequisites) if any:**
  - **Completed Master degree in any of the academic or clinical departments of Medicine.**

2. Course Aims

To provide graduate students with the skills of:

- planning and implementing sound research
- writing a scientific research proposal

3. Intended learning outcomes (ILOs)

A knowledge and understanding

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Explain differences between different study designs.	Lecture and discussion Practical sessions Workshops	Written exam Log book assignments Practical exam
B. Identify sources and types of bias in research.	Lecture and discussion Practical sessions	Written exam Log book assignments Practical exam
C. Identify methods of data collection.	Lecture and discussion Practical sessions	Written exam Log book assignments
D. Select and design valid measurement tools for research.	Lecture and discussion Practical sessions Workshops	Written exam Log book assignments Practical exam
E. Explain ethical issues in conducting research on human subjects.	Lecture and discussion Practical sessions Workshops	Written exam Log book assignments
F. List the steps involved in proposal writing.	Lecture and discussion Practical sessions Workshops	Written exam Log book assignments Practical exam
G. Identify a research problem within a conceptual framework.	Lecture Discussion	Written exam Log book assignments

		Practical exam
H. Use the web sources to do a literature search	Practical tutorial on web	Log book assignment
I. Describe the rules of authorship in scientific writing.	Lecture and discussion Practical sessions Workshops	Written exam Log book assignments
J. Select the appropriate study design for the research question.	Lecture Practical sessions	Written exam Practical exam
K. Minimize bias in designing research.	Lecture	Written exam
L. Screening & theoretical background	Lectures	Written exam Practical exam
M. Mention the basic ethics for conducting a research and medicolegal principles relevant to data confidentiality.	lectures seminar	Written exam Practical exam

B. intellectual

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A- Apply basic science & knowledge for appraising scientific literature.	Discussions &seminars	Written exam Practical exam
B- Design research and present study data, in seminars.	lecture seminar	log book assignments
C- Design suitable epidemiological study.	lecture seminar	log book assignments
D- Design strategies for resolving ethical concerns in research, law, and regulations.	lecture Workshops	Written exam log book assignments
E- Apply coherently synthesize ideas and integrate lateral and vertical thinking.	lecture Workshops	log book assignments
F- Evaluate screening tests and interpreting their uses in different population.	lecture	Written exam Practical exam

C. Practical skills

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A- Conduct epidemiological studies, screening and surveys.	lectures seminar	written exam log book assignments
B- Identify steps required in fielding the study.	Lecture	Assignments Written exam
C- Managing data collection team.	lectures seminar	log book assignments
D- Identify steps required for calculation sensitivity, specificity, positive predictive value, negative predictive value, accuracy of a screening test.	Lecture Practical sessions	Assignments Written exam Practical exam
E- Be able to define and apply the epidemiologic criteria of causality and be able to distinguish between a measure of association and evidence of causality.	Lecture Practical sessions	Assignments Written exam Practical exam
F- Synthesize information from multiple sources for research writing and the ability to perform paper critique .	Lecture Practical sessions	Assignments Written exam Practical exam
G- Identify bias and confounding in epidemiological study designs, their types and ways to control them in various types of biases.	Lecture Practical sessions	Assignments Written exam Practical exam

D General skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A- Scientific paper and proposal writing skills: be able to write an introduction, objectives and the methodological section.	Tutorial	Written examination
B- Learn authorship ethical rules.	Tutorial	Written examination
C- Perform practice-based improvement activities using a systematic methodology (audit, logbook, critical appraisal)	- Lectures -Practical sessions - Discussion - Readings	critical appraisal
D- Appraise evidence from scientific studies(journal club)	- Lectures -Practical sessions - Discussion - Readings	critical appraisal
E- Conduct epidemiological studies, screening and surveys.	- Lectures -Practical sessions - Discussion - Readings	attendance and participation
F- Facilitate training of junior students and other health care professionals in different screening activities.	Field work Participation in projects	attendance and participation

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
G- Maintain ethically sound relationship with community members.	- Lectures -Practical sessions - Discussion - Readings	Written exams
H- Provide information using effective nonverbal, explanatory, questioning, and writing skills.	- Lectures -Practical sessions - Discussion - Readings	Written exams Practical exams
I- Present results of researches in seminars.	- Lectures -Practical sessions - Discussion - Readings	Log book assignments

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
J- Demonstrate respect, compassion, and integrity to the needs of society.	- Lectures - Discussion - Readings	Written exams
K- Manage potential conflicts of interest encountered by practitioners, researchers, and organizations.	- Lectures - Discussion - Readings	Written exams
L- Design strategies for resolving ethical concerns in research, law, and regulations.	Lectures - Discussion - Readings	Written exams Practical exams
M- Demonstrate ways to control for confounding in the analysis phase of a study	Lectures - Discussion - Readings	Written exams Practical exams
N- Demonstrate a commitment to ethical principles including confidentiality of participants' information and informed consent.	Lectures - Discussion - Readings	Written exams
O- Assess ethical considerations in developing communications and promotional initiatives.	- Lectures - Discussion - Readings	Written exams

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
Over view on research conduction and research ethics	A&E	A-D	A-C	C-G, I,L&M-O
How to write a research proposal	F,I	E	F	A-C&H
Observational study design	A& D	B & C	D	E & F
Experimental study design	A& D	B & C	B	E & F
Evaluation of diagnostic tests (Screening)	L	A	B& E	F
Systematic reviews and meta analysis	G, H & M	E& F	F	C, D
Confounding, bias & effect modification	B & K	D	E & G	M

5. Course Methods of teaching/learning:

1. Lectures
2. Assignments
3. Discussion
4. Exercises

6. Course assessment methods:

i. Assessment tools:

1. Attendance and participation
2. Log book assignments
3. Written examination
4. Practical examination

ii. Time schedule: After 6 months from applying to the M D degree.

iii. Marks: 50 (35 for written exam and 15 for practical exam).

7. List of references

i. Lectures notes

- Department lecture notes

ii. Essential books

- Research Design: Qualitative, Quantitative and Mixed Methods Approaches 4th Edition by John W. CreswellSAGE Publications, Inc; 4th edition (January 1, 2014)
- Research methodology: A step – by – step Guide for Beginners. Ranjit Kumar, 2020. Second edition https://books.google.com.eg/books?
- Medical Research Essentials Rania Esteitie, McGraw Hill Professional, third edition, Feb 5, 2014 - Medical - 104 pages
- Research Methodology in the Medical and Biological Sciences Petter Laake, Haakon Breien Benestad, Bjorn R. Reino Olsen, 4th edition , Academic Press, Nov 5, 2007 - Science - 512 pages

iv. Recommended books

- Research Methods in Education 7th Edition, by Louis Cohen, Lawrence Manion, Keith Morrison Publisher: Routledge; (April 22, 2011) www.routledge.com/textbooks/cohen7e.
- Research Methodology: A Practical and Scientific Approach Vinayak Bairagi, Mousami V. Munot · 2019, Research Methodology: A Practical and Scientific Approach - Google Books
- Based Medicine How to practice and teach EBM. David Sachett, Sharon E. Straus, W. Scott Richardson , William Rosenberg R.Brain Haynes
- Dissertation workshop open courseware JHSPH

8. Signatures

Course Coordinator: Prof.Mahmoud Attia	**Head of the Department:** Prof. Eman Morsy Mohamed
Date: 10-1-2022	**Date**: 10-1-2022

Course 3: Medicolegal Aspects and Ethics in Medical Practice and Scientific Research

Name of department:
Forensic medicine and clinical toxicology
Faculty of medicine
Assiut University
20122-2023

1. Course data

- **Course Title: Medicolegal Aspects and Ethics in Medical Practice and Scientific Research**
- **Course code: FAC310C**
- **Speciality: *General medicine, Special medicine, Pediatrics, Public health, Oncology and Rheumatology Emergency Medicine* (1st part).**
- **Number of credit points: 1 credit point**
- **Department (s) delivering the course: Forensic Medicine and Clinical Toxicology**

- **Coordinator (s):**
  - **Course coordinator:**
    Prof. Ghada omran
  - **Assistant coordinator (s) Assist.**
    Prof. Zaghloul Thabet

- **Date last reviewed:** April 2022
- **Requirements (prerequisites) if any :**
  - **Completed Master degree.**

2. Course Aims

To describe the basic ethical and medicolegal principles and bylaws relevant to practice in the field of General medicine, Special medicine, Pediatrics, Public health, Oncology and Rheumatology

3. Intended learning outcomes (ILOs):

A knowledge and understanding

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Mention principals of Taking consent.	Lecture and discussion	Oral &Written exam
B. Mention principals of Writing a death certificate	Lecture and discussion	Oral &Written exam
C. Mention principals of diagnosing death.	Lecture and discussion	Oral &Written exam
D. Mention principals of writing toxicological reports.	Lecture and discussion	Oral &Written exam
E. Explain principals of medical reports.	Lecture and discussion	Oral &Written exam
F. List indications and principals of induced emesis, gastric lavage and samples collection.	Lecture and discussion	Oral &Written exam

B. intellectual

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Present case , seminars in death certificate	Lecture and discussion	Oral &Written exam
B. Present case, seminars in toxicological cases	Lecture and discussion	Oral &Written exam

C. Practical skills

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Identify medical ethics and ethics in research.	Lecture and discussion	Reading Discussion
B. Prepare and write consent.	Lecture and discussion	Reading Discussion
C. Identify medical responsibilities.	Lecture and discussion	Reading Discussion
D. Write death certificate.	Lecture and discussion	Reading Discussion and active participation
E. Deal with a case of Suspicious death	Lecture and discussion	Reading Discussion and active participation
F. Perform gastric lavage, induce emesis, and obtain samples.		
G. Write medical and toxicological reports	Lecture and discussion	Reading Discussion and active participation
H. Develop and carry out		

patient management plans for Euthanaesia, and Organ Transplantation		
I. Counsel patients and their families about speciality related conditions including Permanent infirmities, Euthanasia, and Organ Transplantation		

D general skills

Competency and Skills	Methods of teaching/ learning	Methods of Evaluation
A. Present a case.	Lecture and discussion	Global rating logbook
B. Write a consultation note	Lecture and discussion	Global rating logbook
C. Inform patients and maintaining comprehensive.	Lecture and discussion	Global rating logbook
D. Make timely and legible medical records	Lecture and discussion	Global rating logbook
E. Acquire the teamwork skills	Lecture and discussion	Global rating logbook

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
1. Death and death certificate.	B,C	A	D,E	A
2. Medical Reports	A		G	A,D,E
3. Toxicological reports	D,F	B	G,F	A,E
4. Ethics in research.	A		A	
5. Medical ethics.	E		A,B,C,H,I	B,C,E

5. Course Methods of teaching/learning:

1. Lectures.
2. Discussions.
3. Exercises.

6. Course assessment methods:

i. Assessment tools:

1. Written examination.
2. Attendance and active participation.
3. Oral examination.

ii. Time schedule: After 6 months from applying to the M D degree.

iii. Marks: 50 (35 for written exam and 15 for oral exam).

7. List of references

i. Lectures notes

- Course notes.
- Staff members print out of lectures and/or CD copies.

ii. Essential books

- Bernard Knight and Pekka Saukko (2015: Knight Forensic Pathology. Hodder Arnold press

- Goldfrank, Lewis R.; Howland, Mary Ann; Hoffman, Robert S.; Nelson, Ewis S.; Lewin, Neal A (2019): Goldfrank's Toxicologic Emergencies, 11th ed. McGraw Hill / Medical.

- Medical Ethics Manual. World medical association. Third edition 2015.
- Medical ethics and law. Dominic Wilkinson, 3rdedition 2019.

iii. Recommended books

- Biswas Gautam (2021): Review of Forensic Medicine & Toxicology. 5th ed. Jaypee Brothers Medical Pub.

iv. Journal and web site

- Journals of all Egyptian Universities of Forensic Medicine and Clinical Toxicology.
- All International Journals of Forensic Medicine and Clinical Toxicology which available in the university network at www.sciencedirect.com. As :
  Forensic Science International Journal.
  Toxicology Letter.

8. Signatures

- Course Coordinator: **Prof. Ghada Omran**	**- Head of the Department:** **Prof. Randa Hussein Abdel hady**
Date: 17-4-2022	**Date**: 17-4-2022

Course 4: Anatomy& Physiology

Name of department: Cardiovascular department

Faculty of medicine

Assiut University

2022-2023

- **It is divided into 2 units(modules):**

- Unit 1: Anatomy.

- Unit 2: Physiology.

1. Course data

- **Course Title: Anatomy& Physiology**
- **Course code: CAR332A#**
- **Speciality: cardiovascular medicine.**
- **Number of credit points: 4 credit point, 4 CP(100%) for didactics, it is divided equally 2CP for each unit,0 CP for training.**
- **Department (s) delivering the course: cardiovascular medicine department in conjunction with Anatomy department for anatomy unit and physiology department for physiology unit.**
- **Coordinator (s):**
  - **Course/units coordinators: According to annual approval of departmental councils.**
- **Date last reviewed: 10/ 2022.**
- **Requirements (prerequisites) if any :**
  - **Completed Master degree.**

2. Course Aims

2/1 Acquire the candidate Basic anatomical and physiology facts and principles necessary for clinical reasoning and management of conditions in cardiovascular medicine.

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. illustrate the anatomical principles and details of the following concerned with applied anatomy to cardiovascular medicine(unit 1): - Embryology of heart and arch of aorta - Surface anatomy of heart and great vessels - Anatomy of the heart and detailed anatomy of cardiac chambers - anatomy of the heart and detailed anatomy of cardiac chambers - anatomy of brachiocephalic vessels with special stress on access to CVP - anatomy of aorta and peripheral vessels - Anatomy of pulmonary circulation. -Anatomy of coronary vessels blood components. B- Describe the physiological Principles and details of the following facts concerned with applied physiology to cardiovascular medicine(unit 2): - The physiological basis of cardiac action. - the physiology and pathopysiology of systemic and pulmonary circulation Including: • General physiology - hemostasis, coagulation & fibrinolysis - Acid- base balance - water and electrolyte regulation. - blood elements(RBCs & anemias) - hypertension and hypotension. - Cardiac performance (pump function & heart	-Lectures - seminars	-Written and oral examination - Log book

failure) - capillary circulation, body fluids formation & edema -hemorrhage & shock - regulation of respiration • . *Cardiovascular physiology* - functional characteristic of cardiovascular system &flow - physiology of cardiac muscles. - ECG & arrhythmias - cardiac cycle, arterial pulse& heart sounds - arterial and venous circulation and microcirculation - Syncope - pulmonary circulation - Circulatory changes during exercise and training - Coronary & cerebral circulations - respiratory failure, hypoxia and cyanosis & O2 therapy		

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of anatomy and Physiology with clinical reasoning, diagnosis and management of common diseases related to cardiovascular diseases.	-Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to cardiovascular Diseases including(blood gases analysis, blood pictures and electrolyte analysis, normal intracardiac pressure tracings, respiratory function, and angiogram)		

C- Practical skills

Practical skills= 0 CP

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform data management including data entry and analysis.	Observation and supervision -Written & oral communication	Log book

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.	-Observation and supervision -Written and oral communication	Log book
C. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		
D. Write a report on common conditions mentioned in A.A.		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
E. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	- Observation -Senior staff experience	Logbook

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Work effectively in relevant health care delivery settings and systems.	- Observation -Senior staff experience	Logbook

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: first Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
Course 4; unit 1: Anatomy				
The anatomical principles and details of the following:				
- Embryology of heart and arch of aorta	A	A,B	-	A-F
- Surface anatomy of heart and great vessels	A	A,B	-	A-F
- Anatomy of the heart and detailed anatomy of cardiac chambers	A	A,B	-	A-F
- anatomy of the heart and detailed anatomy of cardiac chambers	A	A,B	-	A-F
- anatomy of brachiocephalic vessels with special stress on access to CVP	A	A,B	-	A-F
- anatomy of aorta and peripheral vessels	A	A,B	-	A-F
- Anatomy of pulmonary circulation.	A	A,B	-	A-F
-Anatomy of coronary vessels blood components.	A	A,B	-	A-F
Course 4; unit 2: Physiology				
The physiological basis of cardiac action.	B	A,B	-	A,E
- the physiology and	B	A,B	-	A,E

pathopysiology of systemic and pulmonary circulation				
Including:				
a. General physiology	B	A,B	-	B
- hemostasis, coagulation & fibrinolysis	B	A,B	-	A-F
- Acid- base balance	B	A,B	-	A,F
- water and electrolyte regulation.	B	A,B	-	A-F
- blood elements(RBCs & anemias)	B	A,B	-	A,F
- hypertension and hypotension.	B	A,B	-	A-F
- Cardiac performance (pump function & heart failure)	B	A,B	-	A,F
- capillary circulation, body fluids formation & edema	B	A,B	-	A-F
-hemorrhage & shock	B	A,B	-	A,F
- regulation of respiration	B	A,B	-	A-F
b. Cardiovascular physiology	B	A,B		A,F
- functional characteristic of cardiovascular system &flow	B	A,B	-	A-F
- physiology of cardiac muscles.	B	A,B	-	A,F
- ECG & arrhythmias	B	A,B	-	A-F
The physiological basis of cardiac action.	B	A,B	-	A,F
- the physiology and pathopysiology of systemic and pulmonary circulation	B	A,B	-	A-F
cardiac cycle, arterial pulse& heart sounds	B	A,B	-	A,F
- arterial and venous	B	A,B	-	A-F

circulation and microcirculation				
- Synope	B	A,B	-	A,F
- pulmonary circulation	B	A,B	-	A-F
- Circulatory changes during exercise and training	B	A,B	-	A,F
- Coronary & cerebral circulations	B	A,B	-	A-F
- respiratory failure, hypoxia and cyanosis & O2 therapy	B	A,B	-	A,F

5 Course Methods of teaching/learning:

1. Didactic ; Lectures
2. Clinical rounds
3. Seminars Clinical rotations
4. (service teaching) Observation
5. Post graduate teaching
6. Hand on workshops
7. Perform under supervision of senior staff
8. Simulations
9. Case presentation
10. Case Taking

6 Course Methods of teaching/learning: for students of limited abilities

1. Didactic ; Lectures
2. Clinical rounds
3. Seminars Clinical rotations
4. (service teaching) Observation
5. Post graduate teaching
6. Hand on workshops
7. Perform under supervision of senior staff
8. Simulations
9. Case presentation
10. Case Taking

6. Course assessment methods:

i. Assessment tools:

- Clinical examination
- Written and oral examination
- Chick list
- log book & portfolio
- Procedure/case presentation
- One MCQ examination in f the second year and one in the third year
- Objective structured clinical examination
- Check list evaluation of live or recorded performance
- Patient survey
- 360o global rating

ii. Time schedule: at the 1st part

Marks 200(120 for written;60+60+80 for oral; 40+40)

7. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books (text books)

- Hursts the Heart,by Valentin Fuster (Author), Richard Walsh (Author), Robert A. Harrington (Author),2015.
- Braunwals Cardiovascular Medicine,A Textbook of Cardiovascular Medicine,9th Edition by Robert O. Bonow (Author), Douglas L. Mann MD (Author), Douglas P. Zipes MD (Author),12th edition.
- Textbook of Cardiovascular Medicine (Topol,Textbook of Cardiovascular Medicine) 3rd Edition ,2020 by Eric J. Topol (Editor), Robert M. Califf (Editor), M.D. Prystowsky, Eric N. (Editor),

iii. Periodicals, Web sites, … etc

- Journal of American College of Cardiology
- American Journal of Cardiology
- Circulation
- European heart Journal
- Journal of Egyptian Society of Cardiology

v. others: none.

9. Signatures

Course Coordinator	
Unit 1 Coordinator:	**Head of the Department:**
Date:	**Date:**
Unit 2 Coordinator:	**Head of the Department:**
Date:	**Date:**

Course 5: Cardiovascular 1
(Genetic and Molecular biology of cardiovascular diseases)

Name of department: Cardiovascular department
Faculty of medicine
Assiut University
2022-2023

1. Course data

Course Title: **Cardiovascular 1 (**Genetic and Molecular biology of cardiovascular diseases**).**

- **Course code: CAR331.**
- **Speciality: cardiovascular medicine.**
- **Number of credit points: 3 credit point, 3 CP(100%) for didactics, and 0 CP for training.**
- **Department (s) delivering the course: cardiovascular medicine department in conjunction with clinical pathology department.**
- **Coordinator (s):**
  - **Course/units coordinators: According to annual approval of departmental councils.**
- **Date last reviewed: 10/2022.**
- **Requirements (prerequisites) if any :**
  - **Completed Master degree.**

2. Course Aims

2/1 Acquire the candidate Basic **Genetic and Molecular biology of cardiovascular diseases** facts and principles necessary for clinical reasoning and management of conditions in cardiovascular medicine.

3. Intended learning outcomes (ILOs):

A-Knowledge and understanding

ILOs	**Methods of teaching/ learning**	***Methods of Evaluation***
A. **illustrate the details of the following concerned with Genetic and Molecular biology of cardiovascular diseases related to cardiovascular medicine;** - Structure & function of the nucleic acid. - Gene expression. - Mutation. - Biomolecular tools. - Biomolecular techniques. - Application of the molecular biology techniques in the cardiovascular diseases. - Cardiovascular disorders associated with gene abnormalities in details(in basics and updated knowledge).	-Lectures - seminars	-Written and oral examination - Log book
B- Outline basics of the rare presentation and associated with other clinical situations of diseases and conditions in **Cardiovascular disorders associated with gene abnormalities in details(in basics and updated knowledge**..	Lectures	Written and oral examination
C-Explain the facts and principles of the relevant basic(Genetic and Molecular biology) supportive sciences related to cardiovascular diseases **associated with gene abnormalities**		
D-Explain the facts and principles of the relevant		

clinically supportive sciences related to cardiovascular diseases **associated with gene abnormalities**		
E-Describe the basic ethical and medicolegal principles revenant to the cardiovascular medicine **associated with gene abnormalities**	Lectures	Written and oral examination

B-Intellectual outcomes

ILOs	**Methods of teaching/ learning**	**Methods of Evaluation**
A. Correlates the facts of Genetic and Molecular biology with clinical reasoning, diagnosis and management of common diseases related to cardiovascular diseases **associated with gene abnormalities.**	-Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to cardiovascular Diseases **associated with gene abnormalities**.		

C-Practical skills

Practical skills= 0 CP

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform data management including data entry and analysis.	Observation and supervision -Written & oral communication	Log book

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.	-Observation and supervision -Written and oral communication	Log book
C. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		
D. Write a report on common conditions mentioned in A.A.		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
E. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	- Observation -Senior staff experience	Logbook

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Work effectively in relevant health care delivery settings a nd systems.	- Observation -Senior staff experience	Logbook

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: first Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
- Structure & function of the nucleic acid.	A	A	-	C,D
Gene expression.	A	A	-	C,D
Mutation.	A	A	-	C,D
Biomolecular tools.	A	A	-	C,D
Biomolecular techniques	A	A	-	C,D
- Application of the molecular biology techniques in the cardiovascular diseases.	A	A	-	C,D
Cardiovascular disorders associated with gene abnormalities in details(in basics and updated knowledge)	A-E	A,B	-	A-F

5 Course Methods of teaching/learning:

- Didactic ; Lectures
- Seminars tutorial
- (service teaching) Observation
- Post graduate teaching
- Hand on workshops.
- Observation and supervision
- Written & oral communication.
- Observation
- Senior staff experience.

6 Course Methods of teaching/learning: for students of limited abilities

Extra didactic teaching and observation according to students need.

7. Course assessment methods:

- Assessment tools:
- Written exam
- Oral exam.
- Logbook.

ii. Time schedule: at the 1st part
iii. Marks: 150 (100 for written+ 50 for oral).

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books (text books)

- Hurst, The Heart 14th Edition by Valentin Fuster (Author), Robert Harrington (Author), Jagat Narula (Author),2021.
- Braunwals Cardiovascular Medicine,A Textbook of Cardiovascular Medicine,9th Edition by Robert O. Bonow (Author), Douglas L. Mann MD (Author), Douglas P. Zipes MD (Author),12th edition.

iii. Periodicals, Web sites, … etc

- Journal of American College of Cardiology
- American Journal of Cardiology
- Circulation
- European heart Journal
- Journal of Egyptian Society of Cardiology

v. others: none.

9. Signatures

Course Coordinator	
Course Coordinator:	**Head of the Department:**
Date:	**Date:**

Second Part
Speciality courses

Course 6: Cardiovascular 2(Advanced Cardiovascular medicine)

Name of department : Cardiovascular department

Faculty of medicine

Assiut University

2022-2023

I. Course data

- **Course Title: Cardiovascular 2(Advanced Cardiovascular medicine)**
- **course code: CAR332B.**
- **Number of credit points: 147credit point, 24 CP(16.3%) for didactics, and 123 CP(83.7 %)for training**
- **Speciality: Cardiovascular Medicine**
- **Department (s) delivering the course: department of cardiovascular diseases**
    - **It is divided into 4 units(modules):**

1) Unit 1 "Cardiovascular diseases."

2) Unit 2 " Cardiovascular emergencies."

3) Unit 3 " Non-invasive testing."

4)Unit 4 "Invasive testing."

- **Course coordinators:**

Principle coordinators:

Prof. mohamed abdel ghany

Amr A Youssef

Assistant coordinators:

Dr Marwan sayed

- **Date last reviewed: 9/2022.**

Units' Titles' list	% from total CP	Level (Year)	Core Credit points		
			Didactic	training	Total
Unit 1 "Cardiovascular diseases."	30%	1,2,3&4	7	37	44
Unit 2 " Cardiovascular emergencies."	30%	1,2,3&4	7	37	44
Unit 3 " Non-invasive testing."	25%	1,2,3&4	6	30	36
Unit 4 "Invasive testing."	15%	2&3	4	19	23
Total No. of Units:	4		24	123	147

- **Requirements of each unit and time table in details specified in logbook.**
- **Requirements (prerequisites) if any: Specified in joining logbook.**

2- Course Aims

2/1Enable candidates to keep with international standards of cardiac patients care by mastering high level of clinical skills, bedside care skills, in addition to update medical knowledge as well as clinical experience and competence in the area of cardiovascular diseases, non invasive and invasive investigations of cardiovascular diseases and enabling the candidates of making appropriate referrals to a sub-specialist

2/2 Provide assistant lecturers with fundamental knowledge of unit care as regards; mastering dealing with critically ill cardiac patients, CCU equipments, techniques, indications, contraindications and training skills of different coronary care techniques.

2/3 Enable candidates to perform high standard scientific medical research and how to proceed with publication in indexed medical journals.

2/4 To provide the candidates with Medical Doctorate degree

- Enabling them to have professional careers as a consultant in Egypt.
- Making them recognized as a consultant abroad.
- Enabling them to continue self learning in subspecialties.
- Enabling them to master different research methodology and do their own.

3. Course intended learning outcomes (ILOs)

Course 6; unit (Module) 1-4

A-Medical Knowledge and Understanding

ILOS	Methods of teaching/ learning	Methods of Evaluation
A- Explain update and evidence based etiology, definition, epidemiology, pathogensis, clinical picture, diagnosis ,management and prevention of the following common diseases and clinical conditions and complications : • **Cardiovascular diseases:** - Acute and chronic dyspnea - Chest pain indications, Define different causes and differential diagnosis - Atherosclerosis and Ischemic heart diseases (IHD). - Acute coronary syndromes (unstable angina, non ST elevation myocardial infarction [MI] and ST elevation - Chronic ischemic heart disease - Rheumatic fever and rheumatic heart diseases (RHD) - Infective endocarditis - Hypertension.	Didactic; Lectures Clinical rounds Seminars Clinical rotations (service teaching)	OSCE at the end of each year -log book & portfolio - One MCQ examination at the second half of the second year and another one in the third year

- Heart failure - Arrhythmia. - Syncope - Sudden cardiac death & resuscitation - Adult congenital heart disease (CHD) - Myocardial diseases - Pericardial diseases - Heart and other systems - Pregnancy and cardiac disease - Peripheral arterial diseases - Diseases of aorta and trauma to the aorta and heart - Pulmonary arterial hypertension - Thrombo-embolic venous disease - Cardiac tumors - Rehabilitation and exercise - Assessment of patients with cardiovascular disease to non cardiac surgery. - Management of critically ill patients with hemodynamic disturbances B. Illustrate the principles of: ***Non invasive and invasive investigation of cardiovascular diseases including the following:**		

-limitations, risks and predictive value of noninvasive and invasive investigations needed for diagnosis **- Routine appropriate Lab investigations related to conditions mentioned in A.A as follows**: ➢ Electrocardiogram (ECG) ➢ chest x ray interpretation ➢ Ambulatory ECG ➢ Stress testing ➢ Echocardiography ➢ Nuclear cardiology study interpretation ➢ Interpretation of cardiac CT and MRI ➢ Cardioversion ➢ Pericardiocentesis ➢ diagnostic cardiac catheterization including coronary angiography ➢ valvular and coronary intervention ➢ Pacing (temporary pacing) ***Pharamachology** **-Pharmacological Principles of** ***** General pharmacology **- Pharmacological details of** • Anti-Hypertensives • Digitalis • Diuretics • Beta blockers • Treatment of pulmonary hypertension • Cornay vasodilators. • Anti-thrombotics and antiplatelets. • Anti-dyslipidaemic		

• Anticoagulats • Antiarrythmic drugs • Hypogylemic drugs Inotropics		
C- Outline basics of the rare presentation and associated with other clinical situations of diseases and conditions mentioned in AA	Lectures	Written and oral examination
D-Explain the facts and principles of the relevant basic(pathology, biochemistry, epidemiology) supportive sciences related to cardiovascular diseases		
E-Explain the facts and principles of the relevant clinically supportive sciences related to cardiovascular diseases		
F-Describe the basic ethical and medicolegal principles revenant to the cardiovascular medicine	Lectures	Written and oral examination
G- Describe the basics and measurements of quality assurance to ensure good clinical care in the cardiovascular medicine.	Lectures	Written and oral examination
H-Explain the ethical and scientific principles of medical research.		
I- Explain the impact of common health problems in the field of Cardiovascular medicine on the society.		

B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Design and present case in common problem related to cardiovascular medicine.	-Clinical rounds -Senior staff experience	-Procedure and case presentation -Log book & Portfolio
B. Apply the basic and clinically supportive sciences which are appropriate to Cardiovascular medicine related problems.		
C. Demonstrate an investigatory and analytic thinking "problem – solving "approaches to clinical situation related to Cardiovascular medicine		
D. Plan research projects.		
E. Write scientific papers.		
F. Lead risk management activities as a part of clinical governs. • Bleeding. • Embolism. • Mortality in the ward		
G. Plan quality improvement activities in the field of medical education and clinical practice in to Cardiovascular medicine		
H. Create and innovate plans, systems, and other issues for improvement of performance in to Cardiovascular medicine.		
I. Present and defend his / her data in front of a panel of experts		
J. Formulate management plans and alternative decisions in different situations in the field of Cardiovascular medicine.		

C-Practical skills (Patient Care)

ILOs	Methods of teachinhg/ learning	Methods of Evaluation
A. Take history, examine and clinically diagnose different conditions related to Cardiovascular medicine	- seminars, -Clinical rounds Clinical rotations (service teaching)	-OSCE at the end of each year -log book & portfolio MCQ examination at the second half -Clinical exam
B. <u>Order the following non invasive and invasive diagnostic procedures</u> ➢ Routine lab to conditions mentioned in AA. ➢ Electrocardiogram (ECG) ➢ chest x ray interpretation ➢ Ambulatory ECG ➢ Stress testing ➢ Echocardiography ➢ Nuclear cardiology study interpretation ➢ Interpretation of cardiac CT and MRI ➢ Cardioversion ➢ Pericardiocentesis ➢ Assisst diagnostic cardiac catheterization including coronary angiography ➢ Assist valvular and coronary interventrion	-Clinical round with senior staff -Observation -Post graduate teaching -Hand on workshops -Perform under supervision of senior staff	- Procedure presentation - Log book - Chick list

• Pacing (temporary pacing)		
C. <u>Interpret the following non invasive and invasive diagnostic procedures</u> ➢ Routine lab to conditions mentioned in AA. ➢ Electrocardiogram (ECG) ➢ chest x ray interpretation ➢ Ambulatory ECG ➢ Stress testing ➢ Echocardiography ➢ Nuclear cardiology study interpretation ➢ Interpretation of cardiac CT and MRI ➢ Cardioversion ➢ Pericardiocentesis ➢ Assisst diagnostic cardiac catheterization including coronary angiography ➢ Assist valvular and coronary interventrion • Pacing (temporary pacing).	-Clinical round with senior staff -Observation -Post graduate teaching -Hand on workshops -Perform under supervision of senior staff	- Procedure presentation - Log book - Chick list
D. <u>Perform the following non invasive and invasive diagnostic procedures</u> ➢ Electrocardiogram (ECG) ➢ chest x ray interpretation ➢ Ambulatory ECG ➢ Stress testing ➢ Echocardiography ➢ Nuclear cardiology study interpretation ➢ Interpretation of cardiac CT and MRI ➢ Cardioversion	-Clinical round with senior staff -Observation -Post graduate teaching -Hand on workshops -Perform under supervision of senior staff	- Procedure presentation - Log book - Chick list

➢ Pericardiocentesis ➢ Assisst diagnostic cardiac catheterization including coronary angiography ➢ Assist valvular and coronary interventrion • Pacing (temporary pacing)		
E. Prescribe the following non invasive and invasive therapeutic procedures. ➢ Cardioversion ➢ Pericardiocentesis ➢ Assisst diagnostic cardiac catheterization including coronary angiography ➢ Assist valvular and coronary interventrion • Pacing (temporary pacing	-Observation -Post graduate teaching -Hand on workshops	- Procedure presentation - Log book - Chick list
F. Perform the following non invasive and invasive therapeutic procedures ➢ Cardioversion ➢ Pericardiocentesis ➢ Assisst diagnostic cardiac catheterization including coronary angiography ➢ Assist valvular and coronary interventrion • Pacing (temporary pacing	-Observation -Post graduate teaching -Hand on workshops	- Procedure presentation - Log book - Chick list
G. Develop and carry out patient management plans for the problems Mentioned In AA,C.	-Clinical round with senior staff	
H. Counsel and educate patients and their family about Mentioned In AA,C.	-Clinical round with senior staff	

I. Use information technology to support patient care decisions and patient education for the cardiovascular medicine related conditions.	-Clinical round with senior staff	
J. <u>Provide health care services aimed at preventing the following conditions</u> • Delayed diagnosis. • Hospital acquired infections . • Deterioration of homodynamic state and recurrence of thrombo-embolic diseases • Exacerbation of stable cases of CARDIOVASCULAR DISEASES.	-Clinical round with senior staff	
K. Work with health care professionals, including those from other disciplines, to provide patient-focused care for the mentioned in A.A and A.C	-Clinical round with senior staff	
L. Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible medical records)		

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology in the common problems (plan and conduct audit cycles) in the following problems: • Thrombolytic therapy. • Cardioversion. • Hypertension. • Coronary catheterization.	-Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops	- Global rating -Procedure & case presentation -Log book & Portfolios - Chick list
B. Locate, appraises, and assimilates evidence from scientific studies related to patients' health problems. • Thrombolytic therapy. • Cardioversion. • Hypertension. • Coronary catheterization. • Hypertension. • Rheumatic heart diseases. • Arrhythmias. • Other conditions mentioned in AA.	-Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops	- Global rating -Procedure & case presentation -Log book & Portfolios - Chick list
C. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness		
D. Use information technology to manage information, access on-line medical information; and support their own education		
E. Lead the learning of students and other health care professionals related to cardiovascular medicine.		

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Create and sustain a therapeutic and ethically sound relationship with patients	-Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops	- Global rating -Procedure & case presentation -Log book & Portfolios - Chick list
G. Perform the following oral communications: • Advise patient for synchrony • Deal with patient relatives • Ordering residents • Ordering nurses		
H. Fill the following reports: • Patients' medical reports. • Stress testing. • Echocardiography. • Coronary catheterization. • Pacing.		
I. Work effectively with others as a member or leader of a health care team • A member of a health care team in Coronary emergency unit and catheterization. • A leader of a health care team in night shift		

Professionalism

ILOs	Methods of teaching/ Learning	Methods of Evaluation
J. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest.	- Observation - Senior staff experience - Case taking	-Objective structured clinical examination - Patient survey
K. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.		- 360o global rating
L. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Work effectively in different health care delivery settings and systems.	- Observation -Senior staff experience	- 360o global rating
N. Practice cost-effective health care and resource allocation that does not compromise quality of care		- Check list evaluation of live or recorded performance
O. Advocate for quality patient care and assist patients in dealing with system complexities		- 360o global rating - Patient survey
P. Partner with health care managers and health care providers to assess, coordinate, and improve health care and predict how these activities can affect system performance		

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: Second Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skills C	General Skills D
Module 1-2; cardiovascular medicine(advanced Cardiovascular diseases and emergencies)				
Cardiovascular diseases:				
- Acute and chronic dyspnea	A,C-I	A-J	A-E,G-I,K-L	A-P
- Chest pain indications, Define different causes and differential diagnosis	A,C-I	A-J	A-E,G-I,K-L	A-P
- Atherosclerosis and Ischemic heart diseases (IHD).	A.C-I	A-J	A-E,G-I,K-L	A-P
- Acute coronary syndromes (unstable angina, non ST elevation myocardial infarction [MI] and ST elevation	A,C-I	A-J	A-E,G-I,K-L	A-P
- Chronic ischemic heart disease	A,C-I	A-J	A-E,G-I,K-L	A-P

- Rheumatic fever and rheumatic heart diseases (RHD)	A,C-I	A-J	A-E,G-I,K-L	A-P
- **Infective endocarditis**	A,C-I	A-J	A-E,G-I,K-L	A-P
- Hypertension.	A,C-I	A-J	A-E,G-I,K-L	A-P
- Heart failure	A,C-I	A-J	A-E,G-I,K-L	A-P
- **Arrhythmia**.	A,C-I	A-J	A-E,G-I,K-L	A-P
- Syncope	A,C-I	A-J	A-E,G-I,K-L	A-P
- Sudden cardiac death & resuscitation	A,C-I	A-J	A-E,G-I,K-L	A-P
- Adult congenital heart disease (CHD)	A,C-I	A-J	A-E,G-I,K-L	A-P
- **Myocardial diseases**	A,C-I	A-J	A-E,G-I,K-L	A-P
- Pericardial diseases	A,C-I	A-J	A-E,G-I,K-L	A-P
- Heart and other systems	A,C-I	A-J	A-E,G-I,K-L	A-P
- Pregnancy and cardiac disease	A,C-I	A-J	A-E,G-I,K-L	A-P
- Peripheral arterial diseases	A,C-I	A-J	A-E,G-I,K-L	A-P
- Diseases of aorta and trauma to the aorta and heart	A,C-I	A-J	A-E,G-I,K-L	A-P
- Pulmonary arterial hypertension	A,C-I	A-J	A-E,G-I,K-L	A-P
- Thrombo-embolic venous	A,C-I	A-J	A-E,G-I,K-L	A-P

disease				
- Cardiac tumors	A,C-I	A-J	A-E,G-I,K-L	A-P
- Rehabilitation and exercise	A,C-I	A-J	A-E,G-I,K-L	A-P
- Assessment of patients with cardiovascular disease to non cardiac surgery.	A,C-I	A-J	A-E,G-I,K-L	A-P
- Management of critically ill patients with hemodynamic disturbances	A,C-I	A-J	A-E,G-I,K-L	A-P
Module3,4; Non invasive and invasive investigation of cardiovascular diseases				
Routine appropriate Lab investigations.	B,D	A-H	B-E	B-E
Electrocardiogram (ECG)	B,D	A-H	B-E	B-E
chest x ray interpretation	B,D	A-H	B-E	B-E
Ambulatory ECG	B,D,H	A-H	B-E	B-E
Stress testing	B,D,H	A-H	B-E	B-E
Echocardiography	B,D,H	A-H	B-E	B-E
Nuclear cardiology study interpretation	B,D,H	A-H	B-E	B-E
Interpretation of cardiac CT and MRI	B,D,H	A-H	B-E	B-E
Cardioversion	B,D-H	A-H	B-F	B-P
Pericardiocentesis	B,D-H	A-H	B-F	B-P
diagnostic cardiac catheterization	B,D-H	A-H	B-F	B-P
Valvular and coronary intervention	B,D-H	A-H	B-F	B-P
Pacing (temporary pacing)	B,D-H	A-H	B-F	B-P

*Pharamachology				
General pharmacology	B	A-H	-	B,D,E
Anti-Hypertensives	B	A-H	G,I.L	B,D,E
Digitalis	B	A-H	G,I,L	B,D,E
Diuretics	B	A-H	G,I.L	B,D,E
Beta blockers	B	A-H	G,I,L	B,D,E
Treatment of pulmonary hypertension	B	A-H		B,D,E
Coronary vasodilators.	B	A-H	G,I.L	B,D,E
Anti-thrombotics and antiplatelets.	B	A-H	G,I,L	B,D,E
Anti-dyslipidaemic	B	A-H		B,D,E
Anticoagulats	B	A-H	G,I.L	B,D,E
Antiarrythmic drugs	B	A-H	G,I,L	B,D,E
Hypogylemic drugs	B	A-H		B,D,E
Inotropics	B	A-H	G,I.L	B,D,E

5 Course Methods of teaching/learning:

- Didactic ; Lectures
- Clinical rounds
- Seminars Clinical rotations
- (service teaching) Observation
- Post graduate teaching
- Hand on workshops
- Perform under supervision of senior staff
- Simulations
- Case presentation
- Case Taking

6 Course Methods of teaching/learning: for students of limited abilities

- Didactic ; Lectures
- Clinical rounds
- Seminars Clinical rotations
- (service teaching) Observation
- Post graduate teaching
- Hand on workshops
- Perform under supervision of senior staff
- Simulations
- Case presentation
- Case Taking

6. Course assessment methods:

i. Assessment tools:

- Clinical examination
- Written and oral examination
- Chick list
- log book & portfolio
- Procedure/case presentation
- One MCQ examination
- Objective structured clinical examination
- Check list evaluation of live or recorded performance
- Patient survey
- 360o global rating

ii. Time schedule: at the 2nd part

Marks 1200(480 for written+ 120 for oral+600 for clinical exam).

7. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books (text books)

- Hurst, The Heart 14th Edition by Valentin Fuster (Author), Robert Harrington (Author), Jagat Narula (Author),2021.
- Braunwals Cardiovascular Medicine,A Textbook of Cardiovascular Medicine,9th Edition by Robert O. Bonow (Author), Douglas L. Mann MD (Author), Douglas P. Zipes MD (Author),12th edition.

Iii.Recommended books

- Textbook of Cardiovascular Medicine (Topol,Textbook of Cardiovascular Medicine) 3rd Edition ,2020 by Eric J. Topol (Editor), Robert M. Califf (Editor), M.D. Prystowsky, Eric N. (Editor),

iv. Periodicals, Web sites, … etc

- Journal of American College of Cardiology
- American Journal of Cardiology
- Circulation
- European heart Journal
- Journal of Egyptian Society of Cardiology

v. others: none.

9. Signatures

Course Coordinator	
Course Coordinator:	**Head of the Department:**
Date	**Date:**

Annex 2 Program Academic Reference Standards (ARS)

1- Graduate attributes for medical doctorate in Cardiovascular medicine

***The Graduate (after residence training and medical doctorate years of study) must*:**

1- Demonstrate competency and mastery of basics, methods and tools of scientific research and clinical audit in Cardiovascular medicine

2- Have continuous ability to add knowledge to Cardiovascular medicine through research and publication.

3- Appraise and utilise relevant scientific knowledge to continuously update and improve clinical practice.

4- Acquire excellent level of medical knowledge in the basic biomedical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care and scientific research.

5- Function as a leader of a team to provide patient care that is appropriate, effective and compassionate for dealing with health problems and health promotion.

6- Identify and create solutions for health problems in Cardiovascular medicine .

7- Acquire an in depth understanding of common areas of Cardiovascular medicine , from basic clinical care to evidence based clinical application, and possession of required skills to manage independently all problems in these areas.

8- Demonstrate leadership competencies including interpersonal and communication skills that ensure effective information exchange with individual patients

and their families and teamwork with other health professions, the scientific community and the public.

9- Function as teacher in relation to colleagues, medical students and other health professions.

10- Master decision making capabilities in different situations related to Cardiovascular medicine .

11- Show leadership responsiveness to the larger context of the health care system, including e.g. the organisation of health care, partnership with health care providers and managers, practice of cost-effective health care, health economics, and resource allocations.

12- Demonstrate in depth awareness of public health and health policy issues including independent ability to improve health care, and identify and carryout system-based improvement of care.

13- Show model attitudes and professionalism.

14- Demonstrate commitment for lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages and in Cardiovascular medicine or one of its subspecialties.

15- Use recent technologies to improve his practice in Cardiovascular medicine .

16- Share in updating and improving clinical practice in Cardiovascular medicine .

2- Competency based Standards for medical doctorate in Cardiovascular medicine

22.1- Knowledge and understanding

By the end of the program, the graduate should demonstrate satisfactory knowledge and understanding of

2-1-A- Established, updated and evidence- based theories, basics and developments of Cardiovascular medicine and relevant sciences.

2-1-B- Basics, methods and ethics of medical research.

2-1-C- Ethical and medicolegal principles of medical practice related to Cardiovascular medicine **.**

2-1-D- Principles and measurements of quality in Cardiovascular medicine **.**

2-1-E- Principles and efforts for maintainace and improvements of public health.

2- Intellectual skills

By the end of the program, the graduate should be able to demonstrate the following

2-2-A- Application of basic and other relevant science to solve Cardiovascular medicine related Problems.

2-2-B- Problem solving based on available data.

2-2-C- Involvement in research studies related to Cardiovascular medicine .

2-2-D- Writing scientific papers.

2-2-E- Risk evaluation in the related clinical practice.

2-2-F- Planning for performance improvement in Cardiovascular medicine .

2-2-G- Creation and innovation in Cardiovascular medicine **.**

2-2-H- Evidence – based discussion.

2-2-I- Decision making in different situations related to Cardiovascular medicine .

2.3- Clinical skills

By the end of the program, the graduate should be able to

- ***Competency-based outcomes for Patient Care:-***

2-3-A- MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health extensive level means in depth understanding and from basic science to evidence – based clinical application and possession of skills to manage independently all problems in Cardiovascular medicine .

2-3-B- Master patient care skills relevant to Cardiovascular medicine for patients with all diagnoses and procedures.

2-3-C- Write and evaluate reports for situations related to the Cardiovascular medicine **.**

2.4- General skills

By the end of the program, the graduate should be able to

- ***Competency-based outcomes for Practice-based Learning and Improvement***

2-4-A-Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management

2-4-B- Use competently all information sources and technology to improve his practice.

2-4-C- Master skills of teaching and evaluating others.

- ***Competency-based objectives for Interpersonal and Communication Skills***

2-4-D-Master interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

- ***Competency-based objectives for Professionalism***

2-4-E-Master Professionalism behavior, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

- ***Competency-based objectives for Systems-based Practice:***

2-4-F-Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively use system resources to provide care that is of optimal value.

2-4-G- Participate in improvement of the education system.

2-4-H- Demonstrate skills of leading scientific meetings including time management

2-4-O- Demonstrate skills of self and continuous learning.

Annex 3, Methods of teaching/learning

Annex 3, Methods of teaching/learning

	Patient care	**Medical knowledge**	**Practice-based learning/ Improvement**	**Interpersonal and communication skills**	**Professionalism**	**Systems-based practice**
Didactic (lectures, seminars, tutorial)	X	X		X	X	X
journal club,	X	X	X			
Educational prescription	X	X	X	X	X	X
Present a case (true or simulated) in a grand round	X	X	X	X	X	
Observation and supervision	X		X	X	X	X
conferences		X	X	X		X
Written assignments	X	X	X	X	X	X
Oral assignments	X	X	X	X	X	X

Teaching methods for knowledge

- ❖ Didactic (lectures, seminars, tutorial)
- ❖ journal club
- ❖ Critically appraised topic
- ❖ Educational prescription (a structured technique for following up on clinical questions that arise during rounds and other venues).
- ❖ Present a case (true or simulated) in a grand round
- ❖ Others

Teaching methods for patient care

- ❖ Observation and supervision /Completed tasks procedure/case logs
- ❖ On-the-job" training without structured teaching is not sufficient for this skill (checklists).
- ❖ Simulation is increasingly used as an effective method for skill/ teamwork training.

Teaching methods for other skills

- ❖ Written communication (e.g., orders, progress note, transfer note, discharge summary, operative reports, and diagnostic reports).
- ❖ Oral communication (e.g., presentations, transfer of care, interactions with patients, families, colleagues, members of the health care team) and/or non verbal skills (e.g., listening, team skills)
- ❖ Professionalism, including medical ethics, may be included as a theme throughout the program curriculum that includes both didactic and experiential components (e.g., may be integrated into already existing small group discussions of vignettes or case studies and role plays, computer-based modules) and may be modeled by the faculty in clinical practice and discussed with the resident as issues arise during their clinical practice.

Annex 4, Assessment methods

Annex 4, ILOs evaluation methods for MD students.

Method	Practical skills	K	Intellectual	General skills			
	Patient care	K	I	Practice-based learning/ Improvement	Interpersonal and communication skills	Professionalism	Systems-based practice
Record review	X	X	X		X	X	X
Checklist	X				X		
Global rating	X	X	X	X	X	X	X
Simulations	X	X	X	X	X	X	
Portfolios	X	X	X	X	X		
Standardized oral examination	X	X	X	X	X		X
Written examination	X	X	X	X			X
Procedure/ case log	X	X					
OSCE	X	X	X	X	X	X	X

Annex 4, Glossary of MD students assessment methods

- Record Review – Abstraction of information from patient records, such as medications or tests ordered and comparison of findings against accepted patient care standards.
- Chart Stimulated Recall – Uses the MD doctor's patient records in an oral examination to assess clinical decision-making.
- Mini clinical evaluation: Evaluation of Live/Recorded Performance (single event) – A single resident interaction with a patient is evaluated using a checklist. The encounter may be videotaped for later evaluation.
- Standardized Patients (SP) – Simulated patients are trained to respond in a manner similar to real patients. The standardized patient can be trained to rate MD doctor's performance on checklists and provide feedback for history taking, physical examination, and communication skills. Physicians may also rate the MD doctor's performance.
- Objective Structured Clinical Examination (OSCE) – A series of stations with standardized tasks for the MD doctors to perform. Standardized patients and other assessment methods often are combined in an OSCE. An observer or the standardized patient may evaluate the MD doctors.
- Procedure or Case Logs – MD doctors prepare summaries of clinical experiences including clinical data. Logs are useful to document educational experiences and deficiencies.
- PSQs – Patients fill out Patient Survey questionnaires (PSQs) evaluating the quality of care provided by MD doctors.
- Case /problems – assess use of knowledge in diagnosing or treating patients or evaluate procedural skills.
- Models: are simulations using mannequins or various anatomic structures to assess procedural skills and interpret clinical findings. Both are useful to assess practice performance and provide constructive feedback.

- 360 Global Rating Evaluations – MD doctors, faculty, nurses, clerks, and other clinical staff evaluate MD doctors from different perspectives using similar rating forms.
- Portfolios – A portfolio is a set of project reports that are prepared by the MD doctors to document projects completed during the MD study years. For each type of project standards of performance are set. Example projects are summarizing the research literature for selecting a treatment option, implementing a quality improvement program, revising a medical student clerkship elective, and creating a computer program to track patient care and outcomes.
- Examination MCQ – A standardized examination using multiple-choice questions (MCQ). The in-training examination and written board examinations are examples.
- Examination Oral – Uses structured realistic cases and patient case protocols in an oral examination to assess clinical decision-making.
- Procedure or Case Logs – MD doctors prepare summaries of clinical experiences including clinical data. Logs are useful to document educational experiences and deficiencies.
- PSQs – Patients fill out Patient Survey questionnaires (PSQs) evaluating the quality of care provided by MD doctors.

Annex 5, Program evaluation tools

By whom	Method	sample
Quality Assurance Unit	Reports Field visits	#1
External Evaluator (s):According to department council External Examiner (s): According to department council	Reports Field visits	#2
Stakeholders	Reports Field visits questionnaires	#5
Senior students	questionnaires	#2
Alumni	questionnaires	#

Annex 6, Program Correlations:

مصفوفة توافق المعايير القومية القياسية العامة لبرامج الدكتوراه مع المعايير الأكاديمية المعتمدة من كلية الطب □ جامعة أسيوط لدرجة الدكتوراه في طب القلب والأوعية الدموية

I- General Academic Reference Standards (GARS) versus Program ARS

1- Graduate attributes

Faculty ARS	NAQAAE General ARS for Postgraduate Programs
1- Demonstrate competency and mastery of basics, methods and tools of scientific research and clinical audit in Cardiovascular medicine .	1-إتقان أساسيات و منهجيات البحث العلمي
2- Have continuous ability to add knowledge new developments to Cardiovascular medicine through research and publication.	2-العمل المستمر علي الإضافة للمعارف في مجال التخصص
3- Appraise and utilise scientific knowledge to continuously update and improve clinical practice and relevant basic sciences.	3-تطبيق المنهج التحليلي و الناقد للمعارف في مجال التخصص و المجالات ذات العلاقة
4- Acquire excellent level of medical knowledge in the basic biomedical, clinical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care and scientific	4-دمج المعارف المتخصصة مع المعارف ذات العلاقة مستنبطا و مطورا للعلاقات البينية بينها
5- Function as a leader of a team to provide patient care that is appropriate, compassionate for dealing with effective and health Problems and health promotion. 7- Acquire an in depth understanding of common areas of speciality, from basic clinical care to evidence based clinical application, and possession of skills to manage independently all problems in these areas.	5-إظهار وعيا عميقا بالمشاكل الجارية و النظريات الحديثة في مجال التخصص
6- Identify and create solutions for health problems in Cardiovascular medicine .	6-تحديد المشكلات المهنية و إيجاد حلولا مبتكرة لحلها
5- Function as a leader of a team to provide patient care that is appropriate,	7-إتقان نطاقا واسعا من المهارات المهنية في

effective and compassionate for dealing with health problems and health promotion. 7- Acquire an in depth understanding of common areas of Cardiovascular medicine , from basic clinical care to evidence based clinical application, and possession of skills to manage independently all problems in these areas.	مجال التخصص
8 - Share in updating and improving clinical practice in Cardiovascular medicine . - Function as teacher in relation to colleagues, medical students and other health professions.	8- التوجه نحو تطوير طرق و أدوات و أساليب جديدة للمزاولة المهنية
9- Use recent technologies to improve his practice in Cardiovascular medicine .	9-استخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية
8- Demonstrate leadership competencies including interpersonal and communication skills that ensure effective information exchange with individual patients and their families and teamwork with other health professions, the scientific community and the public. 5- Function as a leader of a team to provide patient care that is appropriate, effective and compassionate for dealing with health problems and health promotion.	10-التواصل بفاعلية و قيادة فريق عمل في سياقات مهنية مختلفة
10- Master decision making capabilities in different situations related to Cardiovascular medicine .	11-اتخاذ القرار في ظل المعلومات المتاحة
11- Show leadership responsiveness to the larger context of the health care system, including e.g. the organisation of health care, partnership with health care providers and managers, practice of cost-effective health care, health economics, and resource allocations.	12-توظيف الموارد المتاحة بكفاءة و تنميتها والعمل على إيجاد موارد جديدة

12- Demonstrate in depth awareness of public health and health policy issues including independent ability to improve health care, and identify and carryout system-based improvement of care.	13-الوعي بدوره في تنمية المجتمع والحفاظ على البيئة
13- Show model attitudes and professionalism.	14-التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة
14- Demonstrate commitment for lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages and in Cardiovascular medicine or one of its subspecialties. 15- Use recent technologies to improve his practice in Cardiovascular medicine .	15-الالتزام بالتنمية الذاتية المستمرة و نقل علمه و خبراته للآخرين

2- Academic standards

Faculty ARS	NAQAAE General ARS for Postgraduate Programs
2.1. A- Established, updated and evidence- based theories, basics and developments of Cardiovascular medicine and relevant sciences.	2-1-أ- النظريات و الأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة
2.1. B- Basic, methods and ethics of medical research.	2-1-ب -أساسيات و منهجيات و أخلاقيات البحث العلمي و أدواته المختلفة
2.1. C- Ethical and medicologal principles of medical practice related to Cardiovascular medicine .	2-1-ج- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص
2.1. D- Principles and measurements of quality in Cardiovascular medicine .	2-1-د مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
2.1. E- Principles and efforts for maintains and improvements of public health.	2-1-هـ - المعارف المتعلقة بآثـــار ممارســـته المهنية على البيئة وطرق تنمية البيئة وصيانتها
2.2. A- Application of basic and other relevant science to solve Cardiovascular medicine related problems.	2-2-أ -تحليل و تقييم المعلومات فـــي مجـــال التخصـــص و القيـــاس عليهـــا و الاستنباط منها
2.2.B- Problem solving based on available data.	2-2-ب -حل المشاكل المتخصصة استنادا علي المعطيات المتاحة
2.2.C- Involvement in research studies related to Cardiovascular medicine	2-2-ج -إجراء دراسات بحثية تضـــيف إلـــى المعارف
2.2. D- Writing scientific papers.	2-2-د- صياغة أوراق علمية
2.2. E- Risk evaluation in the related clinical practice	2-2—هـــ تقييم المخاطر في الممارسات المهنية
2.2.F- Planning for performance improvement in Cardiovascular medicine	2-2-و -التخطيط لتطوير الأداء في مجال التخصص
2-2-G- Creation and innovation in the Cardiovascular medicine .	2-2-ز- الابتكار /الإبداع

2.2. H- Evidence – based discussion.	2-2-ح- الحوار والنقاش المبني علي البراهين والأدلة
2.2.I- Discussion making in different situations related to Cardiovascular medicine .	2-2-ط -اتخاذ القرارات المهنية في سـياقات مهنية مختلفة
2.3. A- MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health extensive level means in depth understanding and from basic science to evidence – based clinical application and possession of skills to manage independently all problems in Cardiovascular medicine . 2.3. B- Master patient care skills relevant to Cardiovascular medicine or patients with all diagnoses and procedures.	2-3-أ -إتقان المهارات المهنيـة الأساسـية و الحديثة في مجال التخصص
2.3. C- Write and evaluate reports for situations related to the field of Cardiovascular medicine .	2-3-ب- كتابة و تقييم التقارير المهنية.
2.4.A-Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management	2-3-ج -تقييم و تطوير الطرق و الأدوات القائمة في مجال التخصص
2.4.B- Use competently all information sources and technology to improve his practice.	2-3-د - استخدام الوسائل التكنولوجية بما يخدم الممارسة المهنية
2.4.A-Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management 2.4.G- Participate in improvement of the education system .	2-3-هـ -التخطيط لتطوير الممارسة المهنية وتنمية أداء الآخرين

II-Program ARS versus program ILOs

Comparison between ARS- ILOS for medical doctorate

(ARS)	(ILOs)
2-1- Knowledge and understanding	***2-1- Knowledge and understanding***
2-1-A- Established, updated and evidence-based Theories, Basics and developments of Cardiovascular medicine and relevant sciences.	**2-1-A**- Demonstrate in-depth knowledge and understanding of theories, basics and updated biomedical, clinical epidemiological and socio behavioral science relevant to his speciality as well as the evidence – based application of this knowledge to patient care.
2-1-B Basic, methods and ethics of medical research.	**2-1-B-** Explain basics, methodology, tools and ethics of scientific medical, clinical research.
2-1-C- Ethical and medicologal principles of medical practice related to Cardiovascular medicine field.	**2-1-C-** Mention ethical, medico logical principles and bylaws relevant to his practice in the field of Cardiovascular medicine .
2-1-D- Principles and measurements of quality in the Cardiovascular medicine .	**2-1-D-** Mention principles and measurements of quality assurance and quality improvement in medical education and in clinical practice of Cardiovascular medicine .
2-1-E-Principles and efforts for maintains and improvements of public health.	**2-1-E-** Mention health care system, public health and health policy, issues relevant to this speciality and principles and methods of system – based improvement of patient care in common health problems of the field of Cardiovascular medicine .
***2-2- Intellectual skills*:**	***2-2- Intellectual skills:***
2-2-A-Application of basic and other relevant science to solve	**2-2-A-** Apply the basic and clinically supportive sciences which are appropriate to

Cardiovascular medicine . related problems.	Cardiovascular medicine related conditions / problem / topics.
2-2-B-Problem solving based on available data.	**2-2-B-** Demonstrate an investigatory and analytic thinking "problem – solving "approaches to clinical situation related to Cardiovascular medicine .
2-2-C- Involvement in research studies related to the Cardiovascular medicine .	**2-2-C-** Plain research projects.
2-2-D Writing scientific papers.	**2-2-D-** Write scientific paper.
2-2-E-Risk evaluation in the related clinical practice.	**2-2-E-** Participate in clinical risk management as a part of clinical governance.
2-2-F-Planning for performance improvement in the Cardiovascular medicine field.	**2-2-F-** Plan for quality improvement in the field of medical education and clinical practice in his speciality.
2-2-G-Creation and innovation in the speciality field.	**2-2-G-** Create / innovate plans, systems, and other issues for improvement of performance in his practice.
2-2-H-Evidence – based discussion.	**2-2-H-** Present and defend his / her data in front of a panel of experts.
2-2-I-Decision making in different situations related to Cardiovascular medicine fields.	**2-2-I-** Formulate management plans and alternative decisions in different situations in the field of the Cardiovascular medicine

continuous (ARS)	continuous (ILOs)
2-3- Clinical skills:	***2/3/1/Practical skills (Patient care :)***
2-3-A- MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health extensive level means in depth understanding and from basic science to evidence – based clinical application and possession of skills to manage independently all problems in his field of practice.	**2-3-1-A-** Provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. ***p.s.*** Extensive level means in-depth understanding from basic science to evidence – based clinical application and possession of skills to manage independently all problems in field of practice.
2-3-B- Master patient care skills relevant to Cardiovascular medicine for patients with all diagnoses and procedures.	**2-3-1-B-** Provide extensive level of patient care for patients with all common diagnoses and for uncomplicated procedures related to Cardiovascular medicine
	2-3-1-C- Provide extensive level of patient care for non-routine, complicated patients and under increasingly difficult circumstances, while demonstrating compassionate, appropriate and effective care.
	2-3-1-D- Perform diagnostic and therapeutic procedures considered essential in the field of Cardiovascular medicine
	2-3-1-E- Handles unexpected complications, while demonstrating compassion and sensitivity to patient needs and concerns.
	2-3-1-F- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families in the

	Cardiovascular medicine related situations. **2-3-1-G-** Gather essential and accurate information about patients of the Cardiovascular medicine related conditions. **2-3-1-H** Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence and clinical judgment for the Cardiovascular medicine related conditions. **2-3-1-I-** Develop and carry out patient management plans for Cardiovascular medicine related conditions. **2-3-1-J-** Counsel and educate patients and their families about Cardiovascular medicine related conditions. **2-3-1-K-** Use information technology to support patient care decisions and patient education in all Cardiovascular medicine related clinical situations. **2-3-1-L-** Perform competently all medical and invasive procedures considered essential for the Cardiovascular medicine related conditions / area of practices. **2-3-1-M-** Provide health care services aimed at preventing the Cardiovascular medicine related health problems. **2-3-1-N-** Lead health care professionals, including those from other disciplines, to provide patient-focused care in

	Cardiovascular medicine related conditions**.**
2-3-C- Write and evaluate reports for situations related to the field Cardiovascular medicine .	**2-3-1-O-** Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive timely and legible medical records).
2-4- General skills **2-4-A-** Master practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management	***2/3/2 General skills*** **2-3-2-A-** Demonstrate the competency of continuous evaluation of different types of care provision to patients in the different area of Cardiovascular medicine **2-3-2-B-** Appraise scientific evidence. **2-3-2-C-** Continuously improve patient care based on constant self-evaluation and life-long learning. **2-3-2-D**. Participate in clinical audit and research projects. **2-3-2-E-** Practice skills of evidence-based Medicine (EBM). **2-3-2-G-** Design logbooks. **2-3-2-H-** Design clinical guidelines and standard protocols of management. **2-3-2-I-** Appraise evidence from scientific studies related to the patients' health problems.

2-4-B- Use competently all information source and technology to improve his practice.	**2-3-2-J-** Apply knowledge of study designs and statistical methods to the appraisal of clinical studies. **2-3-2-K**- Use information technology to manage information, access on- line medical information; for the important topics.
2-4-C- Master skills of teaching and evalu others.	**2-3-2-F-** Educate and evaluate students, residents and other health professionals.
2-4-D- Master interpersonal and communicat Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.	**2-3-2-L**- Master interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals, including:- • Present a case. • Write a consultation note. • Inform patients of a diagnosis and therapeutic plan Completing and maintaining comprehensive. • Timely and legible medical records. • Teamwork skills. **2-3-2-M-** Create and sustain a therapeutic and ethically sound relationship with patients. **2-3-2-N**- Elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills. **2-3-2-O-** Work effectively with others as a member or leader of a health care team or other professional group.
2-4-E- Master Professionalism behavior, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and	**2-3-2-P-** Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society.

sensitivity to a diverse patient population.	**2-3-2-Q-** Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices. **2-3-2-R-** Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities.
2-4-F- Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively use system resources to provide care that is of optimal value. **2-4-G**- Participate in improvement of the education system.	**2-3-2-S-** Work effectively in health care delivery settings and systems related to Cardiovascular medicine including good administrative and time management. **2-3-2-T-** Practice cost-effective health care and resource allocation that does not compromise quality of care. **2-3-2-U-** Advocate for quality patient care and assist patients in dealing with system complexities. **2-3-2-V-** Design, monitor and evaluate specification of under and post graduate courses and programs.
2-4-H- Demonstrate skills of leading scientific meetings including time management	**2-3-2-W-** Act as a chair man for scientific meetings including time management **2-3-2-S-** Work effectively in health care delivery settings and systems related to Cardiovascular medicine including good administrative and time management.

III-Program matrix
Knowledge and understanding

Course	Program covered ILOs				
	2/1/A	2/1/B	2/1/C	2/1/D	2/1/E
Course 1 : Medical statistics		✓			
course 2 : Research Methodology		✓			
course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research			✓		
Course 4: Anatomy & Physiology			✓		
Course 5: Cardiovascular 1			✓		
Course 6 : Cardiovascular 2	✓	✓	✓	✓	✓

Intellectual

Course	Program covered ILOs								
	2/2/A	2/2/B	2/2/C	2/2/D	2/2/E	2/2/F	2/2/G	2/2/H	2/2/I
Course 1 : Medical statistics			✓	✓				✓	
course 2 : Research Methodology			✓	✓				✓	
course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research								✓	
Course 4: Anatomy & Physiology	✓	✓							
Course 5: Cardiovascular 1	✓	✓							
Course 6 : Cardiovascular 2	✓	✓	✓	✓	✓	✓	✓	✓	✓

Practical Skills (Patient Care)

Course	Program covered ILOs							
	2/3/1/A	2/3/1/B	2/3/1/C	2/3/1/D	2/3/1/E	2/3/1/F	2/3/1/G	2/3/1/H
Course 1 : Medical statistics								
course 2 : Research Methodology								
course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research				✓				✓
Course 4: Anatomy & Physiology								
Course 5: Cardiovascular 1								
Course 6 : Cardiovascular 2	✓	✓	✓	✓	✓	✓	✓	✓

Practical Skills (Patient care)

Course	Program covered ILOs						
	2/3/1/I	2/3/1/J	2/3/1/K	2/3/1/L	2/3/1/M	2/3/1/N	2/3/1/O
Course 1 : Medical statistics							
course 2 : Research Methodology							
course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research	✓	✓					✓
Course 4: Anatomy & Physiology							
Course 5: Cardiovascular 1							
Course 6 : Cardiovascular 2	✓	✓	✓	✓	✓	✓	✓

General Skills

Course	Program covered ILOs							
	2/3/2/ A	2/3/2 /B	2/3/2/ C	2/3/2/ D	2/3/2 /E	2/3/2 /F	2/3/2/ G	2/3/2 /H
Course 1 : Medical statistics		✓						
course 2 : Research Methodology		✓		✓	✓			
course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research								
Course 4: Anatomy & Physiology								
Course 5: Cardiovascular 1								
Course 6 : Cardiovascular 2	✓	✓	✓	✓	✓	✓	✓	✓

General skills

Course	Program covered ILOs							
	2/3/2/I	2/3/2/J	2/3/2/K	2/3/2/L	2/3/2/M	2/3/2/N	2/3/2/O	2/3/2/P
Course 1 : Medical statistics	✓	✓	✓					
course 2 : Research Methodology	✓	✓						
course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research				✓				
Course 4: Anatomy & Physiology				✓				
Course 5: Cardiovascular 1				✓				
Course 6 : Cardiovascular 2	✓	✓	✓	✓	✓	✓	✓	✓

General Skills

Course	Program covered ILOs						
	2/3/2/ Q	2/3/2/ R	2/3/2/ S	2/3/2/ T	2/3/2/ U	2/3/2/ V	2/3 /2/ W
Course 1 : Medical statistics							
course 2 : Research Methodology							
course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research							
Course 4: Anatomy & Physiology	✓		✓				
Course 5: Cardiovascular 1	✓		✓				
Course 6 : Cardiovascular 2	✓	✓	✓	✓	✓	✓	✓

Annex 7, Additional information:

Department information

Opportunities within the department:

- **Coronary care Unit.**
- **Cardiac catheterization unit**
- **Non invasive imaging unit**
- **Cardiac pacing and pacemakers unit**

Department quality control insurance for completing the program:

- **Program coordinator:**

Prof :Mohamed Abdel Ghany karim Mahmoud, professor of cardiology ,

- **Program Assistant coordinator:**

Marwan sayed , , MD, Lecturer of Cardiology

- **Head Of the Department:**

Amar A Yossef : professor of cardiology ,

- Evaluation by the Department head and stuff members.
- Regular assessments.
- Log book monitoring.
- Recent equipments and Specialized Units.

Staff members:

1. Prof. HOSAM HASSAN ALI
2. Prof. Yehia T Kishk
3. prof. Salwa R Dimitry
4. Prof. Dr Amr A Youssef
5. Prof. Doaa A Foaad
6. Prof. Salah S Atta
7. Prof. HATEM ABDEL RAHMAN
8. Prof. Hamdy Shams eldeen
9. Prof. Mohamed ABDEL GHANY
10. Prof. AYMAN KAHIRY
11. DR: AHMED ABDEL GELIL
12. DR : MOHAMED ABOEL KASEM
13. DR; MAHMOUD ABDEL SABOUR
14. DR KHALED EL MAGHRABY
15. DR: TAREK ABDEL HAMEED
16. DR MAGDY EL GOHARY
17. DR; SLAMA TAHA
18. Nady Abdel razik
19. Moahmed ashraf ahmed
20. Heba Mahmoud
21. Mohamed aly
22. Amr el badry
23. Aly Tohamey
24. Noha Gamel