Faculty of Medicine

MINIA UNIVERSITY

Program specifications

Of Cardiology

Master (Msc) degree

Program specifications for: master's degree (MSc) of cardiology

[1] Basic Information

1. **Program title:** Master's degree (MSc) of cardiology
2. **Final award:** Master's degree (MSc) in cardiology.
3. **Program type: single.**
4. **Responsible department/ unit:** Cardiology, Special medicine department
5. **Departments involved in the program:** Department of Special medicine, Cardiology Unit, Internal Medicine, Medical Physiology, Pathology, Medical Biochemistry, Pharmacology, Forensic Medicine and Clinical Toxicology.
6. **Program duration: 24 months (6 months for the first part and 18 months for the second part).**
7. **Number of program courses:** 7
8. **Coordinator: Ass.** Prof. Amr Salah Amin
9. **External evaluators:** Prof. Dr. Amr Yousef
10. **Program management team:** All staff members of cardiology unit

[2] Professional Information: Program Aims

Graduate of master's degree in cardiology, the candidate should be able to:

1.1 Understand and apply the basics of research tools and methods in the field of cardiology.

1.2 Critically analyse and evaluate different findings and methods used in the cardiovascular specialty.

1.3 Apply cardiovascular knowledge in clinical practice, diagnose and treat common in cardiovascular diseases (including critical illnesses).

1.4 Demonstrate awareness of common cardiovascular diseases in the community.

1.5 Become a professional and competent internist and shows the ability to diagnose and treat complex internal medicine diseases.

1.6 Master the usage of basic clinical skills and different diagnostic tools in different cardiovascular subspecialties.

1.7 Gail leadership skills and communicate efficiency with other colleagues in the speciality of cardiology and Other related specialities.

1.8 Practice with sound professional ethical attitude to interact with community problems.

1.9 Demonstrate the ability to self-improvement and continuous professional growth in cardiovascular specialty.

[3] Intended Learning Outcomes (ILOs):

(a) Knowledge and understanding:

By the end of the study of MSc degree of cardiology, the candidate should be able to:

a.1 Discuss the basics in the normal **anatomy** of the cardiovascular system.

a.2 Discuss the normal **physiology** and functions of cardiovascular system.

a.3 Identify the **biochemical** basis of health and disease in the human body.

a.4 Describe various **pharmacological** and non-pharmacological therapeutic options of different disease

a.5 Recognize the essential **pathological** changes of different cardiovascular diseases

a.6 Define main cardiological diseases, their etiologies, pathologies, diagnosis, and management.

a.7 Identify scientific development in the field of Internal Medicine.

a.8 Identify the mutual influence between professional practice and its impacts on the environment.

a.9 List the ethical and legal principles of professional practice in the field of cardiology
a.10 List the principles of quality in professional practice in the field of cardiology
a.11 Define the basics and ethics of scientific research.
a.12 Define the quality principles in the cardiovascular field.

(b) Intellectual skills

By the end of the MSc of cardiology, the candidate should be able to:

b.1 Solve different problems related to cardiovascular system.
b.2 Combine basic knowledge and clinical skills to diagnose and treat different cardiovascular diseases.
b.3 Interpret clinical history, examination, imaging, and laboratory studies for different cardiovascular diseases.
b.4 Apply research methods to carry out a thesis in one of the cardiovascular fields.
b.5 Construct good understanding to common risks and patient safety issues related to cardiac patients.
b.6 Plan for the development of performance in the field of cardiovascular Medicine.
b.7 Design diagnostic and therapeutic plans to cardiac patients and report them to colleagues and managerial authorities.

3. Skills:

(c) Professional and practical skills

By the end of the study of MSc of cardiology, the candidate should be able to:

c.1 Assess clinical history and symptoms of cardiovascular Medicine.
c.2 Examine and perform clinical evaluation of different body systems.
c.3 Analyse different laboratory and imaging studies (x-rays, CT, MRIs), etc.
c.4 Assess Electrocardiogram and echocardiography
c.5 Compare different clinical pictures, diagnostic procedures, and treatments of cardiovascular diseases.
c.6 Write and evaluate medical reports for cardiac patients.
c.7 Perform some interventional procedures such as temporary pacemakers, pericardiocentesis, thoracentesis, central line insertion, and endotracheal tube insertion.

(d) General and transferable skills

By the end of the study of MSc **of Cardiology**, the candidate should be able to:

d.1 Use online databases to collect materials needed for research and thesis.
d.2 Manage and organize materials from various sources from the internet, libraries, etc.
d.3 Express a research assignment orally and electronically.
d.4 Show respect to all patients irrespective of their socioeconomic levels, culture or religious beliefs and use language appropriate to the patient's culture.
d.5 Ethically perform the clinical and academic activities.

d.6 Communicate effectively with cardiac patients, colleagues, and other managerial authorities.
d.7 Develop a life-long attitude of continuous self-improvement and continuous medical education.
d.8 Become aware of community-related health problems related to cardiovascular medicine.
d.9 Manage time effectively.
d.10 Work as a team worker and leader while working with other colleagues.
d.11 Put and use indicator for evaluating the performance of others.

[4] Program Academic Reference Standards:

- Minia faculty of Medicine adopted the general national academic reference standards provided by the national authority for quality assurance and accreditation of education (NAQAAE) for all postgraduate programs. (Faculty council Degree No.6854, in its cession No.177 Dated :18\5\2009).
- Faculty of medicine, Minia university, has developed the academic standards (ARS) for master (MSc) program and approved in faculty council decree No.7528, in its cession No.191, dated: 15/3/2010) and theses standards (faculty ARS) have been updated and approved in faculty council No.52/2 dated 20/2/2023

Then Cardiology department has adopted these standards and developed the intended learning outcomes (ILOs)for master (MSc) program in cardiology and the date of program specification 1st approval by department council: 13/5/2013 and the last date of program specification approval by department council: 6/3/2023

[5] Program structure:

Program duration: 2 Years (24 Months).

Topic	Lecture hours/week	Practical/Clinical hours/week	Total No. of hours hours/week
First part (6 months)			
Medical Physiology and Medical biochemistry	**2**	**-**	**2**
Medical Pharmacology	**2**	**-**	**2**
Pathology	**2**	**2**	**4**
Medical Ethics	**2**	**-**	
Internal Medicine	**2**	**18**	**20**
Basics of cardiology	**1**		
Total	**11**	**20**	**28**
Second part (18 months)			
Cardiology course **a-Cardiovascular diseases** **b-Diagnostic methods**	2 1	2 2	4 3
Total	**3**	**4**	**7**

Program courses (curriculum)

Course Title	Total No. of hours/w	No. of hours /week			Program ILOs Covered
		Lect.	Practical	Tu	
FIRST PART (Level of course):					
1. Medical Physiology and Medical biochemistry	**2**	**2**	**-**		a.3, a.4 b.1, b.2, c.3, c.7, d.1, d.2, d.5.
2. Medical Pharmacology	**2**	**2**	**-**		a.4, b.1, b.2, c.3, c.7, d.1, d.2, d.5.
3. Pathology	**4**	**2**	**2**		a.5, b.1, b.2, c.3, c.7, d.1, d.2, d.5.
4. Internal Medicine	**20**	**2**	**18**		a.6, a.7, a8, a.10, a.11, a.12, b.1, b.2, b.3, b.5, b.6, b.7, c.1, c.2, c.3, c.4, c.5, d.2, d.7, d.8
5. Basics of cardiology	**1**	**1**			a.8, a.9, a.10, a.11, a.12,

6. Medical Ethics.	**2**	**2**	**-**	-	a.12, b5, d4, d5, d6
Training programs and workshops, field visits, seminars& other scientific activities	Continuous				a.8, a.9, a.10, a.11, a.12, b.1, b.2, b.3, b.5, b.6, b.7, c.1, c.2, c.3, c.4, c.5, d1, d.2, d3, d4, d5,d6,d.7, d.8
SECOND PART (Level of course):					
7. Cardiology course: **a.Cardiovascular diseases**	4	2	2		a.8, a.9, a.10, a.11, a.12, b.1, b.2, b.3, b.5, b.6, b.7, c.1, c.2, c.3, c.4, c.5, d.2, d.7, d.8
b.Cardiovascular diagnostic methods	3	1	2		a.8, a.9, a.10, a.11, a.12, b.1, b.2
Training programs and workshops, field visits, seminars& other scientific activities	Continuous				a.8, a.9, a.10, a.11, a.12 b.1, b.2, b.3, b.5, b.6, b.7, c.1, c.2, c.3, c.4, c.5, c6, c7, d1, d.2, d3,d4,d5,d6,d.7, d.8

[6] program admission requirements:

Conditions should be fulfilled for registration:

1- **Candidates graduated from Egyptian Universities should have at least "Good Rank" in their final year examination/ cumulative years, and grade "Good Rank" in internal medicine course too.**

2- **He should pass one year as a house officer in a university hospital or equivalent teaching hospital.**

3- **All candidates should have MBBCH with GOOD rank at least from Egyptian university or fellowship of internal Medicine from Egyptian ministry of health.**

4- **The candidates who are working in Ministry of health hospital must stay one year (full time) as visitor doctor for training in the university hospital after acceptance of registration.**

Specific Requirements:

1- **Candidate should know how to speak & write English well (TOEFL certificate).**

2- **Candidate should have computer skills and ICDL certificate.**

[7] Regulations for progression and program completion

First part

- Registration for the study in October and April every year.

- Registration of the scientific research after acceptance of cardiology unit, special medicine department and faculty councils and the vice dean of post graduate studies of the university.

-Examination of the first part starts after 6 months from registration of master's degree.

- the student has to pass the first part exam.

- Those who fail in one curriculum need to re-exam it only.

- Medical Ethics course is a pass or fail exam and not added to the Total grades of the MSc Degree.

B) Second Part (≥18 months)

• Program related specialized science of cardiovascular medicine courses and ILOs. At least 18 months after passing the 1st part should pass before the student can take permission for examination in the 2nd part.

• Fulfillment of the requirements in each course as described in the template and registered in the logbook is a prerequisite for candidates to be assessed and undertake part 1 and part 2 examinations; as following:

اجتماع علمى موسع Grand rounds

دورات تدريبية Training courses

حضور مؤتمرات علمية Conference attendance

حضور مناقشات رسائل Thesis discussion

حضور ورش عمل Workshops

ندوة الدوريات الحديثة Journal club

تقييم حالة مرضية Case presentation

لقاء علمى موسع Seminars

ندوة تحليل المخاطر المرضية أوالوفاة Morbidity and Mortality conference

برنامج التعليم الذاتى Self-education program

- Examination of the second part after passing first part examination and finishing clinical studies and training (not less than 18 months).

-The candidate should pass the written, clinical and oral exams ..

-If the candidate failed to achieve ≥60 % of total ,he should repeat the full exam with 4 trial maximum.

Scientific research (Thesis)

- Start from registration and should be completed and accepted a minimum of 6 months after protocol registration up to a month prior to enrolment to the 2nd part of final exam

- Accepting the thesis occurs after acceptance and or publishing one thesis based paper in local or international journal and this is adequate to pass this part

Methods of teaching and learning

Methods of Teaching & Learning	**Intended Learning Outcomes (ILOs)**
Lecture	A1; A12 and B1; B17
Clinical	C1; C7
Assignment	D1; D11

Student assessment methods and rules

Method of assessment	The ILOs measured
1-Research assignment **2-Written Exams:** **-Short essay** **-MCQs**	**-general transferable skills, intellectual skills** **-knowledge** **-knowledge, intellectual skills** **- intellectual skills**

-Commentary **-Problem solving**	**-general transferable skills, intellectual skills**
3-Practical Exams	**- Practical skills, intellectual skills**
4-OSPE	**- Practical skills, intellectual skills**
5-Clinical Exams.	**- Practical skills, intellectual skills**
6-OSCE	**- Practical skills, intellectual skills**
7-Oral Exams. **8-Structured Oral Exams**	**- knowledge**

Weighting of assessments:

Courses	**Degrees**			
First Part	Written	Oral	Practical / Clinical	Total
1-Medical Physiology **And Medical biochemistry**	12 12	18 18		30 30
2-Medical Pharmacology	24	36		60
3- **Pathology**	24	18	18	60
4-Internal Medicine	24	18	18	60
5-Basics of cardiology	60			60
6-Medical Ethics.	40%	60%		100%

7- Cardiology course: **a.Cardiovascular diseases** **b.Cardiovascular diagnostic methods**	280	210	210	700

[8] Evaluation of program intended learning outcomes:

Evaluator (By whom)	Method/tool	Sample
1. Senior students (Students of last year	Questionnaires	All the students
2. Graduates (Alumni)	Questionnaires	10 at least
3. Stakeholders	Meeting Questionnaires	10 at least
4. External & Internal evaluators and external examiners	Reports	1 at least
5. Quality Assurance Unit	Reports Questionnaires Site visits	
6. Exams results	Results analysis Report	All the students

Date of last department approval: 6-3-2023
Head of the Internal Medicine department Signature:

Prof. Dr. Khaled Elmaghraby

ANNEX [I]

Matrix Between National Academic Quality Assurance & Accreditation (NAQAAE) General Academic Reference Standards (GARS) and Faculty Academic Reference Standards (ARS) (Including graduate Attributes)

NAQAAE برامج الماجستير	Faculty Master (MSC) Program
١. مواصفات الخريج: خريج برنامج الماجستير في أي تخصص يجب أن يكون قادرا على:	**1. Graduate Attributes:** Graduate of master (MSC) program should be able to:
1.1. إجادة تطبيق أساسيات ومنهجيات البحث العلمي واستخدام أدواته المختلفة.	1.1. understanding and applying of basics of research method and research tools
2.1. تطبيق المنهج التحليلي واستخدامه في مجال التخصص	2.1. Critically analyze, evaluate, and effectively communicate findings, theories, and methods
3.1. تطبيق المعارف المتخصصة و دمجها مع المعارف ذات العلاقة في ممارسته المهنية.	3.1. Apply integrated professional and general knowledge in his scholarly field and at the interface between different fields.
4.1. إظهار وعيا بالمشاكل الجارية والرؤى الحديثة في مجال التخصص.	4.1. Demonstrate awareness of community health needs related to the field of specialization by understanding the beneficial interaction with the society to improve quality of life
5.1. تحديد المشكلات المهنية وإيجاد حلولا لها.	5.1. Demonstrating proficiency, required to solve current complex problems in his scholarly field.
6.1. إتقان نطاق مناسب من المهارات المهنية المتخصصة واستخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية.	6.1. Master a variety of technical skills in his scholarly field and expert relevant equipment, technology, and software.

7.1. لتواصل بفاعلية والقدرة على قيادة فرق العمل.	7.1. Gain leadership skills and be able to communicate efficiently with colleagues and get the best results.
8.1. اتخاذ القرار في سياقات مهنية مختلفة.	8.1. Take professional situational decisions and logically support them.
9.1. توظيف الموارد المتاحة بما يحقق أعلي استفادة و الحفاظ عليها	9.1.Optimal use of available resources to achieve research or best patient health care and ensure its maintenance.
10.1. إظهار الوعي بدوره في تنمية المجتمع والحفاظ على البيئة في ضوء المتغيرات.	10.1. Demonstrate awareness of its role in community health development and
11.1. التصرف بما يعكس الالتزام بالنزاهة والمصداقية والالتزام بقواعد المهنة.	11.1. Exhibit ethical behavior that reflect commitment to the code of practice
12.1. تنمية ذاته أكاديميا ومهنيا و قادرا علي التعلم المستمر.	12.1. demonstrate the ability to sustain a lifelong personal and professional growth.
٢.المعايير القياسية العامة: **NAQAAE General Academic Reference Standards "GARS" for Master Programs**	**2. Faculty Academic Reference Standards (ARS) for Master Program**
٢,١. المعرفة والفهم: بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا علي الفهم والدراية بكل من:	**2.1. Knowledge & Understanding:** Upon completion of **the Master Program in** cardiology, the graduate should have sufficient knowledge and understanding of:
٢,١,١. النظريات والأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة	2.1.1. Understand the scientific basis and modern knowledge in the field of specialization and related medical sciences
٢,١,٢. التأثير المتبادل بين الممارسة المهنية وانعكاسها علي البيئة	2.1.2. The mutual influence of professional practice on work environment, working conditions, and job characteristics.
٢,١,٣. التطورات العلمية في مجال التخصص	2.1.3. Scientific developments in the field of specialization
٢,١,٤. المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص	2.1.4. Recognize basics of medico-legal aspects of practice, malpractice and avoid common medical errors

٢,١,٥. مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص	2.1.5. Quality principles in the scholarly field
٢,١,٦. أساسيات وأخلاقيات البحث العلمي	2.1.6. Basis of research methodology and medical ethics.
2.2.المهارات الذهنية: بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	**2.2. Intellectual Skills:** Upon completion of the master program of, the graduate should be able to:
2.2.1. تحليل وتقييم المعلومات في مجال التخصص والقياس عليها لحل المشاكل	2.2.1. Use judgment skills for analytical and critical problem solving
2.2.2.حل المشاكل المتخصصة مع عدم توافر بعض المعطيات	2.2.2. Capable of integrating knowledge and dealing with complex subjects to solve problems
2.2.3الربط بين المعارف المختلفة لحل المشاكل المهنية	2.2.3. Be capable of integrating research results and/or results of history, physical and laboratory test findings to solve a research or a clinical problem.
2.2.4.إجراء دراسة بحثية و/أو كتابة دراسة علمية منهجية حول مشكلة بحثية	2.2.4. Effectively apply research methods and carrying out a medical research thesis
2.2.5.تقييم المخاطر في الممارسات المهنية في مجال التخصص	2.2.5. Be aware of risk management principles, and patient safety.
2.2.6.التخطيط لتطوير الأداء في مجال التخصص	2.2.6. Establish goals, commitments, and strategies for improved professional performance in the field of specialty
2.2.7.اتخاذ القرارات المهنية في سياقات مهنية متنوعة.	2.2.7. Take professional situational decisions and logically support them.
3.2.المهارات المهنية: بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	**3.2. Professional Skills:** Upon completion of the master program of cardiology, the graduate must be able to:
3.2.1.إتقان المهارات المهنية الأساسية والحديثة في مجال التخصص.	3.2.1. Master the basic and some advanced professional skills in his scholarly field.
٣,٢,٢كتابة و تقييم التقارير المهني.	3.2.2. Write and evaluate medical or scientific reports
٢,٣,٣تقييم الطرق والأدوات القائمة في مجال التخصص	3.2.3. Assess and evaluate technical tools during research

4.2. المهارات العامة والمنتقلة : بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	4.2. **General and transferable skills** Upon completion of the master program of cardiology, the graduate should be able to:
٤,٢,١. التواصل الفعال بأنواعه المختلفة	4.2.1. Communicate effectively using a written medical record, electronic medical record, or other digital technology.
٤,٢,٢. استخدام تكنولوجيا المعلومات بما يخدم الممارسة المهنية	4.2.2. Use of information technology (computer to create, process, store, secure and exchange electronic data) in the field of medical practice.
4.2.3. لتقييم الذاتي وتحديد احتياجاته التعلمية الشخصية	4.2.3. Assess himself and identify personal learning needs
4.2.4. استخدام المصادر المختلفة للحصول على المعلومات والمعارف	4.2.4. Use various sources for information (physical and digital sources).
4.3.5. وضع قواعد ومؤشرات تقييم أداء الآخرين	4.2.5. Setting indicators for evaluating the performance of others
4.2.6. العمل في فريق، وقيادة فرق في سياقات مهنية مختلفة	4.2.6. Work in a team, and Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system
4.2.7. إدارة الوقت بكفاءة	4.2.7. Manage time efficiently
٤,٢,٨.التعلم الذاتي والمستمر	4.2.8. Demonstrate skills of self-learning and lifelong learning needs of medical profession.

Date of last department approval: 6-3-2023
Head of the cardiology unit Signature:

Dr.Khaled Elmaghraby

ANNEX [II]
Matrix Between Faculty Academic Reference Standards (ARS), and Program ILOs

2. Faculty Academic Reference Standards (ARS) for Master Program	Cardiology MSc program ILOs
2.1. Knowledge & Understanding: Upon completion of **the Master Program** , the graduate should have sufficient knowledge and understanding of:	**A. Knowledge And understanding** **(A)** Upon completion of **the Master Program in** cardiology, the graduate should have sufficient knowledge and understanding of:
2.1.1. Understand the scientific basis and modern knowledge in the field of specialization and related medical sciences	a.1 Discuss the basics in the normal **anatomy** of the cardiovascular system. a.2 Discuss the normal **physiology** and functions of cardiovascular system. a.3 Identify the **biochemical** basis of health and disease in the human body. a.4 Describe various **pharmacological** and non-pharmacological therapeutic options of different disease a.5 Recognize the essential **pathological** changes of different cardiovascular diseases a.6 Define main cardiological diseases, their etiologies, pathologies, diagnosis, and management. a.7 Identify scientific development in the field of cardiology.
2.1.2. The mutual influence of professional practice on work environment, working conditions, and job characteristics.	a.8 Identify the mutual influence between professional practice and its impacts on the environment.
2.1.3. Scientific developments in the field of specialization	a.9 Identify scientific development in the field of cardiology.

2.1.4. Recognize basics of medico-legal aspects of practice, malpractice and avoid common medical errors	a.10 List the ethical and legal principles of professional practice in the field of cardiovascular Medicine.
2.1.5. Quality principles in the scholarly field	a.11 List the principles of quality in professional practice in the field of cardiovascular Medicine.
2.1.6. Basis of research methodology and medical ethics.	a.12 Define the quality principles in the cardiovascular field.
2.2. Intellectual Skills: Upon completion of the master program, the graduate should be able to:	**Intellectual Skills** **(B)** Upon completion of the master program of cardiology, the graduate should be able to
2.2.1. Use judgment skills for analytical and critical problem solving	b.1 Solve different problems related to cardiology
2.2.2. Capable of integrating knowledge and dealing with complex subjects to solve problems	b.2 Combine basic knowledge and clinical skills to diagnose and treat different cardiovascular medicine diseases.
2.2.3. Be capable of integrating research results and/or results of history, physical and laboratory test findings to solve a research or a clinical problem.	b.3 Interpret clinical history, examination, imaging, and laboratory studies for different cardiovascular diseases.
2.2.4. Effectively apply research methods and carrying out a medical research thesis	b.4 Apply research methods to carry out a thesis in one of the cardiovascular fields.
2.2.5. Be aware of risk management principles, and patient safety.	b.5 Construct good understanding to common risks and patient safety issues related to cardiac patients.
2.2.6. Establish goals, commitments, and strategies for improved professional performance in the field of specialty	b.6 Plan for the development of performance in the field of cardiovascular medicine
2.2.7. Take professional situational decisions and logically support them.	b.7 Design diagnostic and therapeutic plans to cardiac patients and report them to colleagues and managerial authorities.
3.2. Professional Skills: Upon completion of the master program, the graduate must be able to:	**Professional Skills** **(C)** Upon completion of the master program cardiology, the graduate must be able to:

3.2.1. Master the basic and some advanced professional skills in his scholarly field.	c.1 Assess clinical history and symptoms of cardiovascular Medicine. c.2 Examine and perform clinical evaluation of different body systems. c.3 Analyze different laboratory and imaging studies (x-rays, CT, MRIs), etc. c.4 Assess Electrocardiogram, perform echocardiography. c.7 Perform some interventional procedures such as temporary pacemaker, thoracocentesis, central line insertion, and endotracheal tube insertion.
3.2.2. Write and evaluate medical or scientific reports	c.6 Write and evaluate medical reports for cardiac patients.
3.2.3. Assess and evaluate technical tools during research	c.5 Compare different clinical pictures, diagnostic procedures, and treatments of cardiovascular diseases.
4.2. **General and transferable skills** Upon completion of the master program, the graduate should be able to:	**General and Transferrable Skills.** **(D)** Upon completion of the master program of cardiology, the graduate should be able to
4.2.1. Communicate effectively using a written medical record, electronic medical record, or other digital technology.	d.6 Communicate effectively with cardiovascular patients, colleagues, and other managerial authorities. d.8 Become aware of community-related health problems related to cardiovascular medicine.
4.2.2. Use of information technology (computer to create, process, store, secure and exchange electronic data) in the field of medical practice.	d.1 Use online databases to collect materials needed for research and thesis. d.2 Manage and organize materials from various sources from the internet, libraries, etc. d.3 Express a research assignment orally and electronically.
4.2.3. Assess himself and identify personal learning needs	d.7 Develop a life-long attitude of continuous self-improvement and continuous medical education.

4.2.4. Use various sources for information (physical and digital sources).	d.2 Manage and organize materials from various sources from the internet, libraries, etc.
4.2.5. Setting indicators for evaluating the performance of others	d.11 Put and use indicator for evaluating the performance of others.
4.2.6. Work in a team, and Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system	d.10 Work as a team worker and leader while working with other colleagues.
4.2.7. Manage time efficiently	d.8 Manage time effectively
4.2.8. Demonstrate skills of self-learning and lifelong learning needs of medical profession.	d.7 Develop a life-long attitude of continuous self-improvement and continuous medical education.

Date of last department approval: 6-3-2023
Head of the cardiology department Signature: Prof Khaled Elmaghraby

ANNEX [III]:
Matrix of Coverage of Program ILOs by Program courses (topics)

Course Title	Program ILOs Covered
FIRST PART:	
1. Medical Physiology and Medical biochemistry	a.3, a.4 b.1, b.2, c.3, c.7, d.1, d.2, d.5.
2.Medical Pharmacology	a.4, b.1, b.2, c.3, c.7, d.1, d.2, d.5.
3.Pathology	a.5, b.1, b.2, c.3, c.7, d.1, d.2, d.5.
4.Internal Medicine	a.6, a.7, a8, a.10, a.11, a.12, b.1, b.2, b.3, b.5, b.6, b.7, c.1, c.2, c.3, c.4, c.5, d.2, d.7, d.8
5.Basics of cardiology	a.8, a.9, a.10, a.11, a.12,
6.Medical Ethics.	a.12, b5, d4, d5, d6
Training programs and workshops, field visits, seminars& other scientific activities	a.8, a.9, a.10, a.11, a.12, b.1, b.2, b.3, b.5, b.6, b.7 c.1, c.2, c.3, c.4, c.5 d1, d.2, d3, d4, d5, d6, d.7, d.8
SECOND PART:	
7. Cardiology course: **a.Cardiovascular diseases**	a.8, a.9, a.10, a.11, a.12, b.1, b.2, b.3, b.5, b.6, b.7, c.1, c.2, c.3, c.4, c.5, d.2, d.7, d.8
b.Cardiovascular diagnostic methods	a.8, a.9, a.10, a.11, a.12, b.1, b.2

Date of last department approval: 6-3-2023
Head of the cardiology unit Signature: Khaled elmaghraby

ANNEX [IV]:
Matrix of Coverage of Program ILOs by Methods of Teaching & Learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lectures (PowerPoint, chalk, and talk)	1,2,3,4,5,6,7,8,9,10,11, 12	1,2,3,5,7	1,2,3,4,5	2,5,7,8,9
Clinical and practical (Including grand rounds)	5,6,7,8,9,10,11,12,	1,2,3,5,7	1,2,3,4,5,6, 7	2,4,5,6,7,8,9,
Presentation/seminar	8,9,10,11,12,	1,2,5,6,7	1,2,5	2,5,6,7,8,9
Journal club	8,9,10,11,12,	2,4,5,6,7	1,3,5	1,2,3,5,7,9,10, 11
Thesis discussion	-	-	-	1,2,3,5

Date of last department approval: 6-3-2023
Head of the cardiology department Signature: Khaled Elmaghraby

ANNEX [3]
Matrix of Coverage of Program ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
WRITTEN EXAM - Short essay - MCQs - Complete - True or false and correct the wrong - Commentary - Problem solving	1,2,3,4,6,7,8,9,10,11,12	1,2,3,7	-	-
CLINICAL EXAM: - Long case history and examination. - Short case history and examination. - Commentary cases. - ECG Quizzes. - Radiology Quizzes.	8,9,10,11,12	1,2,3,5,7	1,2,3,4	-
ORAL EXAM	1,2,3,4,6,7,8,9,10,11,12	1,2,3,5,6,7	4,6,7	4,5
LOG BOOK	-	-	1,2,3	1,2,3,4,5,6,7,8,9,10,11

Date of last department approval: 6-3-2023
Head of the cardiology department Signature: Dr.Khaled Elmaghraby

Faculty of Medicine

Course Specifications of Cardiology Master (MSc) Degree.

University: Minia

Faculty: Medicine

Department: Special medicine department, Cardiology unit

1. Course Information	
• **Academic Year/level:** Second Part	• **Course Title:** Course Specifications of Cardiology, Master Degree **(CODE: CV100)**
• **Number of hours:** ○ **Practical: 251 hours/one year.** ○ **Lectures: 250 hours/one year.** • **Total: (30 h/wk); 1560 hours.**	
2. Overall Aims of the course	The aim of this program is to provide the postgraduate with the advanced medical knowledge and skills essential for the mastery of practice of Cardiology and necessary for further training and practice in the field of Cardiovascular medicine including through providing: 1. Recent scientific knowledge essential for the mastery of practice of cardiovascular medicine, cardiac emergency, noninvasive cardiac investigations and invasive cardiology and enabling the candidates of making appropriate referrals to a sub-specialist according to the international standards. 2. Skills necessary for proper diagnosis and management of patients including diagnostic, decision making and problem solving and interventional skills. 3. Ethical principles related to medical practice.

	4. Enabling candidates with master degree to start professional careers as specialist 5. Active participation in community needs assessment and problems identification. 6. Maintenance of learning abilities necessary for continuous medical education. 7. Upgrading research interest and abilities.
3. Intended learning outcomes of course (ILOs): ***Upon completion of the course, the student should be able to:***	
A- Knowledge and understanding	By the end of the study of master program in Cardiology, the Graduate should be able to A. 1 Identify and apply clinically supportive sciences which are appropriate to the following areas of: a. Cardiovascular diseases (CVD) b. Cardiac emergency (CE). c. Non-invasive cardiac investigations (NICI). d. Cardiac catheterization (Cath.) A. 2 Explain natural history of common cardiovascular diseases and situations to cardiovascular system. A. 3 Identify etiology of common cardiovascular diseases and situations related to cardiovascular system A. 4 Summarize knowledge of clinical picture of common cardiovascular diseases and situations related to cardiovascular system A. 5 Discuss recent knowledge of diagnostic and Laboratory Techniques to establish and confirm diagnosis of common cardiovascular diseases and situations related to cardiovascular system. A. 6 Identify various prevention and therapeutic methods/alternatives in the treatment of common cardiovascular diseases and situations related to cardiovascular system A. 7 Describe in the pharmacodynamics and pharmacokinetics, advantages, disadvantages, side effects and complications of the different cardiovascular drugs A. 8 Illustrate the recent and update developments in the pathogenesis, diagnosis, prevention and treatment of common diseases related to cardiovascular system. A 9 State the ethical and scientific principles of medical research.

B- Intellectual Skills	B1. Correlate the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common diseases of the cardiovascular system. B2 Relate an investigatory and analytic thinking approach (problem solving) to common clinical situations related to cardiovascular system.
C- Professional and Practical Skills	By the end of the study of Master program in Cardiology the Graduate ld be able to C.1 Practice the basic and modern professional clinical and interventional skills in Cardiology. C.2 Write and evaluation of medical reports. C.3 Evaluate and develop of methods and tools existing in the area of Cardiology C.4 Perform both noninvasive (echo) and invasive (cath &angiographic) evaluation in Cardiology. C.5 Train junior staff though continuous medical education C.6 Perform new methods, tools and ways of professional practice.
D- General and transferable Skills	By the end of the study of Master program in Cardiology the Graduate should be capable to: D1 Communicate effectively by all types of effective communication. D.2 Use information technology to serve the development of professional practi D3 Assess himself and identify his personal needs. D.4 The use of different sources to obtain information and knowledge. D.5 Develop rules and indicators for assessing the performance of others. D.6 Work in a team, and team's leadership in various professional contexts. D7 manage time efficiently.

COURSE CONTENTS

	Lectures	Practical	Total hours
Acute coronary syndromes	5	5	10
Chronic ischemic heart disease	3	6	9
Rheumatic fever	5	8	13
Valvular heart disease	6	9	15
Hypertension	8	4	13
Heart failure	7	5	12
Infective endocarditis	2	3	5
Arrhythmia	3	4	7
Adult CHD	2	2	4
Myocardial diseases	3	5	8
Pericardial diseases	6	9	15
Diabetic heart disease s	9	1	10
Pregnancy and heart disease	8	4	12
Heart Disease in the elderly	1	6	7
Heart Disease in women	2	3	5
Heart and CT disease	5	5	10
Heart and neurological diseases	3	3	6
Heart and renal disease	8	5	13

Heart and endocrine diseases	**7**	**3**	**10**
Cardio-pulmonary diseases	**5**	**2**	**7**
Cardiac tumors	**2**	**5**	**7**
Peripheral arterial diseases	**2**	**6**	**8**
Drugs affecting heart function	**3**	**8**	**11**
Obesity and cardiovascular medicine	**6**	**9**	**15**

	Lectures	**Practical**	**Total hours**
Acute aortic syndromes	**2**	**5**	**7**
Arrhythmia peadiatrics	**3**	**3**	**6**
Cardiogenic shock	**6**	**6**	**12**
Cardio-pulmonary resuscitation	**6**	**9**	**15**
Hypertensive emergency	**5**	**8**	**13**
Pulmonary edema	**8**	**7**	**15**
Acute pulmonay embolsim	**9**	**2**	**11**
The most common electrolyte disorders and its cardiac implications:	**7**	**5**	**12**
Hypokalemia	**2**	**5**	**7**
Hypomagnesemia	**2**	**1**	**3**
Hyperkalemia	**3**	**5**	**8**

	Lectures	Practical	Total hours
Resting 12-leads ECG	5	5	10
Transthoracic echocardiographic examination	3	6	9
Transesophageal echocardiographic examination	6	3	9
Multi-slice CT cardiac examination	4	6	10
Myocardial perfusion scintigraphy	9	4	13
Exercise ECG	8	2	10
Stress Echocardiography	7	5	12
24-hours ECG (Holter monitoring)	2	5	7

	Lectures	Practical	Total hours
Diagnostic coronary angiograph.	5	9	14
Temporary pacemaker insertion	9	5	14

Course Methods of Teaching/learning:

1. **Lectures, seminars, tutorial)**
2. **Outpatient**
3. **Inpatient**
4. **Case presentation**
5. **Direct observation**
6. **journal club**

7. Critically appraised topic.
8. Educational prescription
9. Clinical rounds
10. Clinical rotation
11. Senior staff experience
12. Case log
13. Observation and supervision
14. Written & oral communications
15. Simulation
16. Hand on workshops
17. Service teaching
18. Perform under supervision of senior staff
19. Postgraduate teaching

Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs
2. Extra clinical work according to their needs

Course Assessment Methods:

i. Assessment tools:

1. Oral examination
2. Clinical examination
3. Written examination
4. Objective structure clinical examination (OSCE)
5. Procedure/case Logbook and Portfolios
6. Record review (report)
7. Patient survey
8. Check list evaluation of live or recorded performance.
9. MCQ Exam

ii. Assessment Schedule: At the end of second part

Weighting of assessment

Written examination	280 marks (140 for each exam paper)
Oral examination	210 marks
Practical examination	210 marks
Total	700 marks

List of references

i. Lectures notes

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

ii. Essential books

Topole Cardiology

Hurst, The Heart

Braunwals Cardiovascular Medicine

William Grossman, Cath and CV diagnosis

iii. Recommended books:

iv. Periodicals, Web sites,

Journal of American College of Cardiology

European Heart Journal

American Journal of Cardiology

American Heart Journal

Europace

v. others: None

Date of <u>last update</u> & approval by department Council:

March 2023

<u>Head of the department signature:</u>

Dr Khaled Sayed Almaghraby, MD

جامعة: المنيا

كلية: الطب

قسم: القلب

مسمى المقرر	ماجستير أمراض القلب
كود المقرر	CV100

[ANNEX II] Matrix of Coverage of Course ILOs by Methods of Teaching&Learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
lectures (PowerPoint, chalk, and talk)	A1; A9	B1; B2		
Clinical (Including grand rounds)			C1; C6	
Presentation/seminar				D1; D7
Journal club				D1; D7
Thesis discussion				D1; D7

Head of the department signature:

Dr Khaled Sayed Almaghraby, MD

[ANNEX III] Matrix of Coverage of Course

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Written exam	A1; A9	B1; B2	-	-
Clinical exam - Short Case. - Long Case. - ECG & Radiology Quizzes.			C1; C6	
Oral Exam	A1; A9	B1; B2		

Head of the department Signature:

Dr Khaled Sayed Almaghraby, MD

[ANNEX IV] MATRIX OF COVERAGE OF COURSE ILOS BY COURSE TOPICS

Course topics	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Acute coronary syndromes	A1; A9	B1; B2		
Chronic ischemic heart disease	A1; A9	B1; B2		
Rheumatic fever	A1; A9	B1; B2		
Valvular heart disease	A1; A9	B1; B2		
Hypertension	A1; A9	B1; B2		
Heart failure	A1; A9	B1; B2		
Infective endocarditis	A1; A9	B1; B2		
Arrhythmia	A1; A9	B1; B2		
Adult CHD	A1; A9	B1; B2		
Myocardial diseases	A1; A9	B1; B2		
Pericardial diseases	A1; A9	B1; B2		
Diabetic heart disease s	A1; A9	B1; B2		

Pregnancy and heart disease	**A1; A9**	**B1; B2**		
Heart Disease in the elderly	**A1; A9**	**B1; B2**		
Heart Disease in women	**A1; A9**	**B1; B2**		
Heart and CT disease	**A1; A9**	**B1; B2**		
Heart and neurological diseases	**A1; A9**	**B1; B2**		
Heart and renal disease	**A1; A9**	**B1; B2**		
Heart and endocrine diseases	**A1; A9**	**B1; B2**		
Cardio-pulmonary diseases	**A1; A9**	**B1; B2**		
Cardiac tumors	**A1; A9**	**B1; B2**		
Peripheral arterial diseases	**A1; A9**	**B1; B2**		
Drugs affecting heart function	**A1; A9**	**B1; B2**		
Obesity and cardiovascular medicine	**A1; A9**	**B1; B2**		

Acute coronary syndromes	**A1; A9**	**B1; B2**		
Arrhythmia	**A1; A9**	**B1; B2**		
Cardiogenic shock	**A1; A9**	**B1; B2**		
Cardio-pulmonary resuscitation	**A1; A9**	**B1; B2**		
Hypertensive emergency	**A1; A9**	**B1; B2**		
Pulmonary edema	**A1; A9**	**B1; B2**		
Acute pulmonay embolsim	**A1; A9**	**B1; B2**		
The most common electrolyte disorders and its cardiac implications:	**A1; A9**	**B1; B2**		
Hypokalemia	**A1; A9**		**C1; C6**	
Hypomagnesemia	**A1; A9**			
Hyperkalemia	**A1; A8**	**B1; B2**		
Resting 12-leads ECG		**B1; B2**		**D1; D7**
Transthoracic echocardiographic examination		**B1; B2**	**C1; C6**	**D1; D7**

Transesophageal echocardiographic examination			**C1; C6**	**D1; D7**
Multi-slice CT cardiac examination		**B1; B2**	**C1; C6**	**D1; D7**
Myocardial perfusion scintigraphy			**C1; C6**	**D1; D7**
Exercise ECG			**C1; C6**	**D1; D7**
Stress Echocardiography		**B1; B2**	**C1; C6**	**D1; D7**
24-hours ECG (Holter monitoring)			**C1; C6**	**D1; D7**
Diagnostic coronary angiograph.			**C1; C6**	**D1; D7**
Diagnostic cardiac catheterization			**C1; C6**	**D1; D7**
Temporary pacemaker insertion			**C1; C6**	**D1; D7**

Head of the department signature:

Dr Khaled Sayed Almaghraby, MD

Blueprint Of Cardiology Department for Master (MSc) Degree [Cardiology Examination Paper, Second Part]

	Topic	Hours	Knowledge %	Intellectual %	% of topic	N of items per topic	Marks	Actual Mark
	Acute coronary syndromes	10	75%	25%	2.0	4	25	4
	Chronic ischemic heart disease	9	75%	25%	1.8	2	12	4
	Rheumatic fever	13	83.4%	16.6%	2.6	1	16	5
	Valvular heart disease	15	75%	25%	3.0	1	18	6
	Hypertension	13	75%	25%	2.6	1	16	5
	Heart failure	12	75%	25%	2.4	2	14	5
	Infective endocarditis	5	66.7%	33.4%	1.0	2	8	2
	Arrhythmia	7	75%	25%	1.4	2	20	3
	Adult CHD	4	75%	25%	0.8	4	20	2
	Myocardial diseases	8	75%	25%	1.6	2	15	3
	Pericardial diseases	15	83.4%	16.6%	3.0	1	10	6
	Diabetic heart disease s	10	75%	25%	2.0	1	10	4
	Pregnancy and heart disease	12	75%	25%	2.4	1	10	5
	Heart Disease in the elderly	7	75%	25%	1.4	2	10	3

	Heart Disease in women	5	66.7%	33.4%	1.0	2	5	2
	Heart and CT disease	10	75%	25%	2.0	2	10	4
	Heart and neurological diseases	6	75%	25%	1.2	4	8	2
	Heart and renal disease	13	75%	25%	2.6	2	14	5
	Heart and endocrine diseases	10	83.4%	16.6%	2.0	1	12	4
	Cardio-pulmonary diseases	7	75%	25%	1.4	1	8	3
	Cardiac tumors	7	75%	25%	1.4	1	8	3
	Peripheral arterial diseases	8	75%	25%	1.6	2	8	3
	Drugs affecting heart function	11	66.7%	33.4%	2.2	2	14	4
	Obesity and cardiovascular medicine	15	75%	25%	3.0	2	12	6
	Acute aortic syndromes	7	75%	25%	1.4	4	18	3
	Paediatric Arrhythmia	6	75%	25%	1.2	2	10	2
	Cardiogenic shock	12	83.4%	16.6%	2.4	1	20	5
	Cardio-pulmonary resuscitation	15	75%	25%	3.0	1	18	6
	Hypertensive emergency	13	75%	25%	2.6	1	18	5
	Pulmonary edema	15	75%	25%	3.0	2	18	6
	Acute Pulmonary embolsim	11	66.7%	33.4%	2.2	2	16	4
	Hypokalemia	12	75%	25%	2.4	2	10	5
	Hypomagnesemia	7	75%	25%	1.4	4	6	3
	Hyperkalemia	3	75%	25%	0.6	2	5	1
	Resting 12-leads ECG	10	83.4%	16.6%	2.0	1	16	4
	Transthoracic echocardiographic examination	9	75%	25%	1.8	1	12	4

	Transesophageal echocardiographic examination	9	75%	25%	1.8	1	12	4
	Multi-slice CT cardiac examination	10	75%	25%	2.0	2	12	4
	Myocardial perfusion scintigraphy	13	66.7%	33.4%	2.6	2	14	5
	Exercise ECG	10	75%	25%	2.0	2	12	4
	Stress Echocardiography	12	75%	25%	2.4	4	14	5
	24-hours ECG (Holter monitoring)	7	75%	25%	1.4	2	8	3
	Diagnostic coronary angiograph.	14	83.4%	16.6%	2.8	1	16	6
	Temporary pacemaker insertion	14	75%	25%	2.8	2	16	6
TOTAL		441			100 %		560	560

Head of the department Signature

Dr Khaled Sayed Almaghraby, MD

Basic Cardiology course, MSC degree

Cardiovascular departement

Faculty of Medicine

Minia University

2022-2023

I. Course data

- **Course Title: Basic Cardiology**
- **Number of hours: (1h/wk) 26 hours/6 months, practical 0 hours.**
- **Department (s) delivering the course: Special medicine department, Cardiology unit**
- **Coordinator (s): Staff members of Cardiology Department as annually approved by department council.**
- **Date last reviewed: 3/2023**

2. Course Aims

The student should acquire the basic facts necessary for Cardiovascular Medicine.

3. Course intending learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	**Methods of teaching/**	***Methods of Evaluation***

	learning	
A.1. Mention the basic principles of Cardiology including: - Molecular ultrastructure of the heart, - Genetics and stem cell therapy in cardiology - Embryology of the heart, great vessels and coronary arteries. - Anatomy of the heart, great vessels and coronary arteries. - Stress testing modalities in cardiovascular medicine. - Imaging modalities of the heart and cardiac function assessment. - Basic principles of ECG. - Metabolism of the heart - Excitation-contraction coupling. - Cardiovascular parameters under basal and stressful conditions. - Conductive system of the heart and the neural control. - Cardiac cycle and its pharmacological implications. - Cardiac effects of hypoxia, acid-base disturbances, and electrolyte imbalances.	Lectures	Written and oral exams
A.2. State update and evidence-based Knowledge of the above entities.		
A.3. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Cardiovascular Medicine		

B- Intellectual outcomes

ILOs	**Methods of teaching/ learning**	**Methods of Evaluation**

B.1. Apply the facts of basic Cardiology which are appropriate to clinical reasoning, diagnosis and management of cardiovascular disorders.	Lectures	Written exam. -Log book
B.2. Relate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to cardiovascular diseases.		
B.3. Design and present seminars in common problem		
B.4. Formulate management plans and alternative decisions in different situations in the field of the Cardiovascular Medicine.		

C- Professional and Practical skills: Not applied

D- General and Transferable Skills

Practice-Based Learning and Improvement

ILOs	**Methods of teaching/ learning**	**Methods of Evaluation**
D.1. Appraises evidence from scientific studies (journal club)	-Observation and supervision -Written and oral communication	Logbook
D.2. Perform data management including data entry and analysis.		
D.3. Elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.	-Observation and supervision -Written and oral communication	Log book
D.4. Write a report on common conditions mentioned in A.A.		
D.5. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	- Observation -Senior staff experience	Logbook
D.6. Work effectively in relevant health care delivery settings and systems.	- Observation -Senior staff experience	Logbook

4. Course contents

Time Schedule: First Part

The competency-based objectives of this course are specified in conjunction with teaching/training methods, requirements for achieving these objectives and assessment methods.

Topic	Covered ILOs			
	Lectures (hrs)	Program I L Os Covered (By No.)	Intellectual skill	General Skills
Molecular ultrastructure of the heart	**2**	**A1-A3**	**B1-B4**	**D1-D6**
Genetics and stem cell therapy in cardiology	**2**	**A1-A3**	**B1-B4**	**D1-D6**
Embryology of the heart, great vessels and coronary arteries	**2**	**A1-A3**	**B1-B4**	**D1-D6**
Anatomy of the heart , great vessels and coronary arteries	**2**	**A1-A3**	**B1-B4**	**D1-D6**
Stress testing modalities in cardiovascular medicine	**2**	**A1-A3**	**B1-B4**	**D1-D6**
Imaging modalities of the heart and cardiac function assessment	**2**	**A1-A3**	**B1-B4**	**D1-D6**
Basic principles of ECG	**2**	**A1-A3**	**B1-B4**	**D1-D6**
Metabolism of the heart	**2**	**A1-A3**	**B1-B4**	**D1-D6**
Excitation-contraction coupling	**2**	**A1-A3**	**B1-B4**	**D1-D6**

Cardiovascular parameters under basal and stressful conditions	**2**	**A1-A3**	**B1-B4**	**D1-D6**
Conductive system of the heart and the neural control	**2**	**A1-A3**	**B1-B4**	**D1-D6**
Cardiac cycle and its pharmacological implications	**2**	**A1-A3**	**B1-B4**	**D1-D6**
Cardiac effects of hypoxia, acid-base disturbances and electrolyte imbalances	**2**	**A1-A3**	**B1-B4**	**D1-D6**

5. Course Methods of teaching/learning:

1. **Didactic (lectures, seminars, tutorial)**
2. **Observation and supervision**
3. **Written & oral communication.**
4.

6. Course Methods of teaching/learning: for students with poor achievements

1. **Extra Didactic (lectures, seminars, tutorial) according to their needs**

7. Course Assessment Methods:

i. Assessment tools:

1. Written examination.
2. Logbook

ii. Time schedule: At the end of the first part

iii. Marks: 60 marks = 20% of 1st part.

8. List of references

i. Lectures notes

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

ii. Essential books

Topol Cardiology

Hurst, The Heart

Braunwalds Cardiovascular Medicine

William Grossman cath and CV diagnosis

iii. Recommended books:

iv. Periodicals, Web sites,

Journal of American College of Cardiology

European Heart Journal

American Journal of Cardiology

American Heart Journal

Euro pace

v. others: None

9. Facilities Required for Teaching and Learning

1. Adequate infrastructure: including teaching places (teaching class, teaching halls, teaching laboratory), Comfortable desks, good source of aeration, bathrooms, good illumination, safety & Security tools.
2. Teaching Tools: including screens, Computer including cd(rw), data shows, Projectors, flip charts, white board, video player, digital video camera, Scanner, copier, colour and laser printers.
3. Computer Program: for designing and evaluating MCQs

مسمى المقرر	ماجستير أمراض القلب
كود المقرر	CV100

جامعة: المنيا

كلية: الطب

قسم: القلب

Faculty of Medicine

[ANNEX II] Matrix of Coverage of Course ILOs by Methods of Teaching&Learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
lectures (PowerPoint, chalk, and talk)	A1; A3	B1; B4		
Presentation/seminar				D1; D6

Journal club				**D1; D6**
Thesis discussion				**D1; D6**

Head of the department signature:

Dr Khaled Sayed Almaghraby, MD

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Written exam	A1; A3	B1-B4	-	-

Head of the department Signature:

Dr Khaled Sayed Almaghraby, MD

[ANNEX IV] MATRIX OF COVERAGE OF COURSE ILOS BY COURSE TOPICS

Topic	Covered ILOs			
	BLUE PRINT	**Program I L Os Covered (By No.)**	**Intellectual skill**	**General Skills**
Molecular ultrastructure of the heart, Genetics and stem cell therapy in cardiology	**5**	**A1-A3**	**B1-B4**	**D1-D6**
Embryology of the heart, great vessels and coronary arteries	**5**	**A1-A3**	**B1-B4**	**D1-D6**
Anatomy of the heart , great vessels and coronary arteries	**5**	**A1-A3**	**B1-B4**	**D1-D6**
Stress testing modalities in cardiovascular medicine	**5**	**A1-A3**	**B1-B4**	**D1-D6**
Imaging modalities of the heart and cardiac function assessment	**5**	**A1-A3**	**B1-B4**	**D1-D6**

Basic principles of ECG	**5**	**A1-A3**	**B1-B4**	**D1-D6**
Metabolism of the heart	**5**	**A1-A3**	**B1-B4**	**D1-D6**
Excitation-contraction coupling	**5**	**A1-A3**	**B1-B4**	**D1-D6**
Cardiovascular parameters under basal and stressful conditions	**5**	**A1-A3**	**B1-B4**	**D1-D6**
Conductive system of the heart and the neural control	**5**	**A1-A3**	**B1-B4**	**D1-D6**
Cardiac cycle and its pharmacological implications	**5**	**A1-A3**	**B1-B4**	**D1-D6**
Cardiac effects of hypoxia, acid-base disturbances and electrolyte imbalances	**5**	**A1-A3**	**B1-B4**	**D1-D6**
Total	**60**			

Head of the department signature:

Dr Khaled Sayed Almaghraby, MD

Course Specifications of Internal Medicine for first part of master's degree in cardiology

University: Minia

Faculty: Medicine

Department: Internal Medicine

4. Course Information		
• **Academic Year/level:** first part	• **Course Title:** Course Specifications of Internal Medicine for first part of Master degree in **cardiology**	

• **Number of teaching hours:** ▪ **Lectures: Title:** internal medicine ▪ **Hours per week:** 2 hours for 16 weeks ▪ **Lecture:** one lecture /week for 16 weeks ▪ **Code:** - **Practical/clinical**: Total of 9 hours	
5. Overall Aims of the course	*By the end of the course the student must be able to:* have the professional knowledge of internal Medicine with selective experience on other body systems and how it affect and be affected by the cardio vascular system and its diseases.
6. Intended learning outcomes of course (ILOs): ***Upon completion of the course, the student should be able to:***	
E- Knowledge and understanding	By the end of the program the candidate should be able to A1-Recognize and master the medical science and technology used in the intensive care unit and internal medicine department A2-Define the appropriate ethical standards and cope with the psychological and social effects of critical illness on patients and their families A3-Identify critical disorders in various systemic diseases

	A4- Define the non invasive diagnostic tests during the daily practice (eg. , CXR, ,Point of care ultrasonography , etc.) interpretation of laboratory investigation A5-Describe different management modalities for common critical care problems such as the pharmacological, interventional and surgical management.
F- Intellectual Skills	By the end of the program the candidate should be able to B1-Interpret the results of different investigations related to critical diseases. B2-Collect clinical data Specially the art of history taking B3- Correlate signs of common and rare critical care and internal medicine disorders B4-Interpret CXR, ABGs within the contest of clinical evaluation
G- Professional and Practical Skills	C1. Perform the basic and modern medical skills in the area of internal medicine. C2. Describe diseases and anomalies based on anatomical data.

H- General and transferable Skills	d1. Communicate effectively by all types of effective communication. d2. Use information technology to serve the development of professional practice. d3. Assess the candidate himself and identify personal learning needs. d4. Use different sources to obtain information and knowledge d5. Assess the performance of others

7. Course Contents

Topic	Lecture hours/week	Practical/Clinical hours/week	Total No. of hours hours/week
Critical care **Sepsis and septic shock** **Infection In critical care** **Shock** **Nutrition In critical Care** **Electrolyte Balance**	4	2	6
Nephrology • Diagnosis and management of renal emergency such as hematuria proteinuria , anuria and urinary tract infections • Clinical picture ,diagnosis and management of nephritis and nephritic syndrome	4	2	6

• Diagnosis and management of patients presenting with acute and chronic renal failure			
Pulmonology • various clinical presentation and management of TB • Clinical picture and basic management of asthma and COPD • Pneumonia • Respiratory failure	4	2	6
Neurology * Clinical picture, investigation and management of CVS *clinical picture ,diagnosis and management of peripheral neuritis * clinical picture ,diagnosis and management of coma *Clinical picture ,diagnosis and management of coma *clinical picture , diagnosis and management of meningeal disorders CNS infection	4	1	3
Gastroenterology *****Clinical presentations, investigations and management of different hepatic conditions presented with elevated	4	-2	6

liver enzymes such as acute hepatitis chronic hepatitis, liver cirrhosis ,hepatic failure and hepatotoxicity particularly drug induced *Causes and management of vomiting ,diarrhea and gastrointestinal bleeding			
Endocrinology Clinical picture diagnosis and management of different endocrinal disorders	4	-2	6
Hematology Approach for anaemias Coagulopathy	4	2-	6
Reumatology SLE Scleroderma Rhumatoid Arthritis Vasculitis	4	2	4
Total	32	16	48
8. Teaching and Learning Methods	1 - Lectures. 2 - Practical lessons. 3- Assignments for the students to empower and assess the general and transferable skills		

9. Teaching and Learning Methods for students with limited Capacity	
10. Student Assessment	
A. Student Assessment Methods	1- Assignments for the students to empower and assess the general and transferable skills 2- Periodic written exam to assess Knowledge, understanding and Intellectual skills. 3- Periodic practical+ written examination to assess practical skills as well as Knowledge. 4- Final written exam to assess Knowledge, understanding and intellectual skills. 5- Final oral exam to assess understanding and intellectual skills. 6- Final practical exam to assess practical skills.
B. Assessment Schedule (Timing of Each Method of Assessment)	Assessment 1… Periodic 1… Week: 10-12 Assessment 2 … Assignment…. Week: 15-16 Assessment 3….periodic. 2…. Week …18-20 Assessment 2 …Final practical exam Week: 26 Assessment 3…. Final written exam. Week 26 Assessment 4…..Final oral exam Week….26
C. Weighting of Each Method of Assessment	Periodic Examinations 20 % including: Assignment: 5% Periodic 1: 5% Periodic. 2: 10%

	Final-term Examination 24 Oral Examination. 18 Practical Examination 18 _____ Total 60
A. Course Notes/handouts	Lecture notes prepared by staff members in the department.
B. Essential Books	Davidson Kumar
C. Recommended Text Books	Fundamental of critical care Harrison's text book, 17th edition. Cecil text book.
D. Periodicals, websites	Critical care society http://www.mediscape.com http://www.pubmed.com Egyptian J of internal medicine. AMJ of internal medicine.

Course coordinator:

Associate Prof. Mohammad Omar Abdel Aziz

Head of Department:
Prof. Yousef Ismail Mousa
Date of last update & approval by department Council:

March ,2023

نموذج رقم (١١)

جامعة/أكاديمية : المنيا

كلية / معهد: الطب

قسم:الباطنة العامة

مسمى المقرر	Course Specifications of Internal Medicine for first part of Master degree in **cardiology**
كود المقرر	CV200

A. Matrix of Coverage of Course ILOs By Contents

Contents (List of course topics)	Week No.	Intended Learning Outcomes (ILOs)			
		A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
		A	B	C	D
Critical care	1	1,2,3,4,5	1,2	1	1,3,5
nephrology	2	2,3	2	2	2,4
pulmonology	3	3,4.5	2,3	1,2	3,4
neurology	4	1,4.5	1,4	1,2	4,5
gastroenterology	5	2,4.5	1,2	1	1,2,5
Endocrinology	6	2,3	2	2	2,4

Hematology	**7**	**1,4.5**	**1,4**	**1,2**	**4,5**
Rheumatology	**8**	**2,4.5**	**1,2**	**1**	**1,2,5**

B. Matrix of Coverage of Course ILOs by Methods of Teaching & Learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lecture	1,2,3,4,5	1,2,3,4,5		
Clinical (Including grand rounds)			1,2	3,4
Presentation/seminar	1,4	1,4	1,2	4,5
Journal club	2,4	1,2	1	1,2,5
Thesis discussion	4	4	1	1,3,5

Training courses & workshops	**3,4**	**1,4**	**1,2**	**2,4**

C. Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Written exam	1,2,3,4,5	1,2,3,4		
Clinical exam			1,2	
Oral Exam	12,3,4,5	1,2,3,4		

Blueprint of Internal Medicine for candidates of master degree in Cardiology (first part) examination paper (24 marks)

	Topic	Hours	Knowledge %	Intellectual %	% of topic	Knowledge mark	Intellectual Mark	Actual Mark
1	Critical care	6	75	25	15	3.4	1,1	**3.5**
2	Nephrology	6	75	25	15	3.4	1.1	**3.5**
3	Pulmonology	8	75	25	20	4.5	1.5	**5**
4	Gastroenterology	6	75	25	15	3.4	1,1	**3.5**
5	Endocrinology	8	75	25	20	4.5	1.5	**5**
6	Hematology	6	75	25	15	3.4	1,1	**3.5**
	Total	40			100%			**24**

منسق البلوك
العامة
ا.د/ يوسف إسماعيل موسي
موسي
د/ محمد عمر عبد العزيز

رئيس قسم الباطنة

ا.د/ يوسف إسماعيل

Course Specification of pathology
Master degree of cardiology (2022-2023)

University: Minia

Faculty: Medicine

Program on which the course is given: 1st Part of Master Degree in Cardiology
Major or minor element of program: General and Systemic Pathology
Department offering the program: Cardiology Department
Department offering the course: Pathology Department
Academic year / Level: First part

A. Basic Information		
4- Academic Year/level: Post graduate; 1st Part MSC, Cardiology	**5- Course Title**: Course Specification of pathology (Master degree of cardiology)	**6- Code**: CV200

7- Number of teaching hours: - **Lectures:** Total of 48 hours; 2 hour/week - **Practical/clinical:** 14 Total of hrs., 2 hours/week	
B- Professional Information	
1. Overall Aims of the course	*By the end of the course the student must be able to:* 1. Explain theories, basics & recent advances in the field of pathology. 2. Appraise & interpret relevant basic information and correlate them with essential clinical data to reach a final diagnosis 3. Plan for the development of acquisition of skills of basic & modern pathological laboratory techniques as well as principals of pathology. 4. Demonstrate competency on dealing with various biopsies and reporting pathological features and correlate such information with the relevant provided clinical data.
2. Intended learning outcomes of course (ILOs): ***Upon completion of the course, the student should be able to:***	
A- Knowledge and Understanding	A1. Define inflammation and mention its purpose, Causes, types of inflammation, describe pathogenesis of acute inflammation,Types of acute inflammation, and pathology of each type.

	A2- Define the term chronic inflammation and mention its characteristics and causes. Mention the types of chronic inflammation and their pathologic features. A3-Define repair and its types. Mention the factors that affect wound healing. Enumerate pathological processes where repair. Describe the phases of wound healing List the mechanisms that control repair, and complications of wound healing. A4-List causes and mechanisms of cell injury and its effects. A5- Identify types of cellular accumulations and their causes, mechanisms and describe the gross and microscopic features of different types. A6- Define necrosis; describe pathological changes in tissues affected with necrosis, mention types of necrosis and its fate. Define the term apoptosis, enumerate conditions where it occurs and morphological changes associated with it. A7. Describe heamodynamic disorders as thrombosis, embolism ischaemia, infarction, heamorrhage, gangrene and edema and mention their causes and effects on different organs. A8. Describe different forms of bacterial infections as bacteremia, septicemia, toxemia and pyemia. Mention their causes and effects on different organs. A9. Recognize adaptations of cellular growth and differentiation. Define each term with examples. Distinguish between the disorders of differentiation of the cells (dysplasia and metaplasia) A10. Define neoplasia and Describe the different points related to neoplasia regarding its definition, characters and

	behaviour of tumour, classifications to benign and malignant epithelial tumours, benign and malignant connective tissue tumours, grading and staging of cancer, the spread of tumours, prognosis of tumours and its effects on the host. A11- Describe the histological classification of the most common neoplasm, their features and examples for benign and malignant tumors. Identify various types of benign and malignant tumours, both by histopathological and by gross picture examination in the museum. A12- Describe the pathology of Rheumatic Fever ,Rheumatic Heart Disease, Heart Failure, Cardiac Hypertrophy And Dilatation. Identify various types of congenital heart disease. A13- Recognize Ischemic Heart Disease (IHD), Myocardial Infarction (MI) and Hypertensive Heart Disease. identifies different types of Endocarditis, recognize valvular diseases and Deformities. A14- Describe pathological changes of Myocardial Disease, Pericardial Disease and identifies Tumors of Heart A15- Describe pathological changes of arteriosclerosis, Aneurysms. identifies types of phlebothrombosis and thrombophlebitis. Recognize different types of tumours and tumour-like lesion affecting blood vessels. A16- Identifies types pediatric lung diseases, recognize collapse, describe pathological changes of pneumonias And lung abscess. A17- Identifies types of chronic obstructive pulmonary disease, Including Emphysem, Bronchial asthma, Bronchiectasis. Describe different types of tumours affecting lungs.

B- Intellectual Skills	B1- Predict the signs and symptoms of a disease based on the underlying gross& microscopic tissue changes B2- Interpret a pathology report and integrate gross and microscopic findings with the underlying etiology B3- Utilize the obtained information to solve a problem in a case scenario to reach a provisional diagnosis
C- Professional and Practical Skills	C1. Dealing with and reporting gross features of different surgical specimens in view of adopted standards as well as quality & safety procedures. C2. Ensure proper preservation of surgical specimens and biopsies and select the suitable preservatives with stickiness to quality & safety procedures. C3. Apply relevant issues related to safety and ensure keeping available resources while dealing with biopsies and surgical specimens and all essential materials and equipment.
D- General and transferable Skills	D1. Demonstrate efficient communication & interpersonal skills in all its forms and in different situations that may involve senior staff, colleagues, students, lab technical staff, other health care professionals, and patients D.2. Use efficiently the information technology and select reliable sources of information to get essential information and updates regarding the different topics and techniques in surgical pathology. D.3. Develop skills of self-evaluation and identify personal learning needs to plan for self-development and continuous medical education

	D.4. Demonstrate the skills of effective time management

3- Course Contents

Topic (General And Systemic Pathology)	Lecture hours/week	Practical hours/week	Total No. of hours hours/week
1. acute and chronic Inflammation	8	2	6
2. Repair	4	-	2
3. Cell injury and cell death	6	2	5
4. Circulatory disturbances	6	2	5
5- Acute Bacterial infection	4	2	4
6- Neoplasia	6	2	5
7- Cardiovascular diseases	8	2	6
8- Respiratory system diseases	6	2	5
Total	48	14	62

4- Teaching and Learning Methods	4.1 . Lectures: Both face to face & on-line ones. 4.2. Practical lessons: Gross pathology and histopathology 4.3. Self-directed learning (SDL) 4.4. Journal club, Case presentation, Seminars.
5- Teaching and Learning Methods to students with limited Capacity	(Not applicable)
6- Student Assessment	
A. Student Assessment Methods	**<u>TENDANCE CRITERIA</u>**: by Faculty laws (log book) **<u>ASSESSMENT TOOLS:</u>** **Assessment 1: written exam** by the end of course. short essay to asses knowledge and understanding problem solving to asses intellectual skills MCQ to assess knowledge and intellectual skills **Assessment 2: practical exam** to assess ability of the candidate for applying information studied in the course in diagnosis **.** **Assessment 3 : Oral exam,** after the written exam. to asses knowledge and understanding. Also intellectual skills, attitude, and communication
B. Assessment Schedule	• Final Written exam • Practical Exam • Oral exam

C. Weighting of Assessment	**Written** examination (24 mark) **Practical** examination (18 mark) **Oral** examination. (18 mark) **Total** (60 mark)
7- List of References	
A. Course Notes/handouts	1- General pathology course notes prepared by the department staff 2.Lectures' Handouts & printed material of recorded ones.
B. Essential Books (text books)	1-Goldblum, John R., et al. Rosai and Ackerman's Surgical Pathology E-Book. Elsevier Health Sciences .(٢٠١٧) 2-Kumar, V., Abbas, A. K., & Aster, J. C. Robbins basic pathology e-book. Elsevier Health Sciences٢٠١٧)).
C. Recommended Books	1-Liang Jing & David Bostwick. Essentials of anatomic pathology.(٢٠١١) 2-Diana W Molavi. The practice of surgical pathology; A beginners guide to the diagnostic process.(٢٠٠٨)
D. Periodicals	To be determined and updated during the course 1-American Journal of pathology 2-The Journal of pathology 3-Diagnostic Histopathology 4-Cancer
E. Web sites	1-www.pubmed.com 2-www.pathmax.com
8- Facilities required for teaching and learning	Classrooms for theoretical lectures and tutorials

Course Coordinator: Dr. Rabab Ahmed Safwat

Head of Department:

Prof. Dr. Heba Mohamed Tawfik

Course Specification of pathology **Master degree of cardilology** **(First part)**	**مسمى المقرر**
CV200	**كود المقرر**

جامعة/أكاديمية : .....المنيا.....

كلية / معهد: .....الطب البشرى.....

قسم: .....الباثولوجى.

A. The Matrix of Coverage of Course IL by Contents

Contents	**Intended Learning Outcomes (ILOs)**			
	A. Knowledge & Understanding	**B. Intellectual Skills**	**C. Professional & Practical skills**	**D. General & Transferable Skills**
acute and chronic Inflammation	**A1, A2**	**B1, B2, B3**	**C1**	**D1**
Repair	**A3**	**B1, B2, B3**	**C1, C3**	**-**
Cell injury and cell death	**A4, A5, A6**	**B1, B2**	**C1, C2**	**D1, D2**
Circulatory disturbances	**A7**	**B1, B2, B3**	**C1, C3**	**-**
AcuteBacterial infection	**A8**	**B1**	**C1**	**-**
Neoplasia	**A9, A10, A11**	**B1, B2, B3**	**C1, C2**	**D1**

cardiovascular diseases	**A12,13,14,15**	**B1, B2, B3**	**C1, C3**	**D2**
respiratory system diseases	**A16, A17**	**B1, B2, B3**	**C1, C2**	**D3**

B. Matrix of Coverage of Course ILOs by Methods of Teaching & Learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lecture	A1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17	B1,2,3	C1,2,3	D1,2,3,4
Practical	-	-	-	-
Clinical (Including grand rounds)	-	-	-	-
Presentation/seminar	A12,13,14,15,16,17	B1,2,3	C1	D1,2

Journal club	-	-	-	-
Thesis discussion	-	-	-	-
Training courses & workshops	**A1**	**B1-2-3**	**C1**	**D1,2**

C. Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Written exam	A1,2,3,4,4,5,6,7,8,9, 10,11,12,13,14,15,16 ,17	B1,2,3	-	-
Practical exam		-	C1, C2, C3	-
Clinical exam	-	-	-	-
Oral Exam	A1,2,3,4,4,5,6,7,8,9, 10,11,12,13,14,15,16 ,17	B1,2,3,4,5	-	-

Assignment	-	-	-	-
Structured oral exams	-	-	-	-

Blueprint of pathology exam paper (Cardiology department)

Blueprint of cardiology postgraduates Examination Paper

(24 Marks)

	Topic	Hours	Knowledge %	Intellectual%	% of topic	N of items Per topic	Knowledge		Intellectual		Actual Mark
							N of items	mark	N of items	Mark	
1	**Acute and chronic Inflammation**	4	70	30	**16.6**	6	4	**3**	2	1	**3**
2	**Repair**	2	75	25	**8.3**	3	2	**1**	1	1	**2**
3	**Cell injury and cell death**	3	75	25	**12.5**	5	3	**2**	2	1	**3**

4	**Circulatory disturbances**	3	70	30	**12.5**	4	3	**3**	1	1	**3**
5	**Acute bacterial infection**	2	75	25	**8.3**	4	3	**2**	1	-	**2**
6	**Neoplasia**	3	75	25	**12.5**	5	3	**2**	2	1	**3**
7	**Cardiovascular diseases, blood vessels**	4	75	25	**16.6**	8	6	**4**	2	2	4
8	**Respiratory system diseases**	3	80	20	**12.5**	8	6	**4**	2	2	4
	Total	**24**			**100%**			**21**		**9**	24

Faculty of Medicine
كلية الطب

Medical Biochemistry course specification for master degree in cardiology (First part)

University: *Minia*
Faculty: *Medicine*
Department: Medical Biochemistry
Last date of approval 3\2023

11.Course Information		
Academic Year/level: First Part of Master Degree	**Course Title**: First Part of Master Degree in cardiology	**Code**: CV 200
Number of teaching hours: **Lectures: 30 hours; 1.5 hours/week**		
.Overall Aims of the course	***By the end of the course the student must be able to:*** 1. Provide the postgraduate student with the medical Knowledge and skills essential for the practice of specialty and necessary to gain. 2-Understand all molecular basics and diseases. 3-Know different molecular techniques and their advanced applications. 4-Better understand and use the research tools including internet and differentlaboratory equipment. 5-Know retrieving the literature and understanding the evidence-basedmedicine 6-Maintain learning abilities necessary for continuous medical education. 7-Maintain research interest and abilities.	
.Intended learning outcomes of course (ILOs): ***Upon completion of the course, the student should be able to:***		

Knowledge and Understanding	The student finishes the course; he will be able to achieve the following objectives: A1. Illustrate various metabolic processes of carbohydrate, lipid and protein A2. Describe role of minerals and hormones and Vitamins in metabolism. A3. Define Various metabolic diseases and their diagnosis A4. List the role of enzymes in the chemical reactions in the body and its diagnostic importance. A5. Discuss types of gene therapy and its therapeutic effect. A.6. Describe the metabolism of hemoglobin and nucleic acids. A.7- Explain xenobiotics and their detoxification. A8- Explain principles, methodologies, tools and ethics of scientific research.
Intellectual Skills	B1-Analysis different diseases to reach a final diagnosis. B2-Correlate the ability to solve problems associated with metabolic diseases. B3-Integrate metabolic pathways with diseases.
Professional and Practical Skills	After completing the course, the student should be able to C1. Organize groups, as a leader or as a colleague.

	C2. Practice willingly the presentation skills through the attendance and participation in scientific activities.
General and transferable Skills	After completing the course, the student should be able to D1. Be aware of the advanced biomedical information to remain current with advances in knowledge and practice (self-learning). D2. Prepare for medical progress by having advanced medical research studies

4- Course Contents

Topic	Lecture (hours)	Practical/Clinical (hours)	Total No. of hours
1. Carbohydrate Metabolism	4	---	4
2. Lipid metabolism	4	---	4
3. Protein metabolism	3	---	3
4. Purines and pyrimidine Metabolism	2	---	2

5. Enzymes	2	---	2
6. Minerals	4	---	4
7. Hormones	3	---	3
8. Vitamins	3	---	3
9. Xenobiotics	2	---	2
10. Gene Therapy	1	---	1
11. Hemoglobin metabolism	2	---	2
Total	**30**	**---**	**30**
5-Teaching and Learning Methods	1-Lectures & discussions. 2-Assignments 3-Attending and participating in scientific conferences and workshops to acquire the general and transferable skills needed		
6-Teaching and Learning Methods for students with limited Capacity	Additional lectures, adjusting time and place of lectures according to their schedule and capacity		
7- Student Assessment			

A-Student Assessment Methods	**1- Written exam** to assess the capability of the student for assimilation and application of the knowledge included in the course. **Oral exam** to assess the student intellectual and communication skills regarding basic knowledge and understanding of the course topics, and to help the teaching staff to evaluate the % of achievement of the intended learning outcomes of the course
B-Assessment Schedule (Timing of Each Method of Assessment)	***Assessment 1: one written exam*** *by the end of the course* ***Assessment 2: Oral exam,*** *after the written exam* **Formative only assessment:** log book.
C-Weighting of Each Method of Assessment	**Written examination:** 12 marks **Oral examination**: 18 marks **Total**: 30 marks
8- List of References	
A-Course Notes/handouts	Lectures notes are prepared in the form of a book authorized by the department.
B-Essential Books	-Harper's Biochemistry, Robert K. Murray, Daryl K. Granner, PeterA.Mayes, and VictorW. Rodwell (32th edition, 2022)
C- Recommended Text Books	Lubert Stryer, Biochemistry (9 th edition, 2019) Lehninger, Biochemistry (8th edition, 2021) Lippincott, Biochemistry (7th edition, 2017)

D-Periodicals, websites	To be determined and updated during the course work. **Websites:** 1-http://www.Medical Biochemistry.com. **Periodicals:** 1- International journal of biochemistry 2- Science Direct

Course Coordinator/s:

Dr. Heba Marey

Head of Department:

Prof. Dr. Salama Rabie Abd El Rahiem

Date of <u>last update</u> & approval by department Council: 3 / 2023

مسمى المقرر	جزء اول ماجستير امراض القلب والاوعية الدموية
كود المقرر	CV200

جامعة/أكاديمية : ..المنيا.....
كلية / معهد.....**:**الطب.....
قسم : **الكيمياء الحيويه**

A. Matrix of Coverage of Course ILOs By Contents

Contents **(List of course topics)**	**Week No.**	**Intended Learning Outcomes (ILOs)**			
		A. Knowledge & Understanding	**B. Intellectual Skills**	**C. Professional & Practical skills**	**D. General & Transferable Skills**
		A	**B**	**C**	**D**

1. Carbohydrate Metabolism	**1**	**A1 A3 A4**	**B3**	**C2**	
2. Lipid metabolism	**2**	**A1 A3 A4**	**B2 B3**	**C2**	
3. Protein metabolism	**3**	**A1 A3 A4**	**B1 B2 B3**	**C1 C2**	
4. Purines and pyrimidine metabolism	**4**	**A3 A6**	**B1**	**C1**	
5. Enzymes	**5**	**A4**	**B2**		
6. Minerals	**6**	**A2 A3**	**B1**	**C1**	
7. Hormones	**7**	**A2 A3**	**B3**	**C2**	
8. vitamins	**8**	**A2 A3**	**B1**	**C2**	
9. Xenobiotics	**9**	**A7**	**B1 B3**		
10.Gene Therapy	**10**	**A5**	**B3**	**C1**	

11.Hemoglobin metabolism	**11**	**A3 A6**	**B2**	**C2**	

B. Matrix of Coverage of Course ILOs by Methods of Teaching & Learning

Methods of Teaching & Learning	**Intended Learning Outcomes (ILOs)**			
	A. Knowledge & Understanding	**B. Intellectual Skills**	**C. Professional & Practical skills**	**D. General & Transferable Skills**
	A	**B**	**C**	**D**
Lecture	**A1 A2 A3 A4 A5 A6**	**B2 B3**		
Practical			**C1 C2**	D1
Presentation/seminar				**D1 D2**
Journal club				**D1 D2**
Training courses & workshops				**D1 D2**

C. Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Written exam	A1 A2 A3 A4 A5 A6 A7 A8	B1 B2 B3		
Oral Exam	A1 A2 A3 A4 A5 A6 A7	B2 B3		
Assignment				D1 D2
Other/s(Specify)		B1 B2	C2	D2

Blueprint of Medical Biochemistry Department

Blueprint of Examination Paper
(12 marks)

	Topic	Hours	Knowledge %	Intellectual %	% of topic	No of items per topic	Knowledge		ntellectual		Marks	Actual mark
							No of Items	*Mark*	*No of Items*	*Mark*		
1	**Carbohydrate Metabolism**	4	70	30	**13.3**	2	1	0.8	1	0.8	**1.6**	**1.5**
2	**Lipid metabolism**	4	70	30	**13.3**	2	1	0.8	1	0.8	**1.6**	**1.5**

3	**Protein metabolism**	3	70	30	**10**	2	1	0.6	1	0.6	**1.2**	**1**
4	**Purines and pyrimidine Metabolism**	2	75	25	**6.6**	2	1	0.4	1	0.4	**0.8**	**1**
5	**Enzymes**	2	75	25	**6.6**	2	1	0.4	1	0.4	**0.8**	**1**
6	**Minerals**	4	80	20	**13.5**	2	1	0.8	1	0.8	**1.6**	**1.5**
7	**Hormones**	3	75	25	**10**	1	1	0.6	1	0.6	**1.2**	**1**
8	**Vitamins**	3	75	25	**10**	2	1	0.6	1	0.6	**1.2**	**1**
9	**Xenobiotics**	2	75	25	**6.6**	2	1	0.4	1	0.4	**0.8**	**1**
10	**Gene Therapy**	1	80	20	**3.3**	2	1	0.2	1	0.2	**0.4**	**0.5**
11	**Hemoglobin metabolism**	2	80	20	**6.6**	2	1	0.4	1	.04	**0.8**	**1**
	Total	**30**			**100 %**						**12**	**12**

جامعة: المنيا
كلية : الطب البشري
قسم: الفسيولوجيا الطبية

Medical Physiology Course Specifications

For 1st Part Master (MSc) Degree in CARDIOLOGY

University: Minia
Faculty: Medicine
Faculty offering the program: Faculty of Medicine.
Department offering the course: Medical Physiology Department.
Program(s), on which the course in given: MSc Degree in **Cardiology**.
Major or minor element of program(s): Medical Physiology.
Academic year/level: 1st part **MSc** degree in **Cardiology**.
Date of specification approval: 2022-2023

Basic Information

Title: Physiology course specifications for 1st part **MSc** degree of **Cardiology**
Code: CV200 **Credit Hours:** Not applicable
Lectures: 2 hours / week
Tutorial/Practical: Not applicable

Professional information

1) OVERALL AIM OF COURSE:

The aim of the course is to provide the postgraduate students with knowledge about the physiological principles underlying **cardiovascular** diseases that aid in interpretation of symptoms, investigations and management.

INTENDED LEARNING OUTCOMES OF COURSE (ILOS)

A. Knowledge and Understanding:

By the end of the course, the student should be able to:

A1. Describe the Physiology of Blood:

1.1. General constituents of blood & their functions.

1.2. Clinical conditions resulting from abnormalities of blood components.

A2. Explain the Physiology of Autonomic Nervous System:

2.1. Distribution & functions of sympathetic and parasympathetic.

2.2. Chemical transmission in ANS.

A3. Describe the Physiology of Central Nervous System:

3.1. Pain sensation; types, effects and control mechanisms.

A4. Discuss the Physiology of Respiratory System:

4.1. Acid-base balance.

4.2. Control of respiration, Hypoxia & Cyanosis.

A5. Identify the Physiologic principles of Endocrine System:

5.1. Calcium homeostasis.

5.2. Glucose Homeostasis

A6. Discuss in details the Physiology of CVS (Specialty):

6.1. Electrophysiology of Cardiac Muscle & Origin of Heartbeat.

6.2. Cardiac Muscle Excitation-Contraction Coupling.
6.3. Conduction System in the Heart.
6.4. Cardiac cycle, ECG & Heart sounds.
6.5. Heart Rate & Cardiovascular Reflexes.
6.6. Cardiac Output & Cardiac Reserve.
6.7. Blood pressure, flow in arteries and arterioles, hemorrhage & Shock.
6.8. Capillary circulation,
6.9. Tissue fluid & Lymph.
6.10. Venous Circulation.
6.11. Coronary circulation.

A. Intellectual Skills:

By the end of the course, the student should be able to:

B1. Develop the skills for demonstrating different functions of the body systems related to Cardiology to diagnose deviation from normality as detected disease state.

B2. Assess the problems associated with different factors, which affect the normal function of different body systems related to Cardiology.

B. Practical Skills:

Practical hours: -

C. General and Transferable Skills:

By the end of the course, the student should be able to:

D1. Adopt the principles of lifelong learning.

D2. Prepare and present clearly and effectively a scientific topic in a tutorial, a staff meeting or the yearly scientific day.

D3. Work efficiently within a team, honor and respect his colleagues.

Curriculum structure & contents:

Topic:	**No. of Lectures**	**Total no. of hours**
1. Blood: • General constituents of blood & their functions. • Clinical conditions resulting from abnormalities of blood components.	**1**	**2**
2. Autonomic Nervous System: • Distribution & functions of sympathetic and parasympathetic. • Chemical transmission in ANS.	**1**	**2**
3. Central Nervous System: • Pain sensation.	**1**	**2**
4. Respiratory System: • Acid-base balance. • Control of respiration, hypoxia & cyanosis.	**2**	**4**
5. Endocrine System: • Calcium homeostasis. • Glucose Homeostasis.	**1**	**2**
6. Physiology of CVS (Specialty Topics): • Electrophysiology of Cardiac Muscle & Origin of Heartbeat. • Cardiac Muscle Excitation-Contraction Coupling. • Conduction System in the Heart. • Cardiac cycle, ECG & Heart sounds. • Heart Rate & Cardiovascular Reflexes. • Cardiac Output & Cardiac Reserve.	**6**	**12**

• Blood pressure, flow in arteries and arterioles, Haemorrhage & shock. • Capillary circulation, • Tissue fluid & Lymph. • Venous Circulation. • Coronary circulation.		

Total	**12**	**24**

TEACHING AND LEARNING METHODS:

1. Lectures (2hr/wk.) throughout the academic year interchangeable with recorded lectures.
2. Self-learning activities such as use of internet and multimedia.

STUDENT ASSESSMENT METHODS:

1. **Written exam** to assess the student's knowledge in the form of short essay questions and /or MCQs.
2. **Oral exam** to assess student's knowledge, intellectual and general skills as well as assessing the verbal communication abilities.
3. **Log book.**

Assessment Schedule:

- **Assessment 1:** Final written exam (1.5 hr).
- **Assessment 2:** Final oral exam.

Weighting of assessment:

- **Final written exam** **12** marks (40%)
- **Final oral exam** **18** marks (60%)
- **Total** **30 marks** (100%)

LIST OF REFERENCES:

1. **Department books and notes.**
   Prepared by Medical Physiology Department staff members, Faculty of Medicine, Minia University.
2. **Essential books (Text Books):**
   - Ganong review of medical physiology.
   - Guyton text book of medical physiology.
3. **Periodicals, Web sites… etc.**

FACILITIES REQUIRED FOR TEACHING AND LEARNING:

1. Classrooms with data show for lectures.
2. Computers and internet facilities.

Course Coordinator,

Prof. Dr. Hanaa Mohamed Ibrahim
Prof. of Medical Physiology
Faculty of Medicine, Minia University

Head of Department,

Prof. Dr. Merhan Mamdouh Ragy
Prof. & Head of Medical Physiology Department
Faculty of Medicine, Minia University

جامعة: المنيا
كلية: الطب البشري
قسم: الفسيولوجيا الطبية

Physiology course specifications for **1st Part MSc degree in Cardiology**	مسمى المقرر
CV200	كود المقرر

A. Matrix of Coverage of Course ILOs by Contents

Contents	Intended Learning Outcomes ILOs																								
	A. Knowledge & Understanding																				B. Intellectual skills		D. General & Transferable Skills		
	A 1.1	A 1.2	A 2.1	A 2.2	A 3.1	A 4.1	A 4.2	A 5.1	A 5.2	A 6.1	A 6.2	A 6.3	A 6.4	A 6.5	A 6.6	A 6.7	A 6.8	A 6.9	A 6.10	A 6.11	B 1	B 2	D 1	D 2	D 3
1. Physiology of Blood	X	X																			X	X	X	X	X
2. Autonomic Nervous System			X	X																	X	X	X	X	X
3. Central Nervous System					X																X	X	X	X	X
4. Respiratory System						X	X														X	X	X	X	X
5. Endocrine System								X	X												X	X	X	X	X
6. Physiology of CVS (Specialty)										X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

B. Matrix of Coverage of Course ILOs by Methods of Teaching & Learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lectures	X	X	-	X
Self-learning activities	X	X	-	X

C. Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Written exam	X	X	-	-
Oral Exam	X	X	-	X
Log Book	X	X	-	X

Head of Department,
Prof. Dr. Merhan Mamdouh Ragy
Prof. & Head of Medical Physiology Department
Faculty of Medicine, Minia University

Course Coordinator,
Prof.Dr. Hanaa Mohamed Ibrahim
Prof. of Medical Physiology
Faculty of Medicine, Minia University

Blueprint of Cardiology MSC Physiology Examination paper

Postgraduate Physiology Course for Master's degree (1st part) of Cardiology (Code: CV100) (12 marks marks)

Topic	Hours	Knowledge %	Intellectual %	Weight %	Total Marks	Actual Mark
ILOS A1 Physiology of Blood: General constituents of blood & their functions. Clinical conditions resulting from abnormalities of blood components	3	75	25	12,5%	1.9	2
ILOS A2 and A3 Physiology of Autonomic Nervous system and Central Nervous System (CNS): Distribution & functions of sympathetic and parasympathetic, Chemical transmission in ANS. Pain sensation; types, effects and control mechanisms.	4	75	25	16.6%	2.49	2
ILOS A4 the Physiology of Respiratory System: Acid-base balance. Control of respiration, Hypoxia & Cyanosis.	3	75	25	12.5%	1.9	1
ILOS A5 Physiologic principles of Endocrine System: Calcium homeostasis and Glucose Homeostasis	2	75	25	8.3%	1.24	1

ILOS A6 Physiology of CVS (Specialty): Electrophysiology of Cardiac Muscle & Origin of Heartbeat, Cardiac Muscle Excitation-Contraction Coupling, Conduction System in the Heart, Cardiac cycle, ECG & Heart sounds., Heart Rate & Cardiovascular Reflexes, Cardiac Output & Cardiac Reserve, Blood pressure, flow in arteries and arterioles, hemorrhage & Shock, Capillary circulation,Tissue fluid & Lymph, Venous Circulation, Coronary circulation.	12	75	25	50%	6	6
Total	24				12	12

Course Specification of Medical Ethics
Master degree of cardiology (2022-2023)

University: Minia

Faculty: Medicine

Program on which the course is given: Master degree of cardiology
Major or minor element of program: Medical ethics, ethics of medical research
Department offering the program: cardiology Department
Department offering the course: Forensic Medicine & Clinical Toxicology Department
Academic year / Level: First part

A. Basic Information		
8- Academic Year/level: Post graduate; 1st Part MSC, cardiology	**9- Course Title**: Course Specification of Medical Ethics (Master degree of cardiology)	**10- Code**:

11- Number of teaching hours: - **Lectures:** Total of 30 hours; 2 hour/week - **Practical:** Total of 15 hours; 1 hour/week	
B- Professional Information	
3. Overall Aims of the course	By the end of the course the student should be able to identify the value of studying and practicing medicine, the duties of doctors towards their patients, colleagues and community, the ethics in medical consultations among colleagues and also able to explain respect the patient's confidentiality and secrets, recognize the role of health care providers in the community and describe medical errors, negligence and legal issues, ethics of medical research especially on human beings and finally able to explain ethics and evidence based medicine
4. Intended learning outcomes of course (ILOs): ***Upon completion of the course, the student should be able to:***	
E- Knowledge and Understanding	**A.1**- Identify the basic concept of learning and practicing medicine from the religious and human point of view. **A.2-** Identify the very beneficial impressive history of medicine; ethics related. **A.3-** Classify the main principles of medical ethics. **A.4-** Recognize an integrated approach to deal with patients, their families, community and medical staff in an ethical, legal and human manner. **A.5-** Identify rules in low and regulations to deal with patients in practicing medicine.

	A.6- Explain the standard and accredited methods of clinical research especially on human beings.
F- Intellectual Skills	**B.1-** Design approach to patients in different situations; critical and noncritical ones. **B.2-** Develop adequate communication skills with patients, community and colleagues. **B3-** Conclude in medical researches on clear ethical basis. **B.4-** Use knowledge and learn according to standard basis worldwide. **B.5-** Apply and practice medicine according to concepts of evidence based medicine. **B.6-** Recognize common ethical dilemma and suggest a proper solution.
G- Professional and Practical Skills	**C.1-** Use a high professional approach with colleagues and patients. **C.2-** Modify steps of upgrading his/her educational, academic and clinical carriers. **C.3-** Use the standard guidelines in managing patients. **C.4-** Identify what is called as clinical governance and auditing his /her Performance.
H- General and transferable Skills	**D.1-** Identify how to respect his/herself and the profession. **D.2-** Develop adequate behavior and skill communications with community. **D.3-** Modify life and live like others sharing social and national affairs. **D.4-** Develop the capacity of helping people and share in upgrading their culture and education. **D.5-** Identify how to participate in the national and social affairs and responsibilities.

3- Course Content

TOPIC	Lecture Hours	Practical Hours	Total hours
Medical Responsibility and Duties of the physician	2	1	3
Medicolegal aspect of cloning	2	1	3
Defensive Medicine	2	1	3
Diagnosis of death & Death Certificates	2	1	3
Consent in medical field	2	1	3
Medical malpractice	2	1	3
Medical syndicate	2	1	3
Professional secrecy	2	1	3
Physician disciplinary proceeding	2	1	3
Domestic Violence	2	1	3
Euthanasia (Mercy death)	2	1	3
Ethics in medical research	2	1	3
Medical reports	2	1	3

Rules of using addictive drugs among physicians	2	1	3
Medical certificates	2	1	3
Total	(30 hr.) 2/W	(15 hr.) 1/W	(45 hr.) 3/W

9- Teaching and Learning Methods	4.1 - Straight lectures; power point presentations 4.2 - Practical lessons 4.3 - Brain storming with the students 4.4 - Questions and Answers
10- Teaching and Learning Methods to students with limited Capacity	(Not applicable)
11- Student Assessment	
D. Student Assessment Methods	**<u>TENDANCE CRITERIA</u>**: by Faculty laws (log book) **<u>ASSESSMENT TOOLS:</u>** *Final Written exam: short essay to asses knowledge and understanding. problem solving to assess intellectual skills MCQ to assess knowledge and intellectual skills. *Oral exam; to asses knowledge and understanding. Also intellectual skills, attitude, and communication. *Practical exam: to assess practical and professional skills.
E. Assessment Schedule	• Final Written exam week: 24-28 • Oral exam week: 24-28 • Practical exam week: 24-28
F. Weighting of Assessment	• Final Written exam 40% (40 Marks) • Oral & Practical exams 60% (60 Marks) • Total 100% (100 Marks)
12- List of References	

F. Course Notes/handouts	Department book by staff members. Log Book.
G. Essential Books (text books)	Medical Ethics Manual, 2nd Edition John R. Williams, 2009. Medical Ethics, 2nd Edition, Michael Boylan, 2014.
H. Recommended Books	Text book of medical ethics, Erich H. Loewy, 1989
I. Periodicals	Journal of Medical Ethics Journal of Medical Ethics and History of Medicine
J. Web sites	https://en.wikipedia.org/wiki/Medical_ethics https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5074007/
13- Facilities required for teaching and learning	Classrooms for theoretical lectures and tutorials

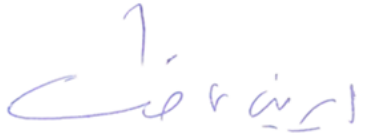
Course Coordinators:

Prof. Dr. Morid Malak Hanna

Dr. Mennatallah Mahmoud Ahmed

Head of Department:

Prof. Dr. Irene Atef Fawzy



Date of last update & approval by department council: 5/3/2023

Course Specification of Medical Ethics **Master degree of cardiology** **(First part))**	**مسمى المقرر**
	كود المقرر

جامعة/أكاديمية : .....المنيا.....

كلية / معهد: .....الطب البشرى.....

قسم: .....الطب الشرعى والسموم الأكلينكية.....

D. The Matrix of Coverage of Course IL by Contents

Contents	**Intended Learning Outcomes (ILOs)**			
	A. Knowledge & understanding	**B. Intellectual Skills**	**C. Professional & Practical skills**	**D. General & Transferable Skills**
	A	**B**	**C**	**D**
Medical Responsibility and Duties of the physician	**A1,3**	**B4**	**C1**	**D1,2**
Medicolegal aspect of cloning	**A1,2**	**B3**	**-**	**-**

Defensive Medicine	**A4,5**	**B6**	**C3**	**D3**
Diagnosis of death & Death Certificates	**A1,2**	**B2**	**-**	**-**
Consent in medical field	**A2,5**	**-**	**-**	**-**
Medical malpractice	**A1,6**	**B5**	**C4**	**D5**
Medical syndicate	**A5,6**	**B3**	**-**	**-**
Professional secrecy	**A1,2,3**	**-**	**-**	**D4**
Physician disciplinary proceeding	**A2,4,5**	**B2**	**-**	**D1.2,3**
Domestic Violence	**A2,4,6**	**-**	**C2**	**-**
Euthanasia (Mercy death)	**A1,3,4**	**B1**	**-**	**-**
Ethics in medical research	**A1,2**	**-**	**-**	**-**
Medical reports	**A3,4**	**-**	**C1,2**	**D1.2**
Rules of using addictive drugs among physicians	**A1,4**	**B1,2**	**-**	**-**
Medical certificates	**A1,6**	**B3,5**	**C3**	**D1,4**

E. Matrix of Coverage of Course ILOs by Methods of Teaching & Learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lecture	A1,2,3,4,5,6	B1,2,3,4,5,6	-	-
Practical	-	-	C1,2,3,4	-
Presentation/seminar	-	-	-	D1,2,3,4,5
Journal club	-	-	-	-
Thesis discussion	-	-	-	-
Training courses & workshops	-	-	-	D1,2,3,4,5

F. Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Written exam	A1,2,3,4,4,5,6	B1,2,3,4,5	-	-
Practical exam	-	-	C1,2,3,4,5	-
Oral Exam	A1,2,3,4,4,5,6	B1,2,3,4,5	-	-

Blueprint of Forensic Medicine and Clinical Toxicology Department

Blueprint of 1st master of cardiology

Postgraduates" Medical Ethics Examination Paper (40 marks)

	Topic	Hours	Knowledge %	Intellectual %	% of topic	N of items Per topic	Knowledge		Intellectual		Marks	Actual Mark
							N of items	Mark	N of items	Mark		
1	**Medical Responsibility and Duties of the physician & Defensive Medicine**	4	75	25	**13.32**	1	1	**5.32**	1	**10**	**5.32**	**5**

2	**Medicolegal aspect of cloning**	2	75	25	**6.66**	1	1	**2.66**	---	**---**	**2.66**	**3**
3	**Diagnosis of death & Death Certificates**	2	75	25	**6.66**	1	1	**2.66**	---	**---**	**2.66**	**3**
4	**Consent in medical field & Medical malpractice**	4	70	30	**13.32**	1	1	**5.32**	1	**10**	**5.32**	**5**
5	**Medical syndicate &Professional secrecy**	4	75	25	**13.32**	1	1	**5.32**	---	**---**	**5.32**	**5**
6	**Physician disciplinary proceeding & Euthanasia (Mercy death)**	4	75	25	**13.32**	1	1	**5.32**	1	**10**	**5.32**	**5**
7	**Domestic Violence**	2	70	30	**6.66**	1	1	**2.66**	---	**---**	**2.66**	**3**
8	**Ethics in medical research**	2	80	20	**6.66**	1	1	**2.66**	---	**---**	**2.66**	**3**

9	**Medical reports & Medical certificates**	4		80	20	**13.32**	1	1	**5.42**	1	**10**	**5.42**	**5**
10	**Rules of using addictive drugs among physicians**	2		75	25	**6.76**	1	1	**2.66**	---	**---**	**2.66**	**3**
	Total	**30**				**100%**			**40**		**40**	**40**	**40**

Pharmacology course specification for master's degree in Cardiology (First part)

University: *Minia*

Faculty: *Medicine*

Department: Pharmacology

Last date of approval 3/2023

1. Basic Information

• **Academic Year/level:** First Part of master's degree	• **Course Title**: First Part of master's degree in **Cardiology**	• **Code**:CV200
• **Number of teaching hours:** **Lectures: 26 hours; 2 hours/week** **Practical: 0**		
2. Overall Aims of the course	***By the end of the course the student must be able to:*** 1. Provide the postgraduate student with the medical Knowledge and skills essential for the practice of specialty and necessary to gain.	

	2-To understand all molecular basics and diseases. 3-To detect different molecular techniques and their advanced applications. 4-To better understand and use the research tools including internet and different laboratory equipment. 5-To know retrieving the literature and understanding the evidence-based medicine 6-Maintain learning abilities necessary for continuous medical education. 7-Maintain research interest and abilities.

3. Intended learning outcomes of course (ILOs):

Upon completion of the course, the student should be able to:

A.Knowledge and Understanding	A1.Mention the basic biochemical and physiological activities, their disturbances and how to be corrected. A2.Recall general pharmacodynamics as well specific properties of different groups of drugs that include the drug's mechanism of action and pharmacological effects. A3. List pharmacotherapeutics which reflects the role of drugs in prevention, diagnosis and treatment of diseases as well as prevention of infection. It includes also patho-pharmacology of diseases and drugs, indications, contraindications, adverse reactions and drug interactions specially in high risk groups (extremes of age, pregnancy and lactation, er kidney and cardiac diseases). Pharmaco-economics is included in this category. A4.Memorize Systemic pharmacology

	A5. List the principles of quality in professional practice the field of therapeutics and applied pharmacology.
A- Intellectual Skills	B.1 Selecting and use drugs safely and efficiently knowing their limits and the potential risks B.2 Solve medical problems arising from use of drugs and the development of resistance or tolerance encouraging them to search for alternative approaches after revising the diagnosis. B.3 Participate in clinical or laboratory risk management activities as a part of clinical governance. B.4 Present and defend his/her data in front of a panel of experts. B.5 Formulate management plans and alternative decisions in different situations in the field of Pharmacology. B.6. Assess risk in research and experimentation using new drugs and/or chemicals. B.7. Plan for the development of performance in the field of therapeutics and pharmacological researches. B.8. Assess different clinical problems and formulate pharmacological researches to solve such problems. B.9. Combine knowledge for Professional problems' solving.

B- Professional and Practical Skills	By the end of the study of master program in **Pharmacology** the candidate should be able to: C.1 Evaluate the need of his/her career to join the major advances in drug information C.2 Perform the basic lab skills essential to the course. C.3 Develop plans for performing experiments related to pharmacology. C.4 Use information technology in some of the pharmacology related situations. C.5 Band better understanding of the normal structure and function.

C- General and transferable Skills	After completing the course, the student should be able to D1- Perform practice-based improvement activities using a systemic methodology (share in audits and risk management activities and use logbooks). D3- Collect and verify data from different sources. D4- Analyze and interpret data. D5-Appraise evidence from scientific studies. D6- Use information technology to manage information, access on-line medical researches to support his/her own education.

4- Course Contents

Topic	Lecture hours/week	Practical/Clinical hours/week	Total No. of hours hours/week
Pharmacokinetic variables	3	-	3
Autonomic Pharmacology	2	-	2
Drug interaction and adverse drug reaction	6	-	6
Pharmacology of the cardiovascular system and Diuretics	2	-	2
Drugs affecting blood diseases	1	-	1
Corticosteroids	1	-	1
Nonsteroidal anti-inflammatory drug	1	-	1
Sedative hypnotic drugs	1	-	1
Chemotherapy	3	-	3

Pharmacology of the respiratory tract	2	-	2

Total	26		26
5-Teaching and Learning Methods	1-Lectures & discussions. 2-Assignments 3-Attending and participating in scientific conferences and workshops to acquire the general and transferable skills needed		
6-Teaching and Learning Methods for students with limited Capacity	Additional lectures, adjusting time and place of lectures according to their schedule and capacity		
7- Student Assessment			
A-Student Assessment Methods	**1- Written exam** to assess the capability of the student for assimilation and application of the knowledge included in the course. **2-Oral exam** to assess the student intellectual and communication skills regarding basic knowledge and understanding of the course topics, and to help the teaching staff to evaluate the % of achievement of the intended learning outcomes of the course **3- Practical exam** to assess the student's ability to identify different methods of identification of different drug actions and interactions.		
B-Assessment Schedule (Timing of Each Method of Assessment)	***Assessment 1: one written exam*** *by the end of the course* **Assessment 2:** ***Oral exam,*** *after the written exam*		

	Assessment 3: ***Practical exam*** **Formative only assessment:** log book.
8-Weighting of Each Method of Assessment	**Written examination: 24 marks 40%** **Oral and practical examination: 36 marks 60%** **Total: 60 marks 100%**
9- List of References	
A. Course Notes/handouts	Lecture notes prepared by the staff members in the department.
B. Essential Books	- Principles of pharmacology the pathophysiologic basis of drug therapy
C. Recommended Text Books	- Goodman & Gilman - Katzung
D. Periodicals, websites	Pharmacological Reviews - Journal of Pharmacology and Experimental therapeutics - British journal of pharmacology - European journal of pharmacology - Pharmacological research http://www.ncbi.nlm.nih.gov/pubmed/

Course Coordinator/s:

Dr. Ass. Prof. Dr. Seham Abdelwakeel

Head of Department:

Professor Dr. Mohamed Abdellah Ibrahim

Date of last update & approval by department Council:

1 / 2023

مسمى المقرر	جزء اول ماجستير القلب
كود المقرر	CV200

جامعة \ اكاديمية: المنيا

كلية: الطب قسم : الفارماكولوجى

A. Matrix of Coverage of Course ILOs By Contents

Contents (List of course topics)	Week No.	Intended Learning Outcomes (ILOs)			
		A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
		A	B	C	D
Pharmacokinetic variables	1,2	+	+		
Autonomic Pharmacology	3	+	+	+	

Drug interaction and adverse drug reaction	**4**	+	+	+	
Pharmacology of the cardiovascular system and Diuretics	**5,6**	+	+	+	+
Drugs affecting blood diseases	**7**	+	+		
Corticosteroids	**8**	+	+	+	
Nonsteroidal anti-inflammatory drug	**9**	+	+	+	
Sedative hypnotic drugs	**10**	+	+	+	+
Chemotherapy	**11,12,13**	+	+	+	+
Pharmacology of the respiratory tract	**14**	+	+	+	+

B. Matrix of Coverage of Course ILOs by Methods of Teaching & Learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lecture	x	x		
Practical				
Presentation/seminar	x	x	x	
Journal club				
Thesis discussion				
Training courses & workshops		x	x	x
Other/s (Specify)				

C. Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Written exam	X	X	X	
Oral Exam	X	X		X
Assignment	X		X	X

Blueprint of Cardiology MSC (Pharmacology Examination Paper)

24 Mark

	Topics	HOURS	Knowledge %	Intellectual %	% of topics	Mark	Actual mark
1	Pharmacokinetic variables	3	100	0	11.5	2.76	2.5
2	Autonomic Pharmacology	3	70	30	11.5	2.76	3
3	Drug interaction and adverse drug reaction	2	70	30	7.69	1.84	2
4	Pharmacology of the cardiovascular system and Diuretics	3	70	30	11.5	2.76	3
5	Drugs affecting blood diseases	2	70	30	7.69	1.84	2

6	Corticosteroids	1	80	20	3.84	0.92	1
7	Nonsteroidal anti-inflammatory drug	2	70	30	7.69	1.84	1.5
8	Sedative hypnotic drugs	2	80	20	7.69	1.84	1.5
9	Chemotherapy	6	60	40	23.07	5.5	5.5
10	Pharmacology of the respiratory tract	2	75	25	7.69	1.84	2
	Total	**26**			**100%**		**24**