Faculty of Medicine

# Master (MSC) Degree Program and Courses Specifications for Radio diagnosis

## A. Basic Information:

1. **Program title:** Master's (MSc) degree of radio-diagnosis (RD200)
2. **Final award:** Master's degree (MSc) in Radio-diagnosis.
3. **Program type:** single (√) double, multiple
4. **Responsible department:** Department of Diagnostic Radiology.
5. **Departments involved in the program:** Department of Diagnostic Radiology. public health and preventive medicine department, Forensic medicine and toxicology department, pathology, Internal medicine and General surgery.
6. **Program duration: 2 years (6 months for the first part and 18 months for the second part).**
7. **Number of program courses:** 10
8. **Program Academic Director (Head of the Department):**
   **Prof. Nadia F. El-Amin.**
9. **Coordinator (s):**
   **-Principle coordinator:** Prof. Ahmed El Gebaly
   **-Assistant coordinator (s):** Dr. Mohamed A. Amin, MD

10. **Internal evaluators:** Prof. Dr. Hosny Saied Abdel Ghani
11. **External evaluator:** Prof. Dr. Samy Abdel Aziz Saied

# B- Professional information:

## 1. Program aims:

**Graduate of Master Degree in Radio-diagnosis, the candidate should be able to:**

- The aim of this program is to provide the post-graduate student with the essential and basic knowledge and skills needed for the standard daily practice of Diagnostic Radiology. The program also assists the candidate to learn basic skills to be a scholar, understanding and applying basics, methods and tools of scientific research and clinical audit in Diagnostic Radiology.

## 2. Intended Learning Outcomes (ILOs):

### a) Knowledge and understanding:

a.1) Identify the basic epidemiological and clinical sciences (like pathology, internal medicine and general surgery) that are related to the field of radio-diagnosis.

a.2) Define good clinical care in Diagnostic Radiology and the welfare of Society.

a.3) List recent developments in common problems related to Diagnostic Radiology.

a.4) Identify ethical and medicolegal principles relevant to practice in the Diagnostic Radiology.

a.5) Recognize quality assurance principles related to the good medical practice in Diagnostic Radiology.

a.6) Outline ethical and scientific basics of medical research.

a.7) Identify physics of different imaging modalities (X-ray, U/S, CT, and MRI)

a.8) Recognize basic techniques of different radiological examination.

a.9) Outline different types of contrast media used in different contrast imaging studies and relevant patient care.

a.10) Identify positioning of the patient for different radiological examinations.

a.11) Recognize radiological exposures, film processing, film storage, and new digital imaging systems.

a.12) Memorize radiological anatomy and cross sectional anatomy of different system of the body (e.g. brain, spine, abdomen, chest).

a.13) Define radiobiology of ionizing radiation, list its biological hazards and methods of protection and safety.

a.14) List basic information of nuclear medicine

a.15) Identify imaging features and diagnosis of the CNS diseases (Neuroradiology)

a.16) Identify imaging of the head and neck diseases

a.17) Recognize diagnostic imaging features of different chest diseases

a.18) Outline basics of Cardiac imaging

a.19) List imaging features of different urogenital tract diseases

a.20) Identify imaging features of Muscloskeletal diseases

a.21) Recognize imaging features of different vascular diseases.

a.22) Outline methods abdominal imaging and the specific features of different diseases

a.23) Outline Women imaging techniques and diagnostic criteria of different pathologies

a.24) Recognize recent advances in radiological imaging (e.g. Functional imaging, MDCT)

a.25) List the principles of ethics and legal aspects of professional practice in the Diagnostic Radiology.

a.26) Identify the principles of quality assurance of professional practice in the field of Diagnostic Radiology.

a.27) Discuss the effect of professional practice on the environment and the methods of environmental development and maintenance.

a.28) Outline basics and ethics of scientific research.

**(b) Intellectual skills:**

***By the end of the MSc of Radio-diagnosis, the candidate should be able to:***

b.1) Analyze and evaluate the different issues of Diagnostic Radiology and use them for problem solving and management of common problems of Diagnostic Radiology.

b.2) Solve problems even in the absence of some input data.

b.3) Design a systematic approach in studying clinical problems relevant to Diagnostic Radiology.

b.4) Construct a clear and concise research study and/or scientific dissertation about specific problems in the field of Diagnostic Radiology.

b.5) Evaluate dangers in the practice in Diagnostic Radiology.

b.6) Plan to develop practice in specialty of Diagnostic Radiology.

b.7) Conclude decisions relevant to improve practice in Diagnostic Radiology.

b.8) Correlate the radiological images (CT, MRI) with patient medical history to reach the most possible diagnosis.

b.9) Interpret efficiently different radiological studies like X-ray, CT and MRI films.

b.10) Construct a list of differential diagnosis and the most possible diagnosis of different systemic diseases from the imaging studies.

b.11) Relate the possible hazards related to different radiological procedures including ionizing radiation exposure and use of radiological contrast materials.

b.12) Select the appropriate research methodology to carryout scientific thesis in the field of radio-diagnosis.

b.13) Design and write scientific papers about common clinical problems relevant to the field Radio-diagnosis.

b.14) Construct management plans and arrange scientific seminars and workshops aiming at the development of performance and working environment in the field of radio-diagnosis.

**(c) Professional and practical skills:**

***By the end of the study of MSc of Radio-diagnosis, the candidate should be able to:***

c.1) Perform an appropriate patient care that is compassionate and effective for the treatment of health problems and the promotion of health.

c2.) Write professional radiological reports.

c.3) Perform the techniques of different imaging modalities.

c.4) Report the X-ray, CT and MRI films.

c.5) Tailor the imaging modalities according to the patient complain and clinical condition.

c.6) Efficiently deal with emergency and acute clinical condition such as trauma, acute abdomen and stroke by providing the time saving and non-invasive imaging modalities such as MDCT, for rapid and safe patient management and decreasing the incidence of disabilities.

c.7) Apply proper safety measures and infection control protocols in dealing with different radiological devices for their safety and maintenance.

**(d) General and transferable skills**

***By the end of the study of MSc Radio-diagnosis, the candidate should be able to:***

d.1) Communicate respectfully and ethically with patients and be able to take brief history, explain the indications, benefits and possible risks of the needed radiological study.

d.2) Work efficiently in a multi-disciplinary team and show enough awareness and responsibility for leadership in different clinical contexts.

d.3) Make use of information technology (IT) and PACs system to access, share, and interpret medical images with the patient and for consultation with other healthcare professionals.

d.4) Practice habits of continuous medical learning like reading scientific papers and journals, attending scientific meetings, E-learning lectures and seminars.

d.5) Demonstrate the skill to utilize different sources to get information.

d.6) Put rules and regulations for the evaluation of other professional individuals.

d.7) Manage time effectively and be able to meet the demands of clinical practice and research and be able to prioritize set goals and meet deadlines.

d.8) Critically evaluate weakness points and be committed to self-improvement and staying up-to-date with the latest developments in the field of Radio-diagnosis.

d.9) Demonstrate the ability for the continuous search and application of evidence based medicine.

# 3. Program Academic Reference Standards:

**3. a.** Faculty of Medicine, Minia university 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 program and approved in faculty council decree No. 7528, in its cession No.191 dated: 15/3/2010. **{Annex 1}.**

**- Then** Faculty of Medicine, Minia university **update** the academic standards (ARS) for master program and approved in faculty council decree No. 7528, in its cession No.191 dated 20/2/2023

**3. b.** Radio-diagnosis department has adopted these standards and developed master (MSc) program in radio-diagnosis and date of program specification 1st approval by department council : 15/3/2010 , then the programme was update in 7/3/2023 **{Annex 2}.**

# 4. Program structure and content:

**4. a. Program duration**: (minimum 2 years).

**4. b. Program courses:**

| | **Total hour** | | |
|---|---|---|---|
| **Subject** | **Lectures hours/ week** | **Practical/clinical hours/week** | **Total hours/week** |
| **First part** | | | |
| **1-Radio-biology** | **2** | **--** | **2** |
| **2-Basics of Nuclear Medicine** | **2** | **--** | **2** |
| **3-Radiological Physics:**<br>- X-ray Production, Machines and Protection<br>- CT.<br>- Ultra-sound.<br>- MRI. | **2** | **--** | **2** |
| **4-Radiology (Radiological anatomy and techniques)** | **6** | **6** | **12** |
| **5- Medical Statistics and research methodology.** | **2** | **--** | **2** |
| **6- Medical ethics** | **2** | **1** | **3** |
| **Total** | **16** | **7** | **20** |
| **Second part** | | | |
| **7-Internal Medicine** | **2** | **2** | **4** |
| **8-General Surgery** | **2** | **2** | **4** |
| **9-Pathology** | **2** | **--** | **2** |
| **10-Radio-diagnosis** | **20** | **30** | **50** |
| **Total** | **38** | **34** | **60** |

**4. c. Levels of program in credit hours system:** Not applicable

**4. d. Program courses (curriculum):**

| Course Title | Total No. of hours | No. of hours /week | | | Program ILOs Covered |
|---|---|---|---|---|---|
| | | Lect. | Practical | | |
| **FIRST PART (Level of course):** | | | | | |
| **1-Radiobiology** | **2** | **2** | **--** | | a.13 to a.14, b.2, b3, b5, b11, c.3, c4, d.1, d.2 |
| **2-Basics of Nuclear Medicine** | 2 | 2 | -- | | a.13, a.14<br>b.2, b3, b5, b11<br>c.3, c.4, d.1, d.2 |
| **3-Radiological physics** | 2 | 2 | -- | | a.1, a.7, a.8, a.11, b.22, b.3, b.5, c.3, c.4, d.1, d.2 |
| **4- Medical statistics and research methodology** | 2 | 2 | -- | | a.1, a.2, a.4, a.6, a.27, a.28, b.1, b.2, b.4, b.12, b.13, d.2,d.3, d.5, d9 |
| **5-Radiology (Radiological anatomy and techniques)** | 12 | 6 | 6 | | a.8 to a.12, b.1, b.2, b.3, c.2, c.3, c.4, c.5, d.2, d.3, d.4 |
| **6- Medical ethics** | 3 | 2 | 1 | | a.1, a.2, a.4, a.6, a.27, a.28, b.1, b.2, b.4, b.12, b.13, d.2,d.3, d.5, d9 |
| Training programs and workshops, field visits, seminars& other scientific activities | Continuous | | | | A.1, a.2, a.3, a.8 to a.12, b.1, b.2, b.3,b.6, c.2, c.3, c.4, c.5, d.2, d.4, d.5, d.7, d.8 |
| **SECOND PART (Level of course):** | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **7- Internal Medicine** | | 4 | **2** | 2 | | a.1, a.2, b.1 to b.3, b.7, b.8, c.1, d.1, d.2 |
| **8- General surgery** | | 4 | 2 | 2 | | a.1, a.2, b.1 to b.3, b.7, b.8, c.1, d.1, d.2 |
| **9- Pathology** | | 2 | 2 | -- | | a.1, a.2, b.1 to b.3, b.7, b.8, c.1, d.1, d.2 |
| **10- Radio-diagnosis** | | 50 | 20 | 30 | | a1, a.2, a.4, a.5, a.8, a.9, a.10, a.15 to a.28, b.1, b.2, b.3, b.5, b.6, b.7, b8, b9, b.10, b.11, b.14 |
| Training programs and workshops, field visits, seminars& other scientific activities | | Continuous | | | | a1, a.2, a.4, a.5, a.8, a.9, a.10, a.15 to a.28, b.1, b.2, b.3, b.5, b.6, b.7, b8, b9, b.10, b.11, b.14 |

## 5. program admission requirements:

**General Requirements:**

**A**-Candidates should have either:

1. MBBCH degree from any Egyptian faculty of medicine or

2. Equivalent degree from medical schools abroad approved by the Ministry of Higher education.

B- Candidate should complete the house officer training year.

C- Those who are not university hospital resident should pass training for at least 12 months in one of known hospitals.

D- Follows postgraduate regulatory rules of postgraduate studies of Minia Faculty of medicine.

**Specific Requirements:**

1- Candidates graduated from Egyptian Universities should have at least "Good Rank" in their final year examination and grade "Good Rank" in total.
2- Candidate should know how to speak & write English well (passing the university TOEFL test).
3- Candidate should have computer skills and ICDL certificate.

**7- <u>Regulations for progression and program completion</u>**

Duration of program is minimum 2 years starting from registration till acceptance of the thesis; divided to:

**<u>First Part</u>:** (≥6 months):

• All courses as specified in the internal bylaw

•At least six months after registration should pass before the student can ask for examination in the 1st part.

•Two sets of exams: 1st in May — 2nd in October.

• For the student to pass the first part exam, a score of at least 60% in each curriculum is needed. Those who fail in one curriculum need to re-exam it only.

• Registration of the scientific research after acceptance of Radio-diagnosis department and faculty councils and the vice dean of post graduate studies of the university.

**<u>Second Part</u>:** (≥18 months):

• Program related specialized Courses.

• At least 18 months after passing the 1st part should pass before the student can ask for examination in the 2nd part.

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

For both parts, fulfillment of the of log book (Attendance, effective discussion in seminars, performance in practical work of the department and other activities).

**<u>Scientific research (Thesis)</u>**

**- Discussion of the research done and accepted one month at least before the**

**exam of the second part. The thesis should be accepted from the discussion committee, Radio-diagnosis department and faculty councils and vice dean of postgraduate studies of the university. Accepting the thesis occurs after publishing one thesis – based paper in local or international journal and this is enough to pass this part.**

**8-Teaching and learning methods:**

1- ٤ hours of lectures per week throughout the course.

2-2hours of practical training and demonstration weekly throughout the course.

3-Self training activities such as use of internet and multimedia.

4- Regular weekly seminars, presentations and assignments.

5-Training courses & workshops.

6-Thesis discussion.

7-Conference attendance

| 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) | 1,2,3,4,5,6,7,8,9,10,11,12,13, 14,15,16,17,18,19,20,21,22, 23,24,25,26,27,28. | 1,2,3,5,7,10 | | |
| Clinical and practical | | | 1,2,3,4,5,6,7 | |
| Presentation/seminar | | | 1,2,3,4,5,6,7 | 2,4,5,6,7,8,9 |
| Journal club | | | | 2,4,5,6,7,8,9 |

| | | | | |
|---|---|---|---|---|
| Training courses and workshops | | | | 1,2,3,5 |

## 9- 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<br><br>- Short essay<br>- MCQs<br>- Complete<br>- True or false and correct the wrong<br>- Commentary<br>- Problem solving | 1,2,3,4,5,6,7,8,9,10,11,12,13,<br><br>14,15,16,17,18,19,20,21,<br><br>22,23,24,25,26,27,28. | 1,2,3,5,7,10 | - | - |
| CLINICAL EXAM:<br><br>- Long case.<br>- Short case.<br>- OSCE.<br>- CIVA. | 8,9,10,11,12 | 1,2,3, | 1,2,3,49,10,11,12 | - |
| ORAL<br><br>EXAM | 1,2,3,4,6,7,8,9,10,11,12,13,<br><br>14,15,16,17,18,19,20,21,22,23 | 1,2,3,8,9,10 | | |
| LOG BOOK | 13,14,15,16,17,18,19,20,21,22,23 | - | 1,2,3 | 1,2,3,4,5,6,7,8,9,10,11 |

**Weighing of assessment:**

**It is mandatory to pass all the papers of written exams separately**:

| Course | Written | Oral | Practical | Total |
|---|---|---|---|---|
| **1st part** | | | | |
| **Radiobiology** | 10 | 10 | 10 | 30 |
| **Basics of Nuclear Medicine** | 10 | 10 | 10 | 30 |
| **Radiological Physics** | 40 | 30 | 30 | 100 |
| **Radiology (Radiological anatomy and techniques)** | 40 | 30 | 30 | 100 |
| **Medical Statistics and research methodology** | 20 | 20 | - | 40 |
| **Medical ethics** | 40 | 30 | 30 | 100 |
| **2nd part** | | | | |
| **Internal Medicine** | 30 | - | 40 | 70 |
| **General Surgery** | 30 | | 40 | 70 |
| **Pathology** | 30 | | 40 | 70 |
| **Radio-diagnosis** | First paper 95<br>Second paper 95 | 150 | 150 | 490 |

**Head of the Radio-diagnosis department:**

**Prof. Dr. Nadia F. El-Amin**

**Signature:**

**Annex I: Comparison between National Academic Quality Assurance & Accreditation (NAQAAE) General Academic Reference Standards (GARS) and Faculty Academic Reference Standards (ARS)**

| **NAQAAE**<br>برامج الماجستير | **Faculty**<br>**Master (MSC) Program** |
|---|---|
| ١. مواصفات الخريج:<br>خريج برنامج الماجستير في أي تخصص يجب أن يكون قادرا على: | **1. Graduate Attributes:**<br>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<br>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:<br><br>**NAQAAE General Academic Reference Standards "GARS" for Master Programs** | **2. Faculty Academic Reference Standards (ARS) for Master Program** |
| ٢,١. المعرفة والفهم:<br><br>بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا علي الفهم والدراية بكل من: | **2.1. Knowledge & Understanding:**<br><br>Upon completion of **the Master Program in**……., 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:**<br>بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على: | **2.2. Intellectual Skills:**<br>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 |
| 2.2.3 الربط 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:**<br>بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على: | **3.2. Professional Skills:**<br>Upon completion of the master program of……, 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 :**<br>بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على: | 4.2. **General and transferable skills**<br>Upon completion of the master program of……, 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. |

**ANNEX [2]**

**Matrix Between National Academic Quality Assurance & Accreditation (NAQAAE) General Academic Reference Standards (GARS) and Faculty Academic Reference Standards (ARS), and Program ILOs**

| المعايير القياسية العامة:<br>**NAQAAE General Academic Reference Standards "GARS" for Master Programs** | **Faculty Academic Reference Standards (ARS) for Master Program** | **Radio-diagnosis MSc program ILOs** |
|---|---|---|
| ٢,١. المعرفة والفهم:<br>بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا علي الفهم والدراية بكل من: | **2.1. Knowledge & Understanding:**<br>Upon completion of **the Master Program in** internal Medicine the graduate should have sufficient knowledge and understanding of: | **A. Knowledge And Understanding (A)** |
| 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 | a.1) Identify the basic epidemiological and clinical sciences (like pathology, internal medicine and general surgery) that are related to the field of radio-diagnosis.<br>a.7) Identify physics of different imaging modalities (X-ray, U/S, CT, and MRI)<br>a.8) Recognize basic techniques of different radiological examination.<br>a.9) Outline different types of contrast media used in different contrast imaging studies and relevant patient care.<br>a.10) Identify positioning of the patient for different radiological examinations. |

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| | | a.11) Recognize radiological exposures, film processing, film storage, and new digital imaging systems.<br><br>a.12) Memorize radiological anatomy and cross sectional anatomy of different system of the body (e.g. brain, spine, abdomen, chest)<br><br>a.13) Define radiobiology of ionizing radiation, list its biological hazards and methods of protection and safety.<br><br>a.14) List basic information of nuclear medicine<br><br>a.15) Identify imaging features and diagnosis of the CNS diseases (Neuroradiology)<br><br>a.16) Identify imaging of the head and neck diseases<br><br>a.17) Recognize diagnostic imaging features of different chest diseases<br><br>a.18) Outline basics of Cardiac imaging<br><br>a.19) List imaging features of different urogenital tract diseases<br><br>a.20) Identify imaging features of Muscloskeletal diseases<br><br>a.21) Recognize imaging features of different vascular diseases.<br><br>a.22) Outline methods abdominal imaging and the specific features of different diseases<br><br>a.23) Outline Women imaging techniques and diagnostic criteria of different pathologies<br><br>a.24) Recognize recent advances in radiological imaging (e.g. Functional imaging, MDCT) |

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| 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. | a.2) Define good clinical care in Diagnostic Radiology and the welfare of Society.<br><br>a.27) Discuss the effect of professional practice on the environment and the methods of environmental development and maintenance. |
| ٢,١,٣. التطورات العلمية في مجال التخصص | 2.1.3. Scientific developments in the field of specialization | a.3) List recent developments in common problems related to Diagnostic Radiology.<br><br>a.24) Recognize recent technologies in radiological imaging (e.g. Functional imaging, MDCT) |
| 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 | a.4) Identify ethical and medico-legal principles relevant to practice in the Diagnostic Radiology. |
| ٢,١,٥. مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص | 2.1.5. Quality principles in the scholarly field | a.5) Recognize quality assurance principles related to the good medical practice in Diagnostic Radiology.<br><br>a.26) Identify the principles of quality assurance of professional practice in the field of Diagnostic Radiology. |
| ٢,١,٦. أساسيات وأخلاقيات البحث العلمي | 2.1.6. Basis of research methodology and medical ethics. | a.6) Outline ethical and scientific basics of medical research. |
| 2.2.المهارات الذهنية:<br>بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على: | **2.2. Intellectual Skills:**<br><br>Upon completion of the master program of, the graduate should be able to: | **B. Intellectual Skills** |
| 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 | b.1) Analyze and evaluate the different issues of Diagnostic Radiology and use them for problem solving and |

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| | | management of common problems of Diagnostic Radiology.<br><br>b.2) Solve problems even in the absence of some input data.<br><br>b.9) Interpret efficiently different radiological studies like X-ray, CT and MRI films.<br><br>b.10) Construct a list of differential diagnosis and the most possible diagnosis of different systemic diseases from the imaging studies. |
| 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 | b.8) Correlate the radiological images (CT, MRI) with patient medical history, investigations and clinical examination results to reach the most possible diagnosis.<br><br>b.3) Design a systematic approach in studying clinical problems relevant to Diagnostic Radiology. |
| 2.2.3 الربط 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. | b.12) Select the appropriate research methodology to carryout scientific thesis in the field of radio-diagnosis.<br><br>b.13) Design and write scientific papers about common clinical problems relevant to the field Radio-diagnosis. |
| 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 | b.4) Construct a clear and concise research study and/or scientific dissertation about specific problems in the field of Diagnostic Radiology. |
| 2.2.5. تقييم المخاطر في الممارسات المهنية في مجال التخصص | 2.2.5. Be aware of risk management principles, and patient safety. | b.5) Evaluate dangers and risks in the practice in Diagnostic Radiology and identify possible management plans. |

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| | | b.11) Relate the possible hazards related to different radiological procedures including ionizing radiation exposure and use of radiological contrast materials. |
| 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 | b.6) Plan to develop practice in specialty of Diagnostic Radiology.<br>b.7) Conclude decisions relevant to improve practice in Diagnostic Radiology.<br>b.14) Construct management plans and arrange scientific seminars and workshops aiming at the development of performance and working environment in the field of radio-diagnosis. |
| 2.2.7. اتخاذ القرارات المهنية في سياقات مهنية متنوعة. | 2.2.7. Take professional situational decisions and logically support them. | b.7) Conclude decisions relevant to improve practice in Diagnostic Radiology. |
| **3.2.** المهارات المهنية:<br>بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على: | **3.2. Professional Skills:**<br>Upon completion of the master program of……, the graduate must be able to: | **Professional Skills (C)** |
| 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. | c.3) Perform the techniques of different imaging modalities.<br>c.5) Tailor the imaging modalities according to the patient complain and clinical condition.<br>c.6) Efficiently deal with emergency and acute clinical condition such as trauma, acute abdomen and stroke by providing the time saving and non- |

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| | | invasive imaging modalities such as MDCT, for rapid and safe patient management and decreasing the incidence of disabilities.<br><br>c.1) Perform an appropriate patient care that is compassionate and effective for the treatment of health problems and the promotion of health. |
| ٣,٢,٢كتابة و تقييم التقارير المهني. | 3.2.2. Write and evaluate medical or scientific reports | c2.) Write professional radiological reports.<br><br>c.4) Report the X-ray, CT and MRI films. |
| ٢,٣,٣تقييم الطرق والأدوات القائمة في مجال التخصص | 3.2.3. Assess and evaluate technical tools during research | c.7) Apply proper safety measures and infection control protocols in dealing with different radiological tools and devices for their safety and maintenance for the continuity of medical research services. |
| **4.2.**المهارات العامة والمنتقلة **:**<br><br>بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على: | 4.2. **General and transferable skills**<br><br>Upon completion of the master program of……, the graduate should be able to: | **General and Transferrable Skills.**<br><br>**(D)** |
| ٤,٢,١. التواصل الفعال بأنواعه المختلفة | 4.2.1. Communicate effectively using a written medical record, electronic medical record, or other digital technology. | d.1) Communicate respectfully and ethically with patients and be able to take brief history, explain the indications, benefits and possible risks of the needed radiological study. |
| 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 | d.3) Make use of information technology (IT) and PACs system to access, share, and interpret medical images with the patient and for |

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| | electronic data) in the field of medical practice. | consultation with other healthcare professionals. |
| 4.2.**3**. لتقييم الذاتي وتحديد احتياجاته التعلمية الشخصية | 4.2.3. Assess himself and identify personal learning needs | d.8) Critically evaluate weakness points and be committed to self-improvement and staying up-to-date with the latest developments in the field of Radio-diagnosis. |
| 4.2.**4**. استخدام المصادر المختلفة للحصول على المعلومات والمعارف | 4.2.4. Use various sources for information (physical and digital sources). | d.5) Demonstrate the skill to utilize different sources to get information. |
| 4.3.**5**. وضع قواعد ومؤشرات تقييم أداء الآخرين | 4.2.5. Setting indicators for evaluating the performance of others | d.6) Put rules and regulations for the evaluation of other professional individuals. |
| 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 | d.2) Work efficiently in a multi-disciplinary team and show enough awareness and responsibility for leadership in different clinical contexts. |
| 4.2.**7**. إدارة الوقت بكفاءة | 4.2.7. Manage time efficiently | d.7) Manage time effectively and be able to meet the demands of clinical practice and research and be able to prioritize set goals and meet deadlines. |
| ٤,٢,٨.التعلم الذاتي والمستمر | 4.2.8. Demonstrate skills of self-learning and lifelong learning needs of medical profession. | d.4) Practice habits of continuous medical learning like reading scientific papers and journals, attending scientific meetings, E-learning lectures and seminars.<br><br>d.9) Demonstrate the ability for the continuous search and application of evidence based medicine. |

# ANNEX [3]:

## 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) | 1,2,3,4,5,6,7,8,9,10,11,12,13, 14,15,16,17,18,19,20,21,22, 23,24,25,26,27,28. | 1,2,3,5,7,10 | | |
| Clinical and practical | | | 1,2,3,4,5,6,7 | |
| Presentation/seminar | | | 1,2,3,4,5,6,7 | 2,4,5,6,7,8,9 |
| Journal club | | | | 2,4,5,6,7,8,9 |
| Training courses and workshops | | | | 1,2,3,5 |

# ANNEX [4]

## 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**<br><br>**- Short essay**<br>**- MCQs**<br>**- Complete**<br>**- True or false and correct the wrong**<br>**- Commentary**<br>**- Problem solving** | **1,2,3,4,5,6,7,8,9,10,11,12,13,**<br>**14,15,16,17,18,19,20,21,**<br>**22,23,24,25,26,27,28.** | **1,2,3,5,7,10** | **-** | **-** |
| **CLINICAL EXAM:**<br><br>**- Long case.**<br>**- Short case.**<br>**- OSCE.**<br>**- CIVA.** | **8,9,10,11,12** | **1,2,3,** | **1,2,3,49,10,11,12** | **-** |
| **ORAL**<br><br>**EXAM** | **1,2,3,4,6,7,8,9,10,11,12,13,**<br>**14,15,16,17,18,19,20,21,22,23** | **1,2,3,8,9,10** | | |
| **LOG BOOK** | **13,14,15,16,17,18,19,20,21,22,23** | **-** | **1,2,3** | **1,2,3,4,5,6,7,8,9,10,11** |

# Annex 5

# Matrix of Coverage of MSC Program ILOs By Courses

| Courses (List of courses in 1st and 2nd parts) | Program Intended Learning Outcomes (ILOs) | | | |
|---|---|---|---|---|
| | A. Knowledge & Understanding | B. Intellectual Skills | C. Professional & Practical skills | D. General & Transferable Skills |
| | A | B | C | D |
| 1.Radiobiology | A13,A14 | B2 B3 B5, B11 | C3 to C4 | D1,D2 |
| 2.Basics of nuclear medicine | A13,A14 | B2 B3 B5, B11 | C3 to C4 | D1,D2 |
| 3.Radiological physics | A1, A7, A8 A11 | B2, B3&B5 | C3& C4 | D1&D2 |
| 4. Medical statistics and research methodology | A1,A2 ,A4 ,A6&A27 | B1,B2,B4,B12&B 13 | C1 | D2, D3, D5 & D9 |

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|---|---|---|---|---|
| **5. Radiology (radiological anatomy & techniques)** | **A8 to A12** | **B1,to B3** | **C2 to C5** | **D2 to D4** |
| **6- Medical ethics** | **A1,A2 ,A4 ,A6&A27** | **B1,B2,B4,B12&B 13** | **C1** | **D2, D3, D5 & D9** |
| **7- Internal medicine** | **A1& A2** | **B1 ,B2,B3,B7& B8** | **C1** | **D1&D2** |
| **8-General surgery** | **A1& A2** | **B1 ,B2,B3,B7& B8** | **C1** | **D1&D2** |
| **9-Pathology** | **A1& A2** | **B1 ,B2,B3,B7& B8** | **C1** | **D1&D2** |
| **10-Radiodiagnosis** | **A1 to A5, A8 to A10, A 15 to A 28** | **B1 to B3, B5 to B11 & B14** | **C 1 to C7 ,** | **D1 to D5 , from D7 to D 9** |

**Program Coordinator**

**Prof. Dr. Ahmed F. Elgebaly**

**Head of the Radio-diagnosis department:**

**Prof. Dr. Nadia F. El-Amin**

# 1-Radio-diagnosis course specifications for MSC Degree in Radio diagnosis

***Name of department: Radiology***

***Faculty of medicine***

***Minia University***

| | | |
|---|---|---|
| **1. Course Information** | | |
| • **Academic Year/level:** Radio diagnosis MSC. Second Master | • **Course Title:** Radio diagnosis MSc: | • **Code: Rad 100** |
| • **Number of teaching hours:**<br>- **Lectures:** 6 hours/week<br>- **Practical/clinical:** 6 hours/week | | |
| **2. Overall Aims of the course** | 1.Understand the indications for examinations and familiarity with the principles and limitation of studies, including benefit and risk to the patient.<br>2. Understand the technical principles of US, CT and MRI and develop skill in protocol-ling, monitoring and interpreting cross-sectional imaging examination.<br>3 Gain a general understanding of both the clinical uses and limitations of ultrasound as well as the appropriate integration of other complementary cross-sectional imaging studies particularly CT and MRI.<br>4. Understand the role that ultrasound plays in the management of patient's illness and make proper recommendations when needed. | |

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| **3. Intended learning outcomes of course (ILOs):**<br>***Upon completion of the course, the student should be able to:*** | |
| **A- Knowledge and Understanding** | A 1. Describe accurately imaging findings in different diseases of the pharynx and esophagus:<br>-Benign disease:<br>-Functional swallow and motility disorders.<br>-Pouch, webs and diverticula.<br>-Inflammatory/ infectious disorders.<br>-Tumors.<br>A 2. Mention different imaging findings in stomach lesions:<br>-Peptic ulcer disease.<br>-Gastritis.<br>-Tumors.<br>-Post operative stomach and duodenum.<br>-Learns imaging findings in small bowel lesions:<br>A 3. Identify different hepatic lesions:<br>-Focal liver disease.<br>-Diffuse liver disease.<br>-Trauma.<br>-Infection.<br>A 4. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to the Gastrointestinal disease |
| **B- Intellectual Skills** | B.1. Correlates the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common conditions related to Gasterointestinal tract system<br>B.2. correlate different imaging modalities Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Gasterointestinal tract system.<br>B 3. Design and /or present a case or review (through seminars/journal clubs.) in one or more of common clinical problems relevant to the field of Gasterointestinal tract system.<br>B 4. Formulate management plans and alternative decisions in different situations in the field of the Gasterointestinal tract system. |

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| **C- Professional and Practical Skills** | C 1 .Perform different imaging techniques<br>-CT examination:<br>-US examination.<br>c.2 Use adequate knowledge in application of the protocols of the others different imaging modalities:<br>-CT examination:<br>-Procedure: preparation.<br>-Oral contrast agent.<br>-CT enema examination.<br>-IV contrast agent.<br>C.3. Perform noninvasive and invasive therapeutic procedures and participate with senior staff in performance of percutaneous trans-hepatic cholangiography:<br>-External biliary drainage.<br>-Trans-tubal cholangiography.<br>C 4. Design outpatient diagnostic plans for common gastrointestinal problems.<br>C.5. Use information technology to support patient care decisions and patient education<br>C 6. Communicate with health care professionals, including those from other disciplines, to provide patient-focused care for Gastrointestinal diseases<br>. | |
| **D- General and transferable Skills** | By the end of the study of master program, the graduate should be able to:<br>D.1.. Perform practice-based improvement activities using a systematic methodology (share in audit and risk management activities and use logbook)..<br>D. 2. Perform data management including data entry and analysis using information technology to manage information, access on-line medical information; and support their own education<br>D 3. Use epidemiological Studies and surveys<br>D. 4. Work in a team, and team's leadership in various professional contexts.<br>D5. I. Work effectively with others as a member of a health care team or other professional group. | |
| **1. Course Contents** | No of Hours | Covered ILOS |

| Topic | Lecture | clinical | Total | Knowledge( A) | Intellectual skills (B) | Clinical and practical skills (C) | General and transferrable skills (D) |
|---|---|---|---|---|---|---|---|
| **Gastrointestinal tract**<br>- Imaging findings in different diseases of the pharynx and esophagus.<br>- Different imaging findings in stomach lesions<br>- Different hepatic lesions.<br>- systematic approach to pancreatic lesion.<br>- Supportive sciences related to the Gastrointestinal disease | 16 | 8 | 24 | A1, A3 & A6 | B1&2 | C1,C3 & C5 | D1 & D3 |
| **GENITOURINARY SYSTEM**<br>- Current and updated principles and patho-physiology of genitourinary diseases.<br>- Peri Congenital anomalies of GU tract pheral vascular imaging.<br>- Different types of renal, ureteric and urinary bladder and prostate neoplasm in different imaging modalities<br>- Interpretation and identification of the genitourinary diseases with imaging. | 20 | 10 | 30 | A1,2 | B1 | C1 & C2 | D1 |

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| - principals of imaging in GU trauma | | | | | | | |
| **NEURORADIOLOGY, HEAD AND NECK**.<br><br>- Abnormal findings in congenital malformation of the brain<br>- Systemic approach to tumors and tumor like conditions of the Brain.<br>- Systematic assessment and imaging findings of infection of Brain and its lining..<br>- Imaging findings of congenital anomalies of the spine and spinal cord Bone tumors.<br>- Intra-cranial hemorrhage and its imaging findings | 20 | 10 | 30 | A1-A5 | B1 & B2 | C2, C4 & C5 | D3, D4 & D5 |
| **ULTRASOUND**<br>- Principals of Ultra-sound.<br>- Doppler phenomenon and pulse echo-imaging<br>- Retro peritoneal masses.<br>- Normal basic cross-sectional ultrasound anatomy.<br>- Image processing and display.<br>- Imaging applications/ equipment operation<br>- Ultrasound artifacts | 20 | 10 | 30 | A2,A3 | B1 & B2 | C1 & C4 | D1 & D4 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| - sciences related to Ultrasound | | | | | | | |
| **MUSCLOSKELETAL SYSTEM**<br>Systematic approach to common dysplasia and congenital conditions<br>Current and updated principles of bony lesions<br>Systematic approach to articular disease<br>Soft tissue lesions.<br>Radiological findings and classification of infectious lesions<br>Radiological findings of hematopoietic and storage disease. | 20 | 10 | 30 | A1&A4 | B1 | C2 & C4 | D 1-5 |
| **Female Imaging**<br>- Interpretation of breast US, mammography and MRI<br>- Imaging of Female pelvic tumors<br>- Imaging of Female pelvic inflammatory and infective disease.<br>- Imaging of congenital anomalies of the female congenital system. | 12 | 6 | 18 | A1-A5 | B1 | C4 & C5 | D 1-3 |
| **Pediatric Imaging**<br>- Chest diseases in neonates and children.<br>- Abdominal diseases in neonates and children. | 16 | 8 | 24 | A1 to A3 | B1 | C1 | D1&D2 |

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| - Musculo-skeletal diseases and child abuse.<br>- CNS diseases in neonates and children.<br>Genito-urinary diseases in neonates and children | | | | | | | |
| **Head and neck Imaging**<br>- Tumoral & non-tumoral Orbital lesions.<br>- Laryngeal carcinoma.<br>- parapharyngeal lesions.<br>- Petrous pathological lesions.<br>- Paranasal sinuses pathological lesions.<br>Thyroid and para-thyroid nuclear studies. | 6 | 3 | 9 | A2&A3 | B1&B2 | C1&C2 | D1 |
| **Spine Imaging**<br>- Interpretation of spine imaging.<br>- Degenerative & traumatic and infectious lesions of the spine<br>- Spinal cord tumors & non tumoral lesion. | 6 | 3 | 9 | A1&A2 | B1 | C1 | D2 |

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|---|---|---|
| **4. Teaching and Learning Methods** | *a. Academic Lectures.*<br>*b. Seminars.*<br>*c. Film Reading sessions.* | *j.* |

| | | |
|---|---|---|
| | *d. Case presentations.*<br>*e. Refresher Teaching Courses.*<br>*f. Journal Reading Club.*<br>*g. National and Local conference attendance.*<br>*h. Thesis defense attendance.*<br>i. *Workshop attendance.* | |
| **5. Teaching and Learning Methods for students with limited Capacity** | Extra lectures, seminars, tutorials according to their needs. | |
| **6. Student Assessment** | | |
| **A. Student Assessment Methods** | 1- Written examination<br>2- Oral examination<br>3- Practical Exam<br>4- Log book | |
| **B. Weighting of Each Method of Assessment** | **1- Written examination 190**<br>**2- Oral examination assessment 150**<br>**3- Practical 150**<br>**Total %490** | |

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|---|---|---|
| **7. List of References** | | |
| **A. Course Notes/handouts** | None | |
| **B. Essential Books** | 8.2.1. Text book of Radiology and Imaging (David Sutton).<br>8.2.2. Fundamentals of Diagnostic Radiolog | |
| **C. Recommended Text Books** | 8.3.1. Diagnostic Imaging in CNS (Ann Osborne). | |

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|---|---|---|
| | 8.3.2. Diagnostic Imaging in Head and Neck (Harnesberger).<br>8.3.3. Musculoskeletal MRI (Kaplan).<br>8.3.4. CT and MRI of the whole body (Hag<br>8.3.5. Case Review Series.<br>8.3.6. Radiology Review Manual (Dahnert). | |
| **D. Periodicals, websites** | 8.4.1. www.rsna.org (Radiology &Radiographics).<br>8.4.2. www.ajronline.com (American Journa of Radiology).<br>8.4.3. www.ajnr.org (American Journal of Neuro-radiology).<br>8.4.4. www.esr.com (European Society and journal of Radiology). | |

**Course Coordinator: Prof. Dr. Osama A.W.Khalil.**

**Ass lecturer: Ahmed Shaban, Mery Mohsen**

- **Head of the Department: Prof. Dr. Nadia F. Al-Amin**
- **Date of specification approval**: **3/2023**

## A. Matrix of coverage of course ILOS by the course contents

| Course Contents | Covered ILOS | | | |
|---|---|---|---|---|
| **Topic** | **Knowledge &understanding (A)** | **Intellectual skills (B)** | **Clinical and practical skills (C)** | **General and transferrable skills (D)** |
| **Chest Imaging**<br>- Chest tumors.<br>- Traumatic chest lesions.<br>- Occupational diseases.<br>- Mediastinal lesions.<br>- Chest infections. COVID-19 infection<br>- High resolution CT.<br>- Vascular lesions of the chest | A1-6 | b.5,6,7,8 | C1-7 | D 1-7 |
| **Cardio-Vascular Imaging & Interventional Radiology**<br>- Abdominal vascular lesions.<br>- Peripheral vascular imaging.<br>- Hepatic & Peripheral vascular intervention<br>- MDCT Angiography (aortic, coronary, peripheral).<br>Doppler Ultrasound applications | A1, A2, A6 | b. 1-8 | C1,2,5 | D1,3,6 |
| **Bone & Musculoskeletal Imaging**<br>- Congenital bone diseases & dysplasia.<br>- Metabolic bone disease.<br>- Inflammatory and infective diseases.<br>- Shoulder, knee & hip joint lesions.<br>- Bone and joint infections | A1-6 | b.5, b.8 | C1,5,6 | D 1-7 |

| | | | | |
|---|---|---|---|---|
| - Bone tumors.<br>- **Bone scan** | | | | |
| **Abdomen Imaging**<br><br>- Adrenal gland lesions.<br>- Splenic lesions imaging & diagnosis<br>- Retro peritoneal masses.<br>- Bowel lesions imaging & diagnosis.<br>- Hepato-biliary and pancreatic pathological lesions.<br>- Vascular lesions of the abdomen<br>- MDCT Angiography (mesenteric).<br>- Whole body MDCT perfusion.<br>- Elastography (US and MRI).<br>Contrast enhanced US. | A1-6 | B. 1 to8 | C1-6 | D2,5,6,7 |
| **Urogenital Imaging**<br><br>- Congenital diseases of urinary system.<br>- Traumatic lesions of the urogenital system<br>- Inflammatory lesions of the urogenital system<br>- Cystic renal lesions.<br>- Obstructive uropathy<br>- Urinary tract tumors.<br>- Male genital system.<br>- Renal nuclear studies | A1, A3, A6 | B.1-8 | C1-7 | D 1-7 |
| **Female Imaging**<br><br>- Interpretation of breast US, mammography and MRI<br>- Imaging of Female pelvic tumors<br>- Imaging of Female pelvic inflammatory and infective disease. | A1-6 | B1, B5,B6,B 8 | C1-6 | D 1-7 |

| | | | | |
|---|---|---|---|---|
| - Imaging of congenital anomalies of the female congenital system. | | | | |
| **Pediatric Imaging**<br><br>- Chest diseases in neonates and children.<br>- Abdominal diseases in neonates and children.<br>- Musculo-skeletal diseases and child abuse.<br>- CNS diseases in neonates and children.<br>Genito-urinary diseases in neonates and children | A1-6 | B1,B8 | C1,4,5 | D1-7 |
| **Central nervous system Imaging**<br><br>- Congenital diseases of the brain.<br>- Metabolic brain diseases.<br>- Brain tumors differential diagnosis .<br>- Sellar&para-sellar lesions.<br>- Pineal body &cerebello-pontine angle lesions .<br>- CNS Infections.<br>- Demylenating diseases.<br>- Cerebro- vascular malformations of the brain.<br>- Phakomatosis.<br>- Hypothalamic lesions<br>- Functional MRI techniques: diffusion, perfusion, MR spectroscopy and fiber tractography, Dynamic contrast enhanced MRI (DCE). | A1-6 | B1-8 | C1-7 | D 1-7 |
| **Head and neck Imaging** | A1-6 | B1-8 | C1-7 | D4,7 |

| | | | | |
|---|---|---|---|---|
| - Tumoral & non-tumoral Orbital lesions.<br>- Laryngeal carcinoma.<br>- parapharyngeal lesions.<br>- Petrous pathological lesions.<br>- Paranasal sinuses pathological lesions.<br>Thyroid and para-thyroid nuclear studies. | | | | |
| **Spine Imaging**<br><br>- Interpretation of spine imaging.<br>- Degenerative & traumatic and infectious lesions of the spine<br>- Spinal cord tumors & non tumoral lesion. | A1, A6 | B.8 | C1,2,3,6 | D1,2,3 |

## B. Matrix of Coverage of Course ILOs by Methods of Teaching

| Methods of Teaching & Learning | Intended Learning Outcomes (ILOs) | | | |
|---|---|---|---|---|
| | **A. Knowledge & Understanding** | **B. Intellectual Skills** | **C. Professional & Practical skills** | **D. General & Transferable Skills** |
| **Lecture** | 1,2,3,4,5,6 | 1,2,3,5,6 | | |
| **Practical (case presentation, film reading sessions)** | | | 1 to 7 | |
| **Presentation/seminar** | | | | 1,2,3,4,7 |
| **Journal club** | | | | 1,2,3,5,6 |
| **Training courses & workshops** | 1,2,3,4,5,6 | 1,3,4,5,7,8 | 1,2,3,4,5,6,7 | 2,3,5,6,7 |

## 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** |
| **Written exam** | 1,2,3,4,5,6 | 1,2,3,4,5,6,7,8 | | |
| **Practical exam** | 1,2,3,5,6 | 2,4,5,6,8 | 1,3,4,5,7 | |
| **Oral Exam** | 1,2,3,4,5,6 | 1,5,6,8 | | 1,2,4,6,7 |
| **Log book** | 1,3,5,6 | 2,3,4,7,8 | 1,2,5,6,7 | 2,3,5,6,7 |

MINIA UNIVERSITY

# Blueprint of radiology exam paper (second master)

## Blueprint of radiology postgraduates Examination Paper

| | 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 | Central nervous system | 4 | 70 | 30 | **15.4** | 7 | 5 | **3** | 2 | 1 | **4** | **4** |
| 2 | Head and neck | 2 | 75 | 25 | **7.7** | 4 | 3 | **1** | 1 | 1 | **2** | **2** |
| 3 | Chest imaging | 2 | 75 | 25 | **7.7** | 5 | 3 | **2** | 2 | - | **2** | **2** |
| 4 | Abdomen imaging with emphasis on COVID 19 infection | 4 | 70 | 30 | **15.4** | 4 | 3 | **3** | 1 | 1 | **4** | **4** |
| 5 | Urogenital system | 4 | 80 | 20 | **15.4** | 6 | 5 | **3** | 1 | 2 | **5** | **5** |
| 6 | Musculoskeletal | 3 | 75 | 25 | **11.5** | 6 | 4 | **3** | 2 | 1 | **4** | 4 |
| 7 | Spine disease | 3 | 70 | 30 | **11.5** | 5 | 4 | **3** | 1 | 1 | **4** | 4 |
| 8 | Female imaging | 4 | 75 | 25 | **15.4** | 6 | 5 | **3** | 1 | 2 | **5** | 5 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Total** | | | | **100 %** | | | **21** | | 9 | **30** | 30 |

## 2-Radiobiology and Radiological Services course specifications for MSC Degree in Radio diagnosis

***Name of department: Radiology***

***Faculty of medicine***

***Minia University***

| | | |
|---|---|---|
| **2. Course Information** | | |
| • **Academic Year/level:** Radio diagnosis first part MSC. | • **Course Title:** Radiobiology and Radiological Services first part MSc | • **Code: Rad 100** |
| • **Number of teaching hours:**<br>- **Lectures:** 2 hours/week<br>- **Practical/clinical:** 1 hours/week | | |
| **3. Overall Aims of the course** | 1. Facilitate an in depth understanding of all imaging modalities and how they form high quality and clinically significant images.<br>2. Understand basic function in nuclear medicine including gamma camera, functional uses and gated principles.<br>3. Understand basic nuclear procedures and indications.<br>4. Learn the candidates that an atlas of cross sectional anatomy should be consulted when there is any doubt.<br>5. Understand the principles involving action of x-rays on film emulsion and intensifying screens, processing chemicals, the various systems and accessories involved in the conversion of latent | |

| | |
|---|---|
| | image into visible radiographic image following sequential steps in manual and automatic processing, processor operation and maintenance.<br>6. Learn the skills necessary to critique radiographic images with emphasis in recognizing processing faults with the aid of radiographs.<br>7. Make discussions include processing room design and accessories and regulatory requirements.<br>8. Understand and be thoroughly familiar with the clinical indications and limitations of the basic Nuclear Medicine imaging procedures including pulmonary, GI, osseous and CNS organs systems.<br>9. Understand the physical principles of Nuclear Medicine as regard to interaction of radio-pharmaceutical with physiology and interaction of gamma emissions with detector equipment. |
| **4. Intended learning outcomes of course (ILOs):**<br>***Upon completion of the course, the student should be able to:*** | |
| **A- Knowledge and Understanding** | A.1. Discuss the interaction of radiation with the matter:<br>- Charged particle interaction.<br>- Neutron interaction.<br>- Photon interaction.<br>- Photon attenuation.<br>A.2 Describe: Absorbed dose, equivalent dose & effective dose.<br>A.3 Define Generic image processing: pre-processing segmentation & gray scale processing.<br>A.4. Describe Fluoroscopy, Real time imaging& Image processing<br>A.5 Define basics about: Computed Tomography: image acquisition parameters, image formation., image characteristics and artifacts. & image processing and display.<br>A.6. Describe the Magnetic resonance imaging & image acquisition. |
| **B- Intellectual Skills** | B.1. Correlates the facts of Radiological services, radiobiology and use of isotope in diagnosis with clinical reasoning, diagnosis and management of common diseases related to Radio diagnosis. |

| | |
|---|---|
| | B.2. Interpret an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Radio diagnosis. |
| **C- Professional and Practical Skills** | C1. Practice the basic skills in the Radiological services, radiobiology and use of isotope in diagnosis<br>C2. Apply information technology to support decisions related to Radiological services, radiobiology and use of isotope in diagnosis related to Radio diagnosis.<br>C3. Prepare adequate knowledge about:<br>Radiobiology:<br>-Principles: relative biological effectiveness and linear energy transfer<br>-Molecular and cellular effects of radiation.<br>-System effects of radiation.<br>-Radiation syndromes, radiation induced cancers, teratogenesis and radiation risk..<br>C.4. Apply radiation protection:, sources of exposure to ionizing radiation, radiation detection equipment in radiation safety & radiation protection and exposure control.<br>C.5. Conduct adequate knowledge about nuclear medicine as regard:<br>-Computing, image processing, tracer principles and techniques.<br>-Kinetics of radioactive tracers used in nuclear medicine.<br>-Bone scan.<br>-Thyroid scan.<br>- Renal imaging. |
| **D- General and transferable Skills** | D. l. Perform practice-based improvement activities using a systematic methodology(audit, logbook)<br>D.2. Appraises evidence from scientific studies(journal club)<br>D.3. Conduct epidemiological Studies and surveys.<br>D.4. Perform data management including data entry and analysis.<br>D.5. Facilitate learning of junior students and other health care professionals. |

| **5. Course Contents** | **No of Hours** | | | **Covered ILOS** | | | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Lecture** | **Clinical** | **Total** | **Knowledge(A)** | **Intellectual skills (B)** | **Clinical and practical skills (C)** | **General and transferrable skills (D)** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| - **Interaction of radiation with the matter** | 8 | 4 | 12 | A1, A3 & A6 | B1&2 | C1,C3 & C5 | D1 & D3 |
| - **Describing effective dose** | 6 | 3 | 9 | A1,2 | B1 | C1 & C2 | D1 |
| - **General imaging processing** | 6 | 3 | 9 | A1-A5 | B1 & B2 | C2, C4 & C5 | D3, D4 & D5 |
| - **X-ray and Fluoroscopy** | 12 | 6 | 18 | A2,A3 | B1 & B2 | C1 & C4 | D1 & D4 |
| - **Computed tomography** | 8 | 4 | 12 | A1&A4 | B1 | C2 & C4 | D 1-5 |
| - **Magnetic resonance imaging** | 8 | 4 | 12 | A1-A5 | B1 | C4 & C5 | D 1-3 |

| | |
|---|---|
| **6. Teaching and Learning Methods** | *a. Academic Lectures.*<br>*b. Seminars.*<br>*c. Tutorials.*<br>*d. Observation.*<br>*e. Journal Reading Club.*<br>*f. National and Local conference attendance.*<br>g. *Written and oral communication* |
| **7. Teaching and Learning Methods for students with limited Capacity** | Extra lectures, seminars, tutorials according to their needs. |
| 8. **Student Assessment** | |
| **C. Student Assessment Methods** | 1- Written examination<br>2- Oral examination<br>3- Practical Exam |

| | |
|---|---|
| | 4- Log book |
| **D. Weighting of Each Method of Assessment** | **1. Written examination 10**<br>**2. Oral examination assessment 10**<br>**3. Practical 10**<br>**Total 30** |

| **9. List of References** | |
|---|---|
| **A. Course Notes/handouts** | - Lectures notes<br><br>- Staff members print out of lectures and/or CD copies |
| **B. Periodicals, websites** | - American journal of radiology.<br>- European journal of radiology.<br>- Radiology journal.<br>- Radiologic clinics of North America.<br>- Egyptian Journal of radiology. |

**Course Coordinator: Prof. Dr. Osama A.W.Khalil.**

**Ass lecturer: Ahmed Shaban, Mery Mohsen**

- **Head of the Department: Prof. Dr. Nadia F. Al-Amin**
- **Date of specification approval**: **3/2023**

## A- Matrix of coverage of course ILOS by the course contents

| Course Contents | Covered ILOS | | | |
|---|---|---|---|---|
| **Topic** | **Knowledge &understanding (A)** | **Intellectual skills (B)** | **Clinical and practical skills (C)** | **General and transferrable skills (D)** |
| - **Interaction of radiation with the matter** | A1-5 | B1&2 | C1,C3 & C5 | D1 & D3 |
| - **Describing effective dose** | A1, A3 & A4 | B1 | C1 & C2 | D1 |
| - **General imaging processing** | B1 & B2 | B1 & B2 | C2, C4 & C5 | D3, D4 & D5 |
| - **X-ray and Fluoroscopy** | A2-6 | B1 & B2 | C1 & C4 | D1 & D4 |
| - **Computed tomography** | A1 & A4 | B1 | C2 & C4 | D 1-5 |
| - **Magnetic resonance imaging** | A1, A3 & A6 | B1 | C4 & C5 | D 1-3 |

**B- Matrix of Coverage of Course ILOs by Methods of Teaching**

| Methods of Teaching & Learning | Intended Learning Outcomes (ILOs) | | | |
|---|---|---|---|---|
| | **A. Knowledge & Understanding** | **B. Intellectual Skills** | **C. Professional & Practical skills** | **D. General & Transferable Skills** |
| **Lectures** | A 1-6 | B1 | | D1 & D2 |
| **Seminars & Tutorials** | A1 | B1 & B2 | C1-4 | D2 |
| **Tutorials & conferences** | | | C3 & C5 | D1-5 |
| **Journal clubs** | A2 & A3 | | | D2 & D3 |

## 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** |
| **Written exam** | A1-6 | B1 & B2 | | |
| **Practical exam** | A1-4 | B1 & B2 | C1-5 | |
| **Oral Exam** | A1-6 | B1 & B2 | | D1-5 |
| **Log book** | A1 & A3 | | C1 & C2 | D2-5 |

**Blueprint of radiobiology exam paper (first master) (Radiology department)**

Blueprint of radiology postgraduates Examination Paper

| | 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** | Interaction of radiation with the matter | 4 | 70 | 30 | **15.4** | 7 | 5 | **3** | 2 | 1 | **4** | **10** |
| **2** | Describe effective dose | 2 | 75 | 25 | **7.7** | 4 | 3 | **1** | 1 | 1 | **2** | **10** |
| **3** | General image processing | 2 | 75 | 25 | **7.7** | 5 | 3 | **2** | 2 | - | **2** | **15** |
| **4** | Fluoroscopy and radiological imaging | 4 | 70 | 30 | **15.4** | 4 | 3 | **3** | 1 | 1 | **4** | **10** |
| **5** | Computed tomography | 4 | 80 | 20 | **15.4** | 6 | 5 | **3** | 1 | 2 | **5** | **10** |
| **6** | Magnetic resonance imaging | 3 | 75 | 25 | **11.5** | 6 | 4 | **3** | 2 | 1 | **4** | 15 |
| 7 | Interaction of | 3 | 70 | 30 | **11.5** | 5 | 4 | **3** | 1 | 1 | **4** | 15 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | radiation with the matter | | | | | | | | | | | |
| 8 | Describe effective dose | 4 | 75 | 25 | **15.4** | 6 | 5 | **3** | 1 | 2 | **5** | 15 |
| | General image processing | | | | **100 %** | | | **21** | | 9 | **30** | 30 |

# 4-Radiological Physics course specifications for MSC Degree in Radio diagnosis

***Name of department: Radiology***

***Faculty of medicine***

***Minia University***

| | | |
|---|---|---|
| **1. Course Information** | | |
| • **Academic Year/level:** Radio diagnosis first part MSC. | • **Course Title:** Radiological Physics first part MSc | • **Code: Rad 100** |
| • **Number of teaching hours:**<br>- **Lectures:** 2 hours/week<br>- **Practical/clinical:** 1 hours/week | | |
| **2. Overall Aims of the course** | 1. To provide the candidates with the skills to assume responsibility for the appropriate utilization of imaging studies.<br>2. To familiarize the candidates with the circuitry of an x-ray unit, x-ray tube, x-ray production, nature of x-rays, inverse square law, half-value layer, as well as to detect defects interfering with the proper function of the equipment and the fundamentals of preventive maintenance.<br>3. To provide the candidates with knowledge about hazards of radiation, how to avoid unnecessary exposure of radiation, lead protection, lead limit of x-ray Rooms/ Department to ensure safe practice of radiology, especially in daily application of radiation, safety measures and in all other facets of patient safety during imaging. | |
| **3. Intended learning outcomes of course (ILOs):**<br>***Upon completion of the course, the student should be able to:*** | | |
| **A- Knowledge and Understanding** | A. List the Basic science of structure of the atom, electromagnetic radiation and particulate radiation. | |

| | |
|---|---|
| | A.2. Describe the details of-Interaction of radiation with the matter.<br>A.3. Describe Radiation units, System of units.<br>Exposure.& Absorbed dose.<br>A.4. Define types of Generators<br>A.5. Define causation and association .<br>A.6. Discuss Fluoroscopy& system components.<br>A.7. Describe Computed tomography:& system components<br>A.8. Describe the Magnetic resonance imaging magnetism and magnetic field& Type of magnetic materials. |
| **B- Intellectual Skills** | B1. Correlates the facts of Radiological physics with clinical reasoning, diagnosis and management of common diseases related to Radio diagnosis.<br>B2. Correlate relation between radiological physics & common clinical situations related to Radio diagnosis. |
| **C- Professional and Practical Skills** | C1. Evaluate respect, compassion, and integrity; a responsiveness to the needs of patients and society.<br>C2. Apply basics of radiological physics on imaging devices.<br>C3. Apply information technology to support decisions related to Radiological physics & its clinical application in Radio diagnosis |
| **D- General and transferable Skills** | D.l. Perform practice-based improvement activities using a systematic methodology.<br>D.2. Assess evidence from scientific studies (journal club)<br>D.3. Provide information using effective nonverbal, explanatory, questioning, and writing skills.<br>D.4. Maintain therapeutic and ethically sound relationship with patients.<br>D.5. Interpret information using effective nonverbal, explanatory, questioning, and writing skills. |

| 4. Course Contents | No of Hours | | | Covered ILOS | | | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Lecture** | **clinical** | **Total** | **Knowledge(A)** | **Intellectual skills (B)** | **Clinical and practical skills (C)** | **General and transferrable skills (D)** |
| - **Basic science of structure of the atom, electromagnetic radiation and particulate radiation** | 8 | 4 | 12 | A1, A3 & A5 | B1& B2 | C1 | D1 & D2 |
| - **Interaction of radiation with the matter** | 6 | 3 | 9 | A1-5 | B1& B2 | C2 | D1 & D3 |
| - **Radiation units and properties of X-ray** | 6 | 3 | 9 | A2-7 | B1 & B2 | C1-3 | D1, D2 & D4 |
| - **Fluroscopy** | 12 | 6 | 18 | A4, A5 & A6 | B2 | C1 & C2 | D 1-5 |
| - **Computed tomography** | 8 | 4 | 12 | A4, A5 & A7 | B1 | C2 & C3 | D 1-5 |
| - **Magnetic resonance imaging** | 8 | 4 | 12 | A1-A4 | B1&B2 | C2 | D 1-3 |

| | |
|---|---|
| **5. Teaching and Learning Methods** | *a. Academic Lectures.*<br>*b. Seminars.*<br>*c. Journal Reading Club.*<br>d. *Assignments* |

| | |
|---|---|
| **6. Teaching and Learning Methods for students with limited Capacity** | Extra lectures, seminars, tutorials according to their needs. |
| 7. **Student Assessment** | |
| **A. Student Assessment Methods** | 1- Written examination<br>2- Oral examination<br>3- Practical Exam |
| **B. Weighting of Each Method of Assessment** | **1. Written examination 40**<br>**2. Oral examination assessment 30**<br>**3. Practical 30**<br>**Total 100** |

| | |
|---|---|
| **8. List of References** | |
| **A. Course Notes/handouts** | - Lectures notes<br>- Staff members print out of lectures and/or CD copies |
| **B. Recommended Books** | - Christensen Book of Physics |

**Course Coordinator: Prof. Dr. Hosny S.A Ghani**

**Ass lecturer: Ahmed Shaban, Mery Mohsen**

- **Head of the Department: Prof. Dr. Nadia F. Al-Amin**
- **Date of specification approval**: **3/2023**

## A- Matrix of coverage of course ILOS by the course contents

| Course Contents | Covered ILOS | | | |
|---|---|---|---|---|
| **Topic** | **Knowledge &understanding (A)** | **Intellectual skills (B)** | **Clinical and practical skills (C)** | **General and transferrable skills (D)** |
| - **Basic science of structure of the atom, electromagnetic radiation and particulate radiation** | A1, A3 & A5 | B1& B2 | C1 | D1 & D2 |
| - **Interaction of radiation with the matter** | A1-5 | B1& B2 | C2 | D1 & D3 |
| - **Radiation units and properties of X-ray** | A2-7 | B1 & B2 | C1-3 | D3, D4 & D5 |
| - **Types of Generators and Technique factors** | A2-6 | B1 & B2 | C1 & C2 | D1 & D4 |
| - **Fluoroscopy** | A4, A5 & A6 | B2 | C1 | D1, D2 & D4 |
| - **Computed tomography** | A4, A5 & A7 | B1 | C1 | D 1-5 |
| - **Magnetic resonance imaging** | A4, A5 & A8 | B1 & B2 | C2 | D 1-3 |

**B- Matrix of Coverage of Course ILOs by Methods of Teaching**

| Methods of Teaching & Learning | Intended Learning Outcomes (ILOs) | | | |
|---|---|---|---|---|
| | **A. Knowledge & Understanding** | **B. Intellectual Skills** | **C. Professional & Practical skills** | **D. General & Transferable Skills** |
| **Lectures** | A 1-8 | B1 | | D1 & D2 |
| **Seminars** | A1-4 | B1 & B2 | C1 & C2 | D2 |
| **Journal clubs** | | | C3 | D1-5 |
| **Assignments** | A2 & A3 | | C1-3 | D2 & D3 |

## 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** |
| **Written exam** | A1-8 | B1 & B2 | | |
| **Practical exam** | A1-4 | B1 & B2 | C1-3 | |
| **Oral Exam** | A2-8 | B1 & B2 | | D1-5 |

**Blueprint of physics exam paper (first master)(Radiology department)**

# Blueprint of radiology postgraduates Examination Paper(first master)

| | 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 | Basic science of structure of the atom, electromagnetic radiation and Particulate radiation | 4 | 70 | 30 | **15.4** | 7 | 5 | **3** | 2 | 1 | **4** | **10** |
| 2 | Interaction of radiation with the matter | 2 | 75 | 25 | **7.7** | 4 | 3 | **1** | 1 | 1 | **2** | **10** |
| 3 | Radiation units and, | 2 | 75 | 25 | **7.7** | 5 | 3 | **2** | 2 | - | **2** | **10** |
| 4 | Properties of X-ray | 4 | 70 | 30 | **15.4** | 4 | 3 | **3** | 1 | 1 | **4** | **10** |
| 5 | Types of Generators and Technique factors | 4 | 80 | 20 | **15.4** | 6 | 5 | **3** | 1 | 2 | **5** | **10** |
| 6 | Fluoroscopy | 3 | 75 | 25 | **11.5** | 6 | 4 | **3** | 2 | 1 | **4** | 15 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | Computed tomography | 3 | 70 | 30 | **11.5** | 5 | 4 | **3** | 1 | 1 | **4** | 10 |
| 8 | Magnetic resonance imaging | 4 | 75 | 25 | **15.4** | 6 | 5 | **3** | 1 | 2 | **5** | 10 |
| 9 | Basic science of structure of the atom, electromagnetic radiation and Particulate radiation | | | | **100 %** | | | **21** | | 9 | **30** | 15 |
| 10 | total | | | | **100 %** | | | | | | | 100 |

# 5-Radiological Anatomy & techniques course specifications for MSC Degree in Radio diagnosis

***Name of department: Radiology***

***Faculty of medicine***

***Minia University***

| | | |
|---|---|---|
| **9. Course Information** | | |
| • **Academic Year/level:** Radio diagnosis first part MSC. | • **Course Title:** Radiological Techniques first part MSc | • **Code: Rad 100** |
| • **Number of teaching hours:**<br>- **Lectures:** 2 hours/week<br>- **Practical/clinical:** 1 hours/week | | |
| **10. Overall Aims of the course** | 1. Study of the general foundation of positioning technique to obtain radiographic demonstration of anatomical structure of interest as well as specialized radiographic examinations of the different body structures and organs without contrast media<br>2. To be familiar with the anatomy of the MSK.<br>3. Develop comprehensive understating of normal neuro-CT anatomy (including brain, para-nasal sinuses, temporal bones, orbits, neck and spine) and be able to recognize normal variant.<br>4. Learn the candidates that an atlas of cross sectional anatomy should be consulted when there is any doubt. | |
| **11. Intended learning outcomes of course (ILOs):**<br>***Upon completion of the course, the student should be able to:*** | | |
| **E- Knowledge and Understanding** | A.1 Describe the appearance of genitourinary structures on basic imaging modalities:<br>-Plain film. | |

| | |
|---|---|
| | -IVU<br>-Voiding cystourethrography.<br><br>A.2. Discuss the normal radiographic anatomy, CT and MRI anatomy of the axial and appendicular skeleton.<br><br>A.3. Define normal anatomy of:<br><br>-Chest-X-ray: as regard identifying the structures on PA and lateral chest radiograph.<br><br>-CT anatomy.<br><br>-CT angiography.<br><br>-Vascular anatomy..<br><br>A.4. Describe normal anatomic features and variants:<br><br>- Abdominal plain film:<br>- Normal anatomy.<br>- Gas and soft tissues.<br>- Abdominal calcification.<br>- GIT in barium studies.<br><br>A.5. Describe detailed knowledge of intra-cranial anatomy as displayed on multi-planar images.<br><br>A.6. Explain the complex anatomy of the orbit, temporal bone, skull base, soft tissue of the neck as displayed on CT<br><br>A.7. Explain the normal osseous structures of the spine, inter-vertebral disc, support ligaments and the contents of thecal sac (spinal cord and nerve roots) on CT and MRI. |
| **F- Intellectual Skills** | B1. Correlate the facts of Radiological Techniques, and Radiological Anatomy with clinical reasoning, diagnosis and management of common diseases related to Radio diagnosis.<br><br>B2. Correlate application of radiological techniques on clinical devices. |
| **G- Professional and Practical Skills** | C1 . Examine the classification, symptoms and signs of contrast reaction and clinical management including |

| | |
|---|---|
| | appropriate pharmacologic agent and their mode of administration<br><br>C2. Apply information technology to support decisions related to Radiological Techniques, and Radiological Anatomy in Radio diagnosis.<br><br>C3. Illustrate the indications for pre-medication.<br><br>C4 Apply the protocols of the others different imaging modalities:<br><br>-CT examination:<br><br>-Procedure: preparation.<br><br>-Oral contrast agent.<br><br>-CT enema examination.<br><br>-IV contrast agent. |
| **H- General and transferable Skills** | D. l. Perform practice-based improvement activities using a systematic methodology(audit, logbook)<br><br>D.2. Conduct epidemiological Studies and surveys.<br><br>D.3. Facilitate learning of junior students and other health care professionals.<br><br>D.4. Maintain therapeutic and ethically sound relationship with patients.<br><br>D.5. Interpret information using effective nonverbal, explanatory, questioning, and writing skills. |

| **Course Contents** | **No of Hours** | | | **Covered ILOS** | | | |
|---|---|---|---|---|---|---|---|
| **Topic** | **Lecture** | **Clinical** | **Total** | **Knowledge(A)** | **Intellectual skills (B)** | **Clinical and practical skills (C)** | **General and transferrable skills (D)** |
| **Appearance of genitourinary structure** | 8 | 4 | 12 | A1, A3 & A5 | B1& B2 | C1 | D1 & D2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **s on basic imaging modalities** | | | | | | | |
| **Normal radiographic anatomy, CT and MRI anatomy of the axial and appendicular skeleton.** | 6 | 2 | 8 | A1-5 | B1& B2 | C2 | D1 & D3 |
| - **Normal anatomy of Chest-X-ray** | 6 | 2 | 8 | A2-7 | B1 & B2 | C1-3 | D1, D2 & D4 |
| - **Normal anatomic features and variant of abdomen** | 10 | 6 | 16 | A4, A5 & A6 | B2 | C1 & C2 | D 1-5 |
| - **Intra-cranial anatomy.** | 6 | 2 | 8 | A4, A5 & A7 | B1 | C2 & C3 | D 1-5 |
| **Anatomy of the orbit, temporal bone, skull base, soft tissue of the neck on CT** | 6 | 2 | 8 | A1-A4 | B1&B2 | C2 | D 1-3 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Normal osseous structures of the spine, inter-vertebral disc, support ligaments and the contents of thecal sac (spinal cord and nerve roots) on CT and MRI.** | 3 | 2 | 5 | A1&A2 | B1 &B2 | C1 | D1&D2 |
| **Vascular anatomy of the cerebral circulation.** | 3 | 4 | 7 | A3&A4 | B1 | C1&C2 | D1 |

| **12.** | **Covered ILOS** | | | |
|---|---|---|---|---|
| **Topic** | **Knowledge &understanding (A)** | **Intellectual skills (B)** | **Clinical and practical skills (C)** | **General and transferrable skills (D)** |
| - **Appearance of genitourinary structures on basic imaging modalities** | A1, A2 & A5 | B1 | C1 & C4 | D1 & D2 |
| - **Normal radiographic anatomy, CT and MRI anatomy of the axial and appendicular skeleton.** | A1-5 | B1& B2 | C1 & C2 | D1 & D3 |

| | | | | |
|---|---|---|---|---|
| - **Normal anatomy of Chest-X-ray** | A1-4 | B1 & B2 | C3, C4 & C5 | D3, D4 & D5 |
| - **Normal anatomic features and variant of abdomen** | A2, A3, A5 & A7 | B1 & B2 | C1, C4 & C5 | D2 & D4 |
| - **Intra-cranial anatomy** | A1, A3 & A4 | B2 | C1 & C3 | D2-5 |
| - **Anatomy of the orbit, temporal bone, skull base, soft tissue of the neck on CT** | A1, A6 & A7 | B1 & B2 | C1 & C4 | D 1-3 |
| - **Normal osseous structures of the spine, inter-vertebral disc, support ligaments and the contents of thecal sac (spinal cord and nerve roots) on CT and MRI.** | A1, A3 & A4 | B1 | C2 & C4 | D3 & D5 |
| - **Vascular anatomy of the cerebral circulation.** | A1, A2 & A5 | B1 & B2 | C2, C3 & C4 | D2-4 |

| | |
|---|---|
| **13. Teaching and Learning Methods** | *a. Academic Lectures.*<br>*b. Seminars.*<br>*c. Observation*<br>d. *Written & oral communication* |
| **14. Teaching and Learning Methods for students with limited Capacity** | Extra lectures, seminars, tutorials according to their needs. |
| 15. **Student Assessment** | |
| **C. Student Assessment Methods** | 1- Written examination<br>2- Oral examination<br>3- Practical Exam<br>4- Log book |

| | |
|---|---|
| **D. Weighting of Each Method of Assessment** | **4. Written examination 40**<br>**5. Oral examination assessment 30**<br>**6. Practical 30**<br>**7. Log book**<br>**Total 100** |

| **16. List of References** | |
|---|---|
| **C. Course Notes/handouts** | - Lectures notes<br><br>- Staff members print out of lectures and/or CD copies |
| **D. Recommended Books** | - Clark's: positioning in radiography.<br>- Graham and Brain: techniques in diagnostic imaging.<br>- T. Holm PES Palmer E. Lehtinen Manual of radiographic technique 2002. |

**Course Coordinator: Prof. Dr. Hosny S.A Ghani**

**Ass lecturer: Ahmed Shaban, Mery Mohsen**

- **Head of the Department: Prof. Dr. Nadia F. Al-Amin**
- **Date of specification approval**: **3/2023**

## D- Matrix of coverage of course ILOS by the course contents

| Course Contents | Covered ILOS | | | |
|---|---|---|---|---|
| **Topic** | **Knowledge &understanding (A)** | **Intellectual skills (B)** | **Clinical and practical skills (C)** | **General and transferrable skills (D)** |
| - **Appearance of genitourinary structures on basic imaging modalities** | A1, A2 & A5 | B1 | C1 & C4 | D1 & D2 |
| - **Normal radiographic anatomy, CT and MRI anatomy of the axial and appendicular skeleton.** | A1-5 | B1& B2 | C1 & C2 | D1 & D3 |
| - **Normal anatomy of Chest-X-ray** | A1-4 | B1 & B2 | C3, C4 & C5 | D3, D4 & D5 |
| - **Normal anatomic features and variant of abdomen** | A2, A3, A5 & A7 | B1 & B2 | C1, C4 & C5 | D2 & D4 |
| - **Intra-cranial anatomy** | A1, A3 & A4 | B2 | C1 & C3 | D2-5 |
| - **Anatomy of the orbit, temporal bone, skull base, soft tissue of the neck on CT** | A1, A6 & A7 | B1 & B2 | C1 & C4 | D 1-3 |
| - **Normal osseous structures of the spine, inter-vertebral disc, support ligaments and the contents of thecal sac (spinal cord and nerve roots) on CT and MRI.** | A1, A3 & A4 | B1 | C2 & C4 | D3 & D5 |
| - **Vascular anatomy of the cerebral circulation.** | A1, A2 & A5 | B1 & B2 | C2, C3 & C4 | D2-4 |

## E- Matrix of Coverage of Course ILOs by Methods of Teaching

| Methods of Teaching & Learning | Intended Learning Outcomes (ILOs) | | | |
|---|---|---|---|---|
| | **A. Knowledge & Understanding** | **B. Intellectual Skills** | **C. Professional & Practical skills** | **D. General & Transferable Skills** |
| **Lectures** | A 1-7 | B1 | | D1 & D2 |
| **Seminars** | A1-4 | B1 & B2 | C1 & C2 | D2 |
| **Observation** | | B2 | C1-4 | D2 & D3 |
| **Written & oral communication** | A2 & A3 | | C1-3 | D1-5 |

## 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** |
| **Written exam** | A1-7 | B1 | | |
| **Practical exam** | A1-4 | B1 & B2 | C1-4 | D1 & D2 |
| **Oral Exam** | A2-8 | B1 & B2 | C1-3 | D1-5 |
| **Log book** | | | C1 | C2 |

**Blueprint of radiological anatomy exam paper (first master) (Radiology department)**

Blueprint of radiology postgraduates Examination Paper

| | 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** | Appearance of genitourinary structures on basic imaging modalities | 4 | 70 | 30 | **15.4** | 7 | 5 | **3** | 2 | 1 | **4** | **10** |
| **2** | | 2 | 75 | 25 | **7.7** | 4 | 3 | **1** | 1 | 1 | **2** | **10** |
| **3** | Normal radiographic anatomy, CT and MRI anatomy of the axial and appendicular skeleton10 | 2 | 75 | 25 | **7.7** | 5 | 3 | **2** | 2 | - | **2** | **10** |
| **4** | Normal anatomy of Chest-X-ray | 4 | 70 | 30 | **15.4** | 4 | 3 | **3** | 1 | 1 | **4** | **10** |
| **5** | Normal anatomic | 4 | 80 | 20 | **15.4** | 6 | 5 | **3** | 1 | 2 | **5** | **10** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | features and variant of abdomen | | | | | | | | | | | |
| **6** | Intra-cranial anatomy | 3 | 75 | 25 | **11.5** | 6 | 4 | **3** | 2 | 1 | **4** | 15 |
| 7 | Anatomy of the orbit, temporal bone, skull base, soft tissue of the neck on CT | 3 | 70 | 30 | **11.5** | 5 | 4 | **3** | 1 | 1 | **4** | 20 |
| 8 | Normal osseous structures of the spine, inter-vertebral disc, support ligaments and the contents of thecal sac (spinal cord and nerve roots) on CT and MRI. | 4 | 75 | 25 | **15.4** | 6 | 5 | **3** | 1 | 2 | **5** | 15 |
| | | | | | **100 %** | | | **21** | | 9 | **30** | 30 |

**Course Coordinator: Prof. Dr. Hosny S.A Ghani**

**Ass lecturer: Ahmed Shaban, Mery Mohsen**

- **Head of the Department: Prof. Dr. Nadia F. Al-Amin**
- **Date of specification approval**: **3/2023**

# 6- Course Specifications of Internal medicine in Master Degree in Radiology

**University:** Minia

**Faculty:** Medicine

**Department:** Internal Medicine

| | | |
|---|---|---|
| **1. Course Information** | | |
| ● **Academic Year/level:** 2nd part MSc radiology | ● **Course Title:** Course Specifications of Internal Medicine in Master degree in radiology | |
| ● **Number of teaching hours:80 hours**<br>- **Lectures:** Total of 40 hours<br>- **Practical/clinical**: Total of 40 hours | | |
| **2. Overall Aims of the course** | To deliver an advanced knowledge of main topics of internal medicine and its subspecialties relevant to radiology; hence the candidate can recognize a wide range of medical problems. | |
| **3. Intended learning outcomes of course (ILOs):**<br>***Upon completion of the course, the student should be able to:*** | | |
| **A- Knowledge and Understanding** | A1. Recognize the basic pathology and microbiology of medical diseases.<br>A2. Identify the etiologies and risk factors of medical diseases.<br>A3. List the differential diagnosis of medical problems. | |

| | |
|---|---|
| | A4.Describe the various therapeutic models/alternatives used for medical problems.<br><br>A5. Enumerate the common diagnostic and laboratory techniques necessary to solve medical problems.<br><br>A6.Describe the mechanism of action, side effects and complications of common therapeutic drugs.<br><br>A7.Mention the principles, ethics and legal aspects of professional practice in the field of internal medicine.<br><br>A8. Explain different diagnostic alternatives that help reaching a final diagnosis.<br><br>A9. Discuss how to improve performance in the field of internal medicine. |
| **B- Intellectual Skills** | B1. Interpret data acquired through history taking to reach a provisional diagnosis for medical diseases.<br><br>B2. Select different diagnostic alternatives that help reach a final diagnosis.<br><br>B3. Link between knowledge for professional problem solving.<br><br>B4. Analyze reading of research and issues related to radiology. |
| **C- Professional and Practical Skills** | C1. Take a good medical history and conduct a proper general examination.<br><br>C2. Evaluate normal and abnormal physical signs by proper regional examination of the body.<br><br>C3. Write and evaluate medical reports.<br><br>C4. Plan the patient's management.<br><br>C5. Assess methods and tools in diagnosis and management in internal medicine.<br><br>C6. Interpret adequately the results of common laboratory investigations.<br><br>C7. Interpret adequately X-ray, CT and ultrasonic images of common medical problems.<br><br>C8. Evaluate adequately the patient's acute morbidity score and need for urgent intervention. |

| | |
|---|---|
| **D- General and transferable Skills** | D1. Communicate effectively with patients and their families.<br>D2. Assess himself and identify personal learning needs.<br>D3. Develop personal skills in writing a case summary and a simple essay.<br>D4. Prepare and present different topics using power point and data show.<br>D5. Use different sources for information and knowledge continuously.<br>D6. Use information technology to serve the development of professional practice<br>D7. Work in teamwork.<br>D8. Manage Scientific meetings according to the available time.<br>D9. Present problematic internal medicine-cases in seminars.<br>D10. Communicate effectively by all types of effective communication. |

## 4. Course Contents

| Topic | Lecture Hours | Practical/Clinical hours/week | Total No. of hours / Week |
|---|---|---|---|
| **Neurology**<br>Paraplegia<br>Stroke<br>Brain tumors | 8 | 8 | 16 |

| | | | |
|---|---|---|---|
| | | | |
| - **Hematology**:<br>• Anemias<br>• paraproteinemia<br>• hematological malignancy<br>• Blood transfusion | 8 | 8 | 16 |
| **Cardiovascular system:-**<br>• cardiomyopathy<br>• rheumatic heart disease<br>• Congestive heart failure | 8 | 8 | 16 |
| **Hepatology and GIT:-**<br>• Liver cirrhosis<br>• Chronic hepatitis<br>• jaundice<br>• granulomatous liver disease<br>• inflammatory bowel disease<br>• intestinal polyposis | 10 | 8 | 18 |

| | | | |
|---|---|---|---|
| • colonic diverticular disease | | | |
| **Clinical immunology**<br>Arteritis: seropositive, seronegative vasculitis | 6 | 6 | 12 |
| **Total** | 40 | 40 | 80 |
| **5. Teaching and Learning Methods** | 1-Talk and chalk method in classes.<br>2-Power point demonstration<br>3-Practical clinical examination in clinical wards.<br>4- Medical web sites in the Network.<br>5- Discussion of medical problems in clinical round.<br>6- online lectures | | |
| **6. Teaching and Learning Methods for students with limited Capacity** | Special session for training and tutorials. | | |
| **7. Student Assessment** | | | |
| **A. Student Assessment Methods** | 1- Research assignment for the students to assess the general and transferable skills.<br>2- Log book to assess clinical and transferable skills, attendance to medical conferences and oral discussions of thesis.<br>3- Final written and commentary exam to assess Knowledge, understanding and intellectual skills.<br>4- Final oral exam to assess knowledge and understanding.<br>5- Final practical exam to assess practical skills. | | |

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| **B. Assessment Schedule (Timing of Each Method of Assessment)** | Assessment 1 … Assignment…. Week: 8-16<br>Assessment 2…according to department schedule.<br>Assessment 3…. Final written exam. Week …24<br>Assessment 4 …Final practical exam Week: 24<br>Assessment 5…..Final oral exam Week….24 |
| **C. Weighting of Each Method of Assessment** | Assignment and log book: 10 %<br>Written Exam 30<br>Practical Exam 40<br>_____<br>Total 70 |
| **8. List of References:** | |
| **A. Course Notes/handouts** | Lecture notes prepared by staff members in the department. |
| **B. Essential Books** | Davidson's Principles and Practice of Medicine<br>24th Edition - March 1, 2022<br>Macleod's Clinical Examination, J. Alastair Innes, Anna R Dover P, Karen Fairhurst, 14th Edition,2018 |
| **C. Recommended Text Books** | - Kumar and Clarke Textbook of Medi cine; Parveen Blackwell Science; 10th edition, 2020<br>Methods of Clinical examination (Salah Ibrahim) |
| **D. Periodicals, websites** | Pubmed.com |

| | |
|---|---|
| | Biomed.net.com<br>Free medical journal..com<br>Annals of internal medicine.com |
| **9- Facilities required for teaching and learning:** | |
| | - Library in the hospital<br>- NET data information<br>- Clinical staff rounds and case presentations.<br>- Lectures courts.<br>- In patients clinical wards teaching (bed-side teaching)<br>- Seminars.<br>- Clinical rounds teaching in classrooms.<br>- Medical conference attendance.<br>- Thesis discussion attendance. |

**Course Coordinator/s:**
Prof. Mona Abo El-Makaram

**Head of Department:**
Prof. Dr. Youssouf Ismail Mousa

**Date of last update & approval by department Council: Mars 2023**

# نموذج رقم (١١)

| | |
|---|---|
| مسمى المقرر | الاشعة التشخيصية |
| كود المقرر | |

جامعةالمنيا
كلية لطب
قسم: االباطنه العامة

## 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 |
| **Neurology Paraplegia Stroke Brain tumors** | **1 to 3** | **1,2,3,4** | **1,2** | **1** | **1,3,5** |
| **Hematology: Anemias paraproteinemia hematological malignancy** | 3 to 8 | **2,3** | **2** | **2** | **2,4** |

| | | | | | |
|---|---|---|---|---|---|
| **Blood transfusion** | | | | | |
| **Cardiovascular system-**:<br>**cardiomyopathy**<br>**rheumatic heart disease**<br>**Congestive heart failure** | **8 to 12** | **3,4** | **2,3** | **1,2** | **3,4** |
| Hepatology and GIT-:<br>Liver cirrhosis<br>Chronic hepatitis<br>jaundice<br>granulomatous liver disease<br>inflammatory bowel disease<br>intestinal polyposis<br>colonic diverticular disease | **12-16** | **1,4** | **1,4** | **1,2** | **4,5** |
| **Clinical immunology**<br>**Arteritis: seropositive, seronegative** | **17** | **2,4** | **1,2** | **1** | **1,2,5** |

| | | | | | |
|---|---|---|---|---|---|
| vasculitis | | | | | |

**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 | 1,2 | 1 | 1,3,5 |
| Practical | | | 2 | 2,4 |
| Clinical (Including grand rounds) | | | 1,2 | 3,4 |
| Presentation/seminar | 1,4 | | | 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 | 1,2 | 1 | 1,3,5 |
| Practical exam | | | 2 | |
| Clinical exam | | 2,3 | 1,2 | |
| Oral Exam | 12,3,4 | 1,2,4 | | |
| Assignment | 2,4 | 1,2 | 1 | 1,2,5 |

# Blue Print of Internal Medicine for candidates of master degree in Radiology (second part) examination paper (30 marks)

| | Topic | Hours | Knowledge% | Intellectual% | % of topic | Knowledge mark | Intellectual Mark | Marks | Actual Mark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Neurology | 8 | 70 | 30 | 20 | | | 6 | |
| 2 | Hematology: | 8 | 75 | 25 | 20 | | | 6 | |
| 3 | Cardiovascular system-: | 8 | 75 | 25 | 20 | | | 6 | |
| 4 | Hepatology and GIT | 10 | 75 | 25 | 25 | | | 7.5 | |
| 5 | Clinical immunology | 6 | 75 | 25 | 15 | | | 4.5 | |
| | Total | 40 | | | 100 % | | | | 30 |

**منسق البلوك**
**رئيس قسم الباطنة العامة**
**ا.د/ مني ابو المكارم**
**ا.د/ يوسف إسماعيل موسي**

# 7-Course Specifications of General surgery for Master degree of Radiology

**University:** Minia

**Faculty:** Medicine

**Department**: General Surgery

| 1. Course Information | | |
|---|---|---|
| **Academic Year/level:** postgraduate students | *Course Title: General surgery for Master degree of Radiology* | **Code**: |
| - ***Number of teaching hours:*** *1/week for 6 months*<br>- ***Lectures:*** *Total of 14 hours*<br>- ***Clinical****: Total of 12 hours* | | |
| **1.Overall Aims of the course** | By the end of the course the student must be able to have:<br>1. Knowledge and skills essential for the practice of specialty and necessary to gain.<br>2. Basic information about the structure and function of different tissues and organs affected in many diseases<br>3. Active participation in community needs assessment and problems solving.<br>4. Maintenance of learning abilities necessary for continuous medical education.<br>5. Upgrading research interest and abilities. | |
| **3.Intended learning outcomes of course (ILOs):**<br>***Upon completion of the course, the student should be able to:*** | | |

| | |
|---|---|
| **A-Knowledge and Understanding** | a.l Describe normal structure & function of human body on macro & micro levels.<br>a.2 Understand normal growth and development of human body.<br>a 3. Understand causation of general surgical diseases and problems.<br>a.4. List clinical picture of general surgical diseases and problems.<br>a.5. Enumerate diagnostic techniques necessary to establish diagnosis of general surgical diseases and problems.<br>a.6 Describe various therapeutic methods/alternatives used for general surgical diseases and problems.<br>a.7. Explain techniques of surgical operations. |
| **B-Intellectual Skills** | b.1. Interpret data acquired through history taking and radiological findings to reach a provisional diagnosis for general surgical problems.<br>b.2. Select from different diagnostic alternatives the ones that help reaching a final diagnosis for general surgical problems. |
| **C- Professional and Practical Skills** | c.l. Teamwork, practicing and participation in scientific activities.<br>c.2. Master the basic and modern medical skills in the area of specialty. |
| **D-General and transferable Skills** | d.1. Communicate effectively by all types of effective communication.<br>d.2. Assess himself& identify of personal learning needs.<br>d.3. Use different sources to obtain information & knowledge.<br>d.4. Develop rules & indicators for assessing the performance of others.<br>d.5. Work in a team and team's leadership in various professional contexts. |

**4.Course Contents**

| Topic | Lecture hours/week | Clinical hours/week | Total No. of hours hours/week |
|---|---|---|---|
| Lymphadenopathy | 1 | 1 | 2 |
| Arterial injury | 1 | 1 | 2 |
| Venography and lymphangiography | 1 | 1 | 2 |
| Principles of surgical oncology | 1 | - | 1 |
| Management of GIT and liver tumors | 1 | 1 | 2 |

| | | | |
|---|---|---|---|
| Management of breast, thyroid and testicular tumors | 1 | 1 | 2 |
| Acute abdomen | 1 | 1 | 2 |
| DD of abdominal mass and retroperitoneal tumors | 1 | 1 | 2 |
| Intestinal obstruction and intestinal fistula | 1 | 1 | 2 |
| Portal hypertension and esophageal varices | 1 | 1 | 2 |
| Liver segmental anatomy | 1 | - | 1 |
| OJ and cholangiography | 1 | 1 | 2 |
| Medisatinal and chest tumors | 1 | 1 | 2 |
| Management of multiple trauma patient | 1 | 1 | 2 |
| **Total** | 14 | 12 | 26 |
| **5.Teaching and Learning Methods** | Lectures<br><br>Clinical sessions<br><br>Seminars | | |
| **6.Teaching and Learning Methods for students with limited Capacity** | Self-learning activities such as use of internet and multimedia. | | |
| 7.**Student Assessment** | | | |
| **A.Student Assessment Methods** | End of course written exam: A paper based exam to assess the student's comprehension and understanding of the class work.<br><br>Clinical exam: to assess student's intellectual and communication abilities regarding basic knowledge and understanding of the course topics.<br><br>Oral exam: to assess student's intellectual and communication abilities regarding basic knowledge and understanding of the course topics. | | |
| **B.Assessment Schedule (Timing of Each Method of Assessment)** | End of course exam (written, clinicl, and oral exams) | | |
| **C.Weighting of Each Method of Assessment** | Final written Examination: 30 marks<br>Clinical examination: 20<br>Oral Examination:20 marks<br>Total 70 marks | | |
| **8.List of References** | | | |

| | |
|---|---|
| **A. Course Notes/handouts** | Department Books, and notes on General Surgery by departmentof General Surgery, Faculty of medicine, Minia university |
| **B. Essential Books** | KASR ALAINY Introduction to Surgery, 9th edition, Faculty of Medicine, Cairo University, 2021 |
| **C. Recommended Text Books** | Bailey & Love`s Short Practice of Surgery, 27th Edition - International Student`s Edition set volume 1 & 2. By Norman Williams - P Ronan O`Connell. 2022<br><br>Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice, 21st Edition, 2021. Courtney Townsend.<br><br>Current Diagnosis and Treatment Surgery, 15th Edition, 2020, Gerard Doherty (Author), McGraw Hill / Medical<br><br>MATARY TEXTBOOK OF CLINICAL SURGERY, 12th Edition, 2018 |
| **D. Periodicals, websites** | To be determined and updated during the course work.<br><br>**Websites:**<br><br>https://www.medicalpracticewebsitedesign.com/general-surgery-website-portfolio.php<br><br>https://radiologykey.com/surgical-radiography/<br><br>**Periodicals:**<br><br>1- International Journal of Surgey<br><br>2- British Journal of Surgery |

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

**Course Coordinator: Dr. Yasser Ali Kamal**

**Head of Department: Professor Dr. Amr Hamdy**

Amr Hamdy

| | |
|---|---|
| مسمى المقرر | ماجستير الاشعة |
| كود المقرر | |

جامعة/أكاديمية : ..المنيا

كلية / معهد..الطب.....

قسم : **الجراحة العامة**

**A. Matrix of Coverage of Course ILOs By Contents**

| **Contents**<br><br>**(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** |
| Lymphadenopathy | 1 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Arterial injury | 2 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Venography and lymphangiography | 3 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Principles of surgical oncology | 4 | a.1 - a.7 | b.1 – b.2 | - | - |
| Management of GIT and liver tumors | 5 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Management of breast, thyroid and testicular tumors | 6 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |

| | | | | | |
|---|---|---|---|---|---|
| Acute abdomen | 7 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| DD of abdominal mass and retroperitoneal tumors | 8 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Intestinal obstruction and intestinal fistula | 9 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Portal hypertension and esophageal varices | 10 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Liver segmental anatomy | 11 | a.1 - a.7 | b.1 – b.2 | - | - |
| OJ and cholangiography | 12 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Medisatinal and chest tumors | 13 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Management of multiple trauma patient | 14 | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.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 | a.1 - a.٧ | b.1 – b.٢ | | |
| Practical | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | |
| Presentation/seminar | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Journal club | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Thesis discussion | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| Training courses & workshops | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | |
| 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** | a.1 - a.٧ | b.1 – b.٢ | | |
| **Oral/Clinical Exam** | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | |
| **Assignment** | a.1 - a.٧ | b.1 – b.٢ | c.1 – c.2 | d.1 – d.5 |
| **Other/s(Specify)** | | | | |

**Blueprint of General Surgery for Master of Radiology (Written Exam)**

**(20 Marks)**

| Topic | Hours | Knowledge% | Intellectual% | % of topic | Mark | Actual mark |
|---|---|---|---|---|---|---|
| Lymphadenopathy | 1 | 70% | 30% | 7.14 | 1.43 | 2 |
| Arterial injury | 1 | 70% | 30% | 7.14 | 1.43 | 2 |
| Venography and lymphangiography | 1 | 70% | 30% | 7.14 | 1.43 | 2 |
| Principles of surgical oncology | 1 | 90% | 10% | 7.14 | 1.43 | 1 |
| Management of GIT and liver tumors | 1 | 70% | 30% | 7.14 | 1.43 | 3 |
| Management of breast, thyroid and testicular tumors | 1 | 70% | 30% | 7.14 | 1.43 | 3 |
| Acute abdomen | 1 | 70% | 30% | 7.14 | 1.43 | 3 |
| DD of abdominal mass and retroperitoneal tumors | 1 | 70% | 30% | 7.14 | 1.43 | 2 |
| Intestinal obstruction and intestinal fistula1 | 1 | 70% | 30% | 7.14 | 1.43 | 2 |
| Portal hypertension and esophageal varices | 1 | 70% | 30% | 7.14 | 1.43 | 2 |
| Liver segmental anatomy | 1 | 90% | 10% | 7.14 | 1.43 | 2 |
| OJ and cholangiography | 1 | 70% | 30% | 7.14 | 1.43 | 2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Medisatinal and chest tumors | 1 | 70% | 30% | 7.14 | 1.43 | 2 |
| Management of multiple trauma patient | 1 | 70% | 30% | 7.14 | 1.43 | 2 |
| TOTAL | 14 | | | 100% | | 30 |

Course Specifications of:

**"*Medical Statistics and Research methodology for Master degree in diagnostic radiology"***

**2022-2023**

**University:** Minia University

**Faculty:** Faculty of Medicine

**Department offering the course:** Public Health and Community Medicine department.

**Course Specifications**

It is a part of Postgraduate (MSC) Programme for diagnostic radiology Department.

**Programme(s) on which the course is given**: First part MSC of diagnostic radiology

**Major or minor element of programmes:** Statistics & research design

| **1- Basic Course Information** | | |
|---|---|---|
| **Academic Year/ level:**<br>First Part MSC , | **Course title:**<br>Medical Statistics and Research Methodology | **Code: DR 200** |
| **Number of teaching hours:**<br>**-Lectures :**20 hours 2h / week<br>**Practical/clinical:** 10 hours | | |

| | |
|---|---|
| **Total:** 30 hours | |
| **2-Overall Aims of the course** | |
| ***By the end of the course the candidate must be able to:***<br>1- Use statistical principles to improve their professional work<br>2-Identify how to use research methodology appropriately in researches<br>3-Acquiring concept of critical interpretation of data | |
| 3- **Intended learning outcomes of course (ILOs)** | |
| ***Upon completion of the course , the candidate should be able to :*** | |
| ***A-Knowledge and understanding*** | A.1 Describe methods of sampling strategies and sample size calculation<br>A.2 Identify types of variables, different forms of data presentation<br>A.3 Describe normal distribution curve, measures of central tendency and measures of dispersion.<br>A.4 Define terms of research methodology<br>A.5 Identify different study designs<br>A.6 Explain screening tests idea and usefulness<br>A.8 Describe different statistical tests and data analysis |
| ***B-Intellectual Skills*** | B.1 Describe and summarize data<br>B.2 Select the proper test of significance for a specific data<br>B.3Interpret selected test of significance |

| | |
|---|---|
| | B.4 Select appropriate research methods. |
| ***C-Professional and practical skills*** | C.1 Calculate different sample sizes<br>C.2 Calculate measures of central tendency and measures of dispersion<br>C3. Calculate sensitivity, specificity, and predictive values<br>C.4 Plan a research proposal |
| ***D- General and transferrable Skills*** | D.1 Write scientific thesis<br>D.2 Take part and work in research team to conduct a specific study<br>D.3 Organize and manage data, including graphic and tabular presentations |

| 4-Course content | | | |
|---|---|---|---|
| | No. Of hours | Lecture | Practical |
| **Statistics** | | | |
| Sampling | | 1 | |
| Sample size calculation | | 1 | 1 |
| Normal distribution curve | | 1 | |
| Measures of central tendency and deviation | | 2 | 2 |
| Tests of significance | | 2 | 2 |
| Data presentation | | 2 | 1 |
| **Research** | | | |
| Introduction to research , research terminology | | 3 | 2 |
| Study design , different types of study | | 4 | 2 |
| Research proposal and principles of research | | 2 | |
| Parts of literature | | 2 | |

## 5-Teaching and learning methods

4.1- Lectures: Face to face lectures, Pre-recorded video lectures

4.2- Practical lessons

4.3- Assignment

4.4- Online quizzes

## 6- Student assessment methods

5.1- **Research assignment:** to assess general transferable skills, intellectual skills.

5.2- **Written exams:**

**Short essay:** to assess knowledge

**Commentary:** to assess intellectual skills

5.3- **Practical Exams:** to assess practical and intellectual skills

**5.4- Oral Exams:** to assess knowledge, understanding, attitude and communication

**5.5- Structured oral exams:** to assess knowledge

## 6-Weighting of assessments

| | |
|---|---|
| Writing examination | 20 marks |
| Oral examination: | 20 marks |
| Total | 40 marks |

## 7- List of references

**6.1- Course notes:** - Department Books, and notes.

-Logbook

## 6.2- Essential books (text books)

Essential Medical Statistics, Betty R. Kirkwood and J. A. Sterne (2000), 2nd edition

**Introducing Research Methodology: A Beginners Guide to Doing a Research Project**

## 6.3- Periodicals:

1-International Journal of Public Health

2-Egyptian Journal of Community Medicine

3-Journal of Biomedical Education

## 6.4-Web Sites:

https://lagunita.stanford.edu/courses/Medicine/MedStats-SP/SelfPaced/about?fbclid=IwAR3nfirLM4wnuEqqUjLjk8TCR7lzPdnpGqwin06L-GjFq32a62w3j6R5s9c

## 7- Facilities required for teaching and learning

1. Public Health and Community Medicine skill laboratory equipped with skill tools.
2. Class rooms for theoretical lectures and tutorials.

- **Course Coordinators:**

➢ **Coordinators:**

1) **Lecturers:** Dr / Shaimma Mahmoud, Dr/ Chrestina Monir

٢)**Assistant coordinator: Assistant lecture Shaza Fadel**

- **Head of Department**:

**Professor Dr.** Nashwa Nabil Kamal

**Date of program specifications 1st approval by department council: 13 /5/2013.**

**Date of last update & approval by department council: 6/ 3 / 2023**

**جامعة/أكاديمية : المنيا**

**كلية / معهد: كلية الطب البشري**

**قسم :الصحة العامة**

| | |
|---|---|
| Medical Statistics and Research methodology for Master degree in Diagnostic radiology | **مسمى المقرر** |
| DR 200 | **كود المقرر** |

## A.Matrix of Coverage of Course ILOs by Contents

| Contents<br><br>(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 |
| Statistics | | | | | |
| Sampling | | A1 | | | |
| Introducion to Sample Size Calculation | | A1 | | C1 | |
| Normal distribution curve and screening | | A3 , A6 | | C3 | |
| Descriptive Statistics<br><br>(measures of central tendency and measures | | A3 | B1 | C2 | |
| Data presentation and normal distribution curve | | A2 | B1 | | D3 |
| Tests of Significance | | A8 | B2 ,B3 | | |
| Research | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Introduction to research “ terminology” | | A4 | | | |
| Study design , different types of study | | A5 | B4 | | |
| Research proposal and principles of research | | | B4 | C4 | D2 |
| Parts of literatura | | | | | D1 |

## 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,A7,A8 | B1,B2,B4 | C1,C2,C3,C4 | D1 |
| Practical | A1,A2,A3,A8 | B3,B4 | C2,3 | D2,D3 |
| Assignment | A1,A3 | B4 | C4 | D2 |
| Online quizzes | A6,A8 | B3 | C1 | D3 |

# 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,A5,A8 | B1 , B2,B4 | | |
| Oral Exam | A4,A8,A3,A6 | B1,B4,B3 | C1,C2, ,C3,C4 | D1,D2,D3 |

**Course Coordinators:**

➢ **Coordinators:**

2) **Lecturers:** Dr / Shaimma Mahmoud, Dr/ Chrestina Monir

٢)**Assistant coordinator: Assistant lecture Shaza Fadel**

- **Head of Department**:

**Professor Dr.** Nashwa Nabil Kamal

**Date of last update & approval by department council: 6/ 3 / 2023**

**Blueprint of Statistics and research examination paper for candidates of master degree of Diagnostic radiology**

| Topic | Hours | Knowledge% | Intellectual% | %topic | Knowledge | | Intellectual | | Marks | Modified marks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | No of item | mark | No of item | mark | | |
| **Statistics** | 9 | 70% | 30% | 45% | **3** | **3** | **2** | **2** | **5** | **10** |
| **Research** | 11 | 60% | 40% | 55% | **2** | **4** | **1** | **1** | **5** | **10** |
| **Total** | **20** | | | 100% | | | | | **10** | **20** |

- **Course Coordinators:**

➢ **Coordinators:**

3) **Lecturers:** Dr / Shaimma Mahmoud, Dr/ Chrestina Monir

٢)**Assistant coordinator: Assistant lecture Shaza Fadel**

- **Head of Department**:

**Professor Dr.** Nashwa Nabil Kamal

**Date of last update & approval by department council: 6/ 3 / 2023**

# Course Specification of Medical Ethics

**(2022-2023)**

**University: Minia**

**Faculty: Medicine**

**Program on which the course is given: Master degree of all clinical**

**Major or minor element of program: Medical ethics, ethics of medical research**

**Department offering the program: all clinical Department**

**Department offering the course: Forensic Medicine & Clinical Toxicology Department**

**Academic year / Level: First part**

<table>
<tr><td colspan="3">A. Basic Information</td></tr>
<tr><td>• Academic Year/level:<br>Post graduate; 1st Part MSC, all clinical</td><td>• Course Title:<br>Course Specification of Medical Ethics (Master degree of all clinical)</td><td>• Code:</td></tr>
<tr><td colspan="3">• Number of teaching hours:<br>- Lectures: Total of 30 hours; ٢ hour/week<br>- Practical: Total of 15 hours; 1 hour/week</td></tr>
<tr><td colspan="3">B- Professional Information</td></tr>
<tr><td>1. Overall Aims of the course</td><td colspan="2">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</td></tr>
</table>

| 2. Intended learning outcomes of course (ILOs):<br>*Upon completion of the course, the student should be able to:* | |
|---|---|
| **A- Knowledge and Understanding** | **A.1- Identify the basic concept of learning and practicing medicine from the religious and human point of view.**<br>**A.2- Identify the very beneficial impressive history of medicine; ethics related.**<br>**A.3- Classify the main principles of medical ethics.**<br>**A.4- Recognize an integrated approach to deal with patients, their families, community and medical staff in an ethical, legal and human manner.**<br>**A.5- Identify rules in low and regulations to deal with patients in practicing medicine.**<br>**A.6- Explain the standard and accredited methods of clinical research especially on human beings.** |
| **B- Intellectual Skills** | **B.1- Design approach to patients in different situations; critical and noncritical ones.**<br>**B.2- Develop adequate communication skills with patients, community and colleagues.**<br>**B3- Conclude in medical researches on clear ethical basis.**<br>**B.4- Use knowledge and learn according to standard basis worldwide.**<br>**B.5- Apply and practice medicine according to concepts of evidence based medicine.**<br>**B.6- Recognize common ethical dilemma and suggest a proper solution.** |
| **C- Professional and Practical Skills** | **C.1- Use a high professional approach with colleagues and patients.**<br>**C.2- Modify steps of upgrading his/her educational, academic and clinical carriers.** |

| | |
|---|---|
| | **C.3- Use the standard guidelines in managing patients.**<br>**C.4- Identify what is called as clinical governance and auditing his /her Performance.** |
| **D- General and transferable Skills** | **D.1- Identify how to respect his/herself and the profession.**<br>**D.2- Develop adequate behavior and skill communications with community.**<br>**D.3- Modify life and live like others sharing social and national affairs.**<br>**D.4- Develop the capacity of helping people and share in upgrading their culture and education.**<br>**D.5- Identify how to participate in the national and social affairs and responsibilities.** |

**3- Course Contents**

| 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.) ٢/W** | **(15 hr.) 1/W** | **(45 hr.) 3/W** |

| | |
|---|---|
| **4- Teaching and Learning Methods** | **4.1 - Straight lectures; power point presentations**<br>**4.2 - Practical lessons**<br>**4.3 - Brain storming with the students**<br>**4.4 - Questions and Answers** |
| **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)**<br><br>**<u>ASSESSMENT TOOLS:</u>**<br><br>***Final Written exam:**<br>**short essay to asses knowledge and understanding.**<br>**problem solving to asses intellectual skills**<br>**MCQ to assess knowledge and intellectual skills.**<br><br>***Oral exam; to asses knowledge and understanding. Also intellectual skills, attitude, and communication.**<br>***Practical exam: to assess practical and professional skills.** |
| **B. Assessment Schedule** | • **Final Written exam week: 24-28**<br>• **Oral exam week: 24-28**<br>• **Practical exam week: 24-28** |
| **C. Weighting of Assessment** | • **Final Written exam 40% (40 Marks)**<br>• **Oral & Practical exams 60% (60 Marks)**<br>• **Total 100% (100 Marks)** |
| **7- List of References** | |

| | |
|---|---|
| **A. Course Notes/handouts** | **Department book by staff members.**<br>**Log Book.** |
| **B. Essential Books (text books)** | **Medical Ethics Manual, 2nd Edition John R. Williams, 2009.**<br>**Medical Ethics, 2nd Edition, Michael Boylan, 2014.** |
| **C. Recommended Books** | **Text book of medical ethics, Erich H. Loewy, 1989** |
| **D. Periodicals** | **Journal of Medical Ethics**<br>**Journal of Medical Ethics and History of Medicine** |
| **E. Web sites** | **https://en.wikipedia.org/wiki/Medical_ethics**<br>**https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5074007/** |
| **8- Facilities required for teaching and learning** | **Classrooms for theoretical lectures and tutorials** |

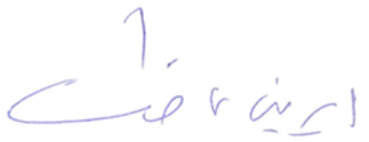
**Course Coordinators:**

**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 all clinical (First part))** | **مسمى المقرر** |
| | **كود المقرر** |

**جامعة/أكاديمية : .....المنيا.....**

**كلية / معهد: .....الطب البشرى.....**

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

**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** |
| | **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** |

## 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 | 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 |

## 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 | 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

### 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 &Professi | 4 | 75 | 25 | 13.32 | 1 | 1 | 5.32 | --- | --- | 5.32 | 5 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **onal secrecy** | | | | | | | | | | | |
| **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** |