Program specifications for: Medical Doctorate (MD) of Radio-diagnosis

[1] Basic **Information**

1. **Program title:** Medical Doctorate (MD) of Radio-diagnosis (CODE: RD100)
2. **Final award:** Medical Doctorate (MD) in Radio-diagnosis.
3. **Program type:** single.
4. **Responsible department:** Radio-diagnosis department
5. **Departments involved in the program:** Radio-diagnosis department, Internal Medicine, Public Health and preventive medicine, Pathology, General surgery
6. **Program duration: 3.5 Years.**
7. **Number of program courses: 6**
8. **Coordinator:** Prof. Osama A. Wadood Khalil,
   Prof. Ashraf M.Hassan El Sherif
9. **External evaluators:** Prof. Samy Abdel Aziz Saied
10. **Program management team:** All staff members of Radio-diagnosis department.

[2] Basic Information: Program Aims

Graduate of the MD degree in Internal Medicine should be able to:

The aim of this program is to provide the MD candidate with the medical knowledge; and skills in the field of Radio-diagnosis that prepare the postgraduate to engage in the academic education through:

1. Provide well trained, competent clinical radiologist capable of engaging in both clinical work duties as well as academic and research duties.
2. Apply radiological knowledge to interpret and manage different radiological imaging procedures and to present the results within ethical and professional framework to the community.
3. Gain a sufficient knowledge about the use of computers and computer sciences and integrate this knowledge to serve the field of radio-diagnosis.
4. Gain leadership skills and communicate efficiency with other colleagues in the specialty of radio-diagnosis and other related specialities.
5. Spread the ethical principles related to the practice in this specialty.
6. Enhance the interaction with the community and its problems and problems solving.
7. Stimulate continued medical learning, development and research.

[3] Intended Learning Outcomes (ILOs):

(A) Knowledge and understanding:

By the end of the study of MD degree of Radio-diagnosis the candidate should be able to:

a.1) Identify advanced knowledge and understanding of the principles and practices of radiology, including imaging techniques, radiopharmaceuticals, and radiation safety.

a.2) Recall pathology of different medical diseases.

a.3) Identify the etiologies, diagnosis and differential diagnosis of main diseases in the field of internal medicine.

a.4) Recognize important radiographic features and management plans of different surgical conditions.

a.5) Identify the main and advanced imaging features and differential diagnosis of pulmonary and cardiac diseases, their best imaging techniques.

a.6) Recognize the hepatobiliary radiological segmentation and basic and advanced imaging features of its various pathologies.

a.7) Identify various gastrointestinal diseases and their principle and advanced imaging criteria and clarify the differences between inflammatory and malignant conditions to guide further treatment plan.

a.8) Recognize the main imaging features and new emerging imaging techniques for the different neurological disorders like congenital anomalies, inflammatory,infectious conditions, autoimmune and demyelinating proscesses as well as neurological neoplasms.

a.9) Discuss the principle imaging features, advanced techniques and protocols for the different genitourinary diseases as well as women imaging techniques.

a.10) Identify basic and advanced imaging criteria and techniques of musculoskeletal system.

a.11) Identify basic and advanced imaging criteria and techniques in women imaging.

a.12) Discuss radiological contrast materials, their dosage and compare them regarding their indications and contraindications.

a.13) Explain various methods of radiation safety like shielding, increase distance, and decrease time of exposure according to ALARA principle.

a.14) Outline different research methods in medical science to be able to design and conduct good scientific research studies, analyze and interpret data, and publish research findings.

a.15) Identify the ethical and legal considerations associated with radiological practice, including patient confidentiality, informed consent, and patient radiation safety.

a.16) Discuss the principles and measurements of quality assurance and quality improvement to the clinical practice of Radio-diagnosis.

a.17) Identify and outline the effects of ionizing radiation and non-ionizing radiation on human health and evaluate the potential risks and benefits of radiological imaging, to improve the patient care and solve common health problems.

(b) Intellectual skills

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

b.1- Analyze and interpret complex radiological images: including advanced US/doppler techniques, MRIs, and CT scans, and identify any abnormalities or issues that may require further investigation.

b.2- Develop critical thinking and problem-solving skills to evaluate and interpret radiological images accurately.

b.3- Plan valuable and updated research projects in radio-diagnosis choosing topics that will benefit the community.

b.4- Construct and publish a clear and concise scientific paper in radio-diagnosis topic, following the conventions of scientific writing and using appropriate terminology.

b.5 Correlate and illustrate the potential risks associated with exposure to ionizing radiation techniques and imaging contrast material and develop strategies to minimize these risks.

b.6. Compare new imaging technologies and assess their potential risks and benefits in the context of clinical practice.

b.7- Plan for quality improvement in the field of medical education and clinical practice in Radio-diagnosis.

b.8. Relate efficient diagnostic decisions using the knowledge of different techniques of radio-diagnosis

b.9. Choose the appropriate imaging diagnostic tools for each case to reach correct diagnosis and best treatment plan and avoid unnecessary and/or repetitive exposure to radiation to minimize its hazards.

b.10- Create and innovate plans, systems, and other issues for improvement of performance in Radio-diagnosis. And incorporate them into clinical practice.

b.11- Appraise evidence-based recommendations for further patient management relevant to analysis of results of different diagnostic imaging techniques.

(c) Professional and practical skills

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

c.1- Evaluate basic and advanced radiological images accurately.

c.2- Write clear, concise, and complete radiological report reflecting the accurate interpretation of the radiological images with the use of standard medical terminology and following established guidelines.

c.3- Apply new technologies, techniques, and research findings to provide the most effective patient care and stay up to date with the recent advances.

c.4- Practice advanced imaging technologies in radio-diagnosis such as: elastography and shear wave US, MR spectroscopy (MRS), Diffusion tensor imaging (DTI) and others.

c.5- Conduct research and contribute to the advancement of knowledge in radiology, including the development of new diagnostic techniques, the evaluation of existing methods, and the exploration of emerging technologies.

(d) General and transferable skills

By the end of the study of MD <u>of Radio-diagnosis,</u> the candidate should be able to:

d.1- Demonstrate effective communication skills in the context of radiology, including the ability to explain complex medical concepts to patients and their families.

d.2- Provide clear and concise reports to referring physicians, and to collaborate effectively with other healthcare professionals.

d.3- Make use of information technology (IT) to access, share, and interpret medical images with the patient and other healthcare professionals, regardless of their location.

d.4- Plan to widely use PACS system and other tools of remote viewing and consultation of teleradiology.

d.5- Develop proficiency in teaching and evaluating residents in the field of radiology, including the ability to design and deliver effective educational materials, to provide constructive feedback, and to assess performance using appropriate methods and tools.

d.6- Critically evaluate one's own work and identify weakness areas for improvement and be committed to lifelong learning and staying up-to-date with the latest developments in their field.

d.7- Properly handle the available information resources such as medical textbooks, journals, online papers, websites and medical databases to develop a comprehensive understanding of radiology-related topics and issues.

d.8- Work effectively in multidisciplinary teams and be able to collaborate with colleagues from other specialties to provide comprehensive patient care.

d.9- Organize scientific meetings, such as conferences, seminars, and workshops. They should be able to develop agendas, coordinate presenters, and manage logistics.

d.10- Manage time effectively to meet the demands of clinical practice, research, and teaching and be able to prioritize tasks, set goals, and meet deadlines.

[4] Program Academic Reference Standards:

3. a. Minia faculty of medicine adopted the general national academic reference standards provided by the national authority for quality assurance and accreditation of education (NAQAAE) for all postgraduate programs. (Faculty council Degree No.6854, in its cession No.177 Dated: 18\5\2009).

- Minia faculty of medicine has developed the academic standards (ARS) for MD program and approved in faculty council decree No. 7528, in its cession No.191 dated: 15/3/2010. **{Annex 1}.**

- Then Minia faculty of medicine **update** the academic standards (ARS) for MD 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 MD 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}.**

[5] Program structure:

Program duration: 3.5 Years.

Topic	Lecture hours	Practical/Clinical hours	Total No. of hours
First part (6 months, 24 weeks)			
Pathology	24	18	42
Medical statistics and Research methodology **Use of computer in medicine**	30 20	15 10	45 30
Second part (2 Academic Years, 60 Weeks)			
Radio-diagnosis	120	120	240
Internal Medicine	30	30	60
General Surgery	28	17	45
Third Part (12 months)			
Research Thesis and discussion	continuous.		

Program courses (curriculum)

Course Title	Program ILOs Covered
1- Pathology	a.2, b.1, b.2, d.9
2—Medical statistics and Research methodology **3-Use of computer in medicine**	a.14, a.15,b.3, b.4, c.5, d.7,d.8
Training programs and workshops, field visits, seminars& other scientific activities	a.2,a.14, b.1-b.2, b.3, b.4, c.5, d.7,d.8, d.9
4-Radio-diagnosis	a.4, a.5, a.6, a.7, a.8, a.9, a.12, a.13, a.17, b.1, b.2, b.3, b.4, b.5, b.7, b.8, b.9, c.1, c.2, c.3, c.4, c.5, d.1, d.2, d.3, d4, d.5, d.6, d.7, d.8, d.9, d.10
5-Internal Medicine	a.3,b.1,b.2,d.9
6-General Surgery	a.4, b.1, b.2, d.1
Training programs and workshops, field visits, seminars& other scientific activities	a.4, a.5, a.6, a.7, a.8, a.9, a.12, a.13, a.17, b.1, b.2, b.3, b.4, b.5, b.7, b.8, b.9, c.1, c.2, c.3, c.4, c.5, d.1, d.2, d.3, d4, d.5, d.6, d.7, d.8, d.9, d.10
Research (Thesis)	a.14, a.15,b.3, b.4, c.5, d.7,d.8

[6] program admission requirements:

Conditions should be fulfilled for registration:

1- Candidates graduated from Egyptian Universities (or any approved university/institute by Minia University)

2- The Candidate should have at least "Good Rank" in their final year examination/ cumulative years, and grade "Good Rank" in internal medicine course too.

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

4- All candidates should have master's degree of radio-diagnosis with GOOD rank at least from Egyptian university or fellowship of radio-diagnosis from Egyptian ministry of health.

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

Specific Requirements:

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

2- Candidate should have computer skills and ICDL certificate.

[7] Regulations for progression and program completion

Duration of program is ≥3.5 years, starting from registration till approval of the thesis. The program is apportioned to:

First Part: . **(≥6 months from the date of registration):**

• All courses are taught as specified in the faculty internal bylaw.

• Enrollment for the first part exam is only permitted after a minimum 6 month from the registration date.

• First part exam is set twice a year in April and in October. Faculty of Medicine, Minia University:

• Students are requested to achieve a minimum score 60% in each curriculum to pass.

• Failed students are permitted to reset the exam in the unsuccessful curriculum only.

Second Part: (2 years after passing the first part exam):

• Program related specialized courses are taught.

• Enrolment for the second part exam is only permitted after a minimum 24 months from the date of passing the first part exam.

• Fulfillment of the requirements in each course as described in the template recorded in the logbook is a prerequisite for candidates to be assessed and undertake exams; as following:

      a) Seminars
      b) Workshops
      c) Journal club
      d) Conference attendance

• Two sets of exams: in April and in October.

• It is obligatory to achieve a minimum score 60% in the written exam to go for the oral and practical exams.

• Passing the written exam permits students to go for the practical and oral. Passing the written exam but failing the practical and oral exams permits students to undertake the practical and oral exams only. Failure 4 times, obligate students to retake the written exams.

Requirements for enrolment into first and second parts:

• Approval of the candidate's department to enroll for the doctoral exam.

• Approval of the other departments in which the exam will be held to enroll for the exam.

• Department's logbook that explains the training program, participation in various scientific activities, attending scientific conferences, and theses' discussions.

• In case of work break holidays, a back to work notice should be submitted 3 months before the exam.

Thesis: (2-4 years from the date of enrolment):

• Candidate can start working on the thesis after enrolment.

• It is obligatory to complete the thesis and to get it approved after passing the second part final examination and after a minimum of 24 months following official registration of the thesis protocol.

• For approval of the thesis, it is obligatory to get 2 research papers published out of the thesis with at least one published in international journal (listed in WOS or/ and Scopus, cite score ≥ 0. 5, have ISSN).

• Thesis discussion with approval is enough to pass this part.

• The maximum duration for completion and approval of thesis is 4 years. Extension for a maximum of 8 years is allowed under certain conditions but this is subjected to the approvals of the supervisors, the dean and the university president

8- Method of teaching and 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	1,2,3,4,5,6,7, 8,9,10,11	--	--
Clinical and practical (Including grand rounds)	--	--	1,2,3,4,5	--
Presentation/seminar	--	--	--	1,3,5,6,8,9, 10
Journal club	--	--	--	1,3,5,6,8,9, 10
Thesis	14,15	3,4,11	5	7,8

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 - Short essay - MCQs - Complete - True or false and correct the wrong - Commentary - Problem solving	**1,2,3,4,5,6,7,8, 9,10,11,12,13,14,15,16,17**	**1,2,5,6,9**	**-**	**-**
CLINICAL/practical EXAMS. Long case Short case CIVA (Clinical image and video assessment)	**5-11**	**1,2,6,7,8,9**	**1,2,3,4,5, 6,7,9**	
ORAL EXAM	1,2,3,4,6,7,8,9,10,11,12,,14,15,16,17	1,2,6,7,8,9	-	1,2,6,7,10
LOGBOOK	1,2,3,4,6,7,8,9,10,11,12,,14,15,16,17	-	1,2,3,4,5,6,7	1,2,3,4,5,6,7,8,9,10

Weighing of assessment:

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

Course	Written	Oral	Practical	Total
1st part				
-Use of computer in medicine	100%	100%	100%	100%
-Medical statistics and research methodology	100%	100%	100%	100%
-Pathology	100%	100%		100%
2nd part				
-Internal Medicine	40%	30%	30%	100%
-General Surgery	40%	30%	30%	100%
-Radio-diagnosis	First paper 100 Second paper 100	100%	100%	100%

[10] Evaluation of program intended learning outcomes:

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

Date of the last approval by department council: 6-3-2023
Head of the department signature

Faculty Doctorate (MD) Program	برامج الدكتوراه NAQAAE
1. Graduate attributes: **Graduate of doctorate (MD) program in any specialty should be able to:**	**1. مواصفات الخريج:** **خريج برنامج الدكتوراه في أي تخصص يجب أن يكون قادرا على:**
1.1. Mastery of basic research skills and types of study design.	1.1. إتقان أساسيات ومنهجيات البحث العلمي.
1.2. Contribute to development, application, and translation of new medical knowledge in his scholarly field through research.	1.2. العمل المستمر علي الإضافة للمعارف في مجال التخصص.
1.3. use analytical and critical skills in observing, collecting and interpreting data.	1.3. تطبيق المنهج التحليلي والناقد للمعارف في مجال التخصص والمجالات ذات العلاقة.
1.4. Integrate biomedical sciences with clinical information to explore scientific basis of medical practice for improvement of management of diseases.	1.4. دمج المعارف المتخصصة مع المعارف ذات العلاقة مستنبطا ومطورا للعلاقات البينية بينها.
1.5. Demonstrate an awareness of current health problems and recent theories in his scholarly field	1.5. إظهار وعيا عميقا بالمشاكل الجارية والنظريات الحديثة في مجال التخصص.
1.6. Identify and create solutions for occupational problems and medical malpractice conditions.	1.6. تحديد المشكلات المهنية و إيجاد حلولا مبتكرة لحلها.

English	Arabic
1.7. perform a wide range of professional skills in his scholarly field.	1.7. إتقان نطاقا واسعا من المهارات المهنية في مجال التخصص
1.8. Develop and improve new methods and approaches in the professional medical practice of the specific field.	1.8. التوجه نحو تطوير طرق و أدوات و أساليب جديدة للمزاولة المهنية.
1.9. Use information technology to improve his professional medical practice including online medical information manage information and researches.	1.9. استخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية
1.10. communicate effectively as a member or leader of health care group or other professional group and gain leadership skills.	1.10. التواصل بفاعلية وقيادة فريق عمل في سياقات مهنية مختلفة.
1.11. Make informed decisions based on available data (e.g. patient information, up to date scientific evidence and clinical judgement).	1.11. اتخاذ القرار في ظل المعلومات المتاحة.
1.12. Effective management, development & improvement of available resources and have the competency to get new resources.	1.12. توظيف الموارد المتاحة بكفاءة وتنميتها والعمل على إيجاد موارد جديدة .
1.13. Be aware of his community needs related to his field and have the ability to improve & maintain health care and carryout system-based improvement.	1.13. الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة.
1.14. Demonstrate ethical behavior, moral reasoning, honesty, integrity, dependability, and commitment to service and health equity.	1.14. التصرف ب ما يعكس الالتزام بالنزاهة والمصداقية وقواعد المهنة.
1.15. Critically reflect on one's own performance to set learning and improving goals and sharing his knowledge.	1.15. الالتزام بالتنمية الذاتية المستمرة ونقل علمه و خبراته للآخرين.
	1.8.

2. المعايير القياسية العامة: NAQAAE General Academic Reference Standards "GARS" for MD Programs	2. Faculty Academic Reference Standards (ARS) for MD Program
2.1. المعرفة والفهم: بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا علي الفهم والدراية بكل من:	2.1. Knowledge and understanding: Upon completion of the doctorate Program (MD), the graduate should have sufficient knowledge and understanding of:
2.1.1. النظريات والأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة	2.1.1. Theories, basics and updated knowledge in his scholarly field and related basic sciences.
2.1.2. أساسيات ومنهجيات وأخلاقيات البحث العلمي وأدواته المختلفة	2.1.2. Basic, methods and ethics of medical research.
2.1.3. المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص	2.1. 3. Ethical and medicolegal principles of medical practice.
2.1.4. مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص	2.1. 4. Identify Principles and fundamental of quality in professional medical practice.
2.1.5. المعارف المتعلقة بآثار ممارسته المهنية على البيئة وطرق تنمية البيئة وصيانتها	2.1.5. Knowledge related to effects of professional practice on public health and methods of maintenance and system-based improvement of public health.
2.2. المهارات الذهنية: بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا على:	2.2. Intellectual skills: Upon completion of the doctorate program (MD), the graduate must be able to:

2.2.1 Analysis and evaluation of information to correlate and deduce from it.	2.2.1.تحليل وتقييم المعلومات في مجال التخصص والقياس عليها والاستنباط منها
2.2.2. Problem solving skills based on analysis of available data for common health problems related to his scholarly field.	2.2.2. حل المشاكل المتخصصة استنادا على المعطيات المتاحة
2.2.3. Carryout research projects related to his scholarly field.	2.2.3. إجراء دراسات بحثية تضيف إلى المعارف
2.2.4. Write and publish scientific papers.	2.2.4. صياغة أوراق علمية
2.2.5. Assess risk in professional medical practice.	2.2.5. تقييم المخاطر في الممارسات المهنية
2.2.6. Establish goals, commitments and strategies for improved productivity and performance.	2.2.6. التخطيط لتطوير الأداء في مجال التخصص
2.2.7. Making professional decisions in different professional contexts.	2.2.7. اتخاذ القرارات المهنية في سياقات مهنية مختلفة
2.2.8. Demonstrate intellectual curiosity necessary for scientific discovery and innovation through active participation in research.	2.2.8. الابتكار/ الإبداع
2.2.9. Using Evidence-based strategies to during discussion or teaching others.	2.2.9. الحوار والنقاش المبني على البراهين والأدلة
2.3. Professional skills: Upon completion of the doctorate program (MD), the graduate must be able to:	**3.2. مهارات المهنية:** **بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا على:**

1.3.2. إتقان المهارات المهنية الأساسية والحديثة في مجال التخصص	2.3.1. Master the basic as well as modern professional practical and/or clinical skills.

2.3.2 . كتابة وتقييم التقارير المهنية	2.3.2. Write and evaluate professional reports.
2.3.3 . تقييم وتطوير الطرق والأدوات القائمة في مجال التخصص	2.3.3. Evaluate and improve the methods and tools in the specific field
4.3.2. استخدام الوسائل التكنولوجية بما يخدم الممارسة المهنية	2.3.4. use of technological means to serve Professional practice
2.3.5. التخطيط لتطوير الممارسة المهنية وتنمية أداء الآخرين.	2.3.5. Planning for the development of professional practice and improve of the performance of others
4.2. المهارات العامة والمنتقلة: **بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا على:**	**2.4. General and transferable skills** **Upon completion of the doctorate program (MD), the graduate must be able to:**
2.4.1. التواصل الفعال بأنواعه المختلفة	2.4.1. Communicate (in writing and orally) effectively and respectfully with peers, faculty, colleagues, and other members of the health care team, understanding the role of consultations and referrals.
2.4.2. استخدام تكنولوجيا المعلومات ب ما يخدم تطوير الممارسة المهنية	2.4.2. Use of information technology to serve Professional Practice Development.
3.4.2. تعليم الآخرين وتقييم أداءهم	2.4.3. Demonstrate effective teaching and evaluating others.

4.2.4. التقييم الذاتي والتعلم المستمر.	2.4.4. Self-assessment and continuous learning.
2.4.5. استخدام المصادر المختلفة للحصول على المعلومات والمعارف.	2.4.5. use physical information resources (print, analog), online (electronic, digital,) text, audio-video, book and journal to address medical questions and knowledge to sustain professional growth
2.4.6. العمل في فريق وقيادة فرق العمل	2.4.6. Work as a member in larger teams and as well as a team leader knows how to develop "teaming strategy" to plan how people will act and work together.
2.4.7... إدارة اللقاءات العلمية والقدرة علي إدارة الوقت	2.4.7. Manage of scientific meetings and the ability to manage Time effectively.

Date of the last approval by department council: 6-3-2023
Head of the department signature:

2. المعايير القياسية العامة: NAQAAE General Academic Reference Standards "GARS" for MD Programs	2. Faculty Academic Reference Standards (ARS) for MD Program	MD Program of radiodiagnosis Intended Learning Outcomes (ILOs)
2.1. المعرفة والفهم: بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا علي الفهم والدراية بكل من:	2.1. Knowledge and understanding: Upon completion of the doctorate Program (MD), the graduate should have sufficient knowledge and understanding of:	2.1. Knowledge and understanding:
2.1.1 النظريات والأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة	2.1.1. Theories, basics and updated knowledge in his scholarly field and related basic sciences.	a.1) Identify advanced knowledge and understanding of the principles and practices of radiology, including imaging techniques, radiopharmaceuticals, and radiation safety. a.2) Recall pathology of different medical diseases. a.3) Identify the etiologies, diagnosis and differential diagnosis of main diseases in the field of internal medicine. a.4) Recognize important radiographic features and management plans of different surgical conditions. a.5) Identify the main and advanced imaging features and differential diagnosis of pulmonary and cardiac diseases, their best imaging techniques. a.6) Recognize the hepatobiliary radiological segmentation and basic and advanced imaging features of its various pathologies.

		a.7) Identify various gastrointestinal diseases and their principle and advanced imaging criteria and clarify the differences between inflammatiry and malignant conditions to guide further treatment plan.
		a.8) Recognize the main imaging features and new emerging imaging techniques for the different neurological disorders like congenital anomalies, inflammatory,infectious conditions, autoimmune and demyelinating proscesses as well as neurological neoplasms.
		a.9) Discuss the principle imaging features, advanced techniques and protocols for the different genitourinary diseases as well as women imaging techniques.
		a.10) Identify basic and advanced imaging criteria and techniques of musculoskeletal system.
		a.11) Identify basic and advanced imaging criteria and techniques in women imaging.
		a.12) Discuss radiological contrast materials, their dosage and compare them regarding their indications and contraindications.
		a.13) Explain various methods of radiation safety like shielding, increase distance, and decrease time of exposure according to ALARA principle.
2.1.2 أساسيات ومنهجيات وأخلاقيات البحث العلمي وأدواته المختلفة	2.1.2. Basic, methods and ethics of medical research.	a.14) Outline different research methods in medical science to be able to design and conduct research studies, analyze and interpret data, and communicate research findings.
2.1.3 المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص	2.1. 3. Ethical and medicolegal principles of medical practice.	a.15) Identify the ethical and legal considerations associated with radiological practice, including patient confidentiality, informed consent, and patient radiation safety.

2.1.4 مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص .	2.1. 4. Identify Principles and fundamental of quality in professional medical practice.	a.16) Discuss the principles and measurements of quality assurance and quality improvement to the clinical practice of Radio-diagnosis.
2.1.5 المعارف المتعلقة بآثار ممارسته المهنية على البيئة وطرق تنمية البيئة وصيانتها .	2.1.5. Knowledge related to effects of professional practice on public health and methods of maintenance and system-based improvement of public health.	a.17) Identify and outline the effects of ionizing radiation and non-ionizing radiation on human health and evaluate the potential risks and benefits of radiological imaging, to improve the patient care and solve common health problems.
2.2 المهارات الذهنية: بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا على: .	**2.2. Intellectual skills:** **Upon completion of the doctorate program (MD), the graduate must be able to:**	**2.2. Intellectual skills:** **Upon completion of the doctorate program (MD), the graduate must be able to:**
2.2.1 تحليل وتقييم المعلومات في مجال التخصص والقياس عليها والاستنباط منها.	2.2.1 Analysis and evaluation of information to correlate and deduce from it.	b.1 Analyze and interpret complex radiological images: including advanced US/doppler techniques, MRIs, and CT scans, and identify any abnormalities or issues that may require further investigation.
2.2.2 حل المشاكل المتخصصة استنادا على المعطيات المتاحة .	2.2.2. Problem solving skills based on analysis of available data for common health problems related to his scholarly field.	b.2 Develop critical thinking and problem-solving skills to evaluate and interpret radiological images accurately.
2.2.3 إجراء دراسات بحثية تضيف إلى المعارف .	2.2.3. Carryout research projects related to his scholarly field.	b.3 Plan valuable and updated research projects in radio-diagnosis choosing topics that will benefit the community.
2.2.4 صياغة أوراق علمية .	2.2.4. Write and publish scientific papers.	b.4 Construct and publish a clear and concise scientific paper in radio-diagnosis topic, following the conventions of scientific writing and using appropriate terminology.
2.2.5 تقييم المخاطر في الممارسات المهنية .	2.2.5. Assess risk in professional medical practice.	b.5 Correlate and illustrate the potential risks associated with exposure to ionizing radiation techniques and imaging contrast material and develop strategies to minimize these risks. b.6 Compare new imaging technologies and assess their potential risks and

		benefits in the context of clinical practice.
. 2.2.6 التخطيط لتطوير الأداء في مجال التخصص	2.2.6. Establish goals, commitments and strategies for improved productivity and performance.	b.7 Plan for quality improvement in the field of medical education and clinical practice in Radio-diagnosis.
. 2.2.7 اتخاذ القرارات المهنية في سياقات مهنية مختلفة	2.2.7. Making professional decisions in different professional contexts.	b.8 Relate efficient diagnostic decisions using the knowledge of different techniques of radio-diagnosis b.9 Choose the appropriate imaging diagnostic tools for each case to reach correct diagnosis and best treatment plan and avoid unnecessary and/or repetitive exposure to radiation to minimize its hazards.
. 2.2.8 الابتكار/ الإبداع	2.2.8. Demonstrate intellectual curiosity necessary for scientific discovery and innovation through active participation in research.	b.10 Create and innovate plans, systems, and other issues for improvement of performance in Radio-diagnosis. And incorporate them into clinical practice.
. 2.2.9 الحوار والنقاش المبني على البراهين والأدلة	2.2.9. Using Evidence-based strategies to during discussion or teaching others.	b.11 Appraise evidence-based recommendations for further patient management relevant to analysis of results of different diagnostic imaging techniques.
2.3. مهارات المهنية: بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا على:	**2.3. Professional skills:** **Upon completion of the doctorate program (MD), the graduate must be able to:**	**2.3. Professional skills:** **Upon completion of the doctorate program (MD), the graduate must be able to:**
. 2.3.1 إتقان المهارات المهنية الأساسية والحديثة في مجال التخصص	2.3.1. Master the basic as well as modern professional practical and/or clinical skills.	c.1 Evaluate basic and advanced radiological images accurately.

. 2.3.2 كتابة وتقييم التقارير المهنية	2.3.2. Write and evaluate professional reports.	c.2 Write clear, concise, and complete radiological report reflecting the accurate interpretation of the radiological images with the use of standard medical terminology and following established guidelines.
. 2 3.3. تقييم وتطوير الطرق والأدوات القائمة في مجال التخصص	2.3.3. Evaluate and improve the methods and tools in the specific field	c.3- Apply new technologies, techniques, and research findings to provide the most effective patient care and stay up to date with the recent advances.
. 2.3.4 استخدام الوسائل التكنولوجية بما يخدم الممارسة المهنية	2.3.4. use of technological means to serve Professional practice	c.4 Practice advanced imaging technologies in radio-diagnosis such as: elastography and shear wave US, MR spectroscopy (MRS), Diffusion tensor imaging (DTI) and others.
. 2.3.5 التخطيط لتطوير الممارسة المهنية وتنمية أداء الآخرين.	2.3.5. Planning for the development of professional practice and improve of the performance of others	c.5 Conduct research and contribute to the advancement of knowledge in radiology, including the development of new diagnostic techniques, the evaluation of existing methods, and the exploration of emerging technologies.
. 2.4 المهارات العامة والمنتقلة: بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا على:	**2.4. General and transferable skills** **Upon completion of the doctorate program (MD), the graduate must be able to:**	**2.4. General and transferable skills** **Upon completion of the doctorate program (MD), the graduate must be able to:**
. 2.4.1 التواصل الفعال بأنواعه المختلفة	2.4.1. Communicate (in writing and orally) effectively and respectfully with peers, faculty, colleagues, and other members of the health care team, understanding the role of consultations and referrals.	d.1 Demonstrate effective communication skills in the context of radiology, including the ability to explain complex medical concepts to patients and their families. d.2 Provide clear and concise reports to referring physicians, and to collaborate effectively with other healthcare professionals.
. 2.4.2 استخدام تكنولوجيا المعلومات ب ما يخدم تطوير الممارسة المهنية	2.4.2. Use of information technology to serve Professional Practice Development.	d.3 Make use of information technology (IT) to access, share, and interpret medical images with the patient and other healthcare professionals, regardless of their location.

		d.4 Plan to widely use PACS system and other tools of remote viewing and consultation of teleradiology.
2.4.3 تعليم الآخرين وتقييم أداءهم .	2.4.3. Demonstrate effective teaching and evaluating others.	d.5 Develop proficiency in teaching and evaluating residents in the field of radiology, including the ability to design and deliver effective educational materials, to provide constructive feedback, and to assess performance using appropriate methods and tools.
2.4.4. التقييم الذاتي والتعلم المستمر.	2.4.4. Self-assessment and continuous learning.	d.6 Critically evaluate one's own work and identify weakness areas for improvement and be committed to lifelong learning and staying up-to-date with the latest developments in their field.
2.4.5 استخدام المصادر المختلفة للحصول على المعلومات والمعارف.	2.4.5. use physical information resources (print, analog), online (electronic, digital,) text, audio-video, book and journal to address medical questions and knowledge to sustain professional growth	d.7 Properly handle the available information resources such as medical textbooks, journals, online papers, websites and medical databases to develop a comprehensive understanding of radiology-related topics and issues.
2.4.6 العمل في فريق وقيادة فرق العمل .	2.4.6. Work as a member in larger teams and as well as a team leader knows how to develop "teaming strategy" to plan how people will act and work together.	d.8 Work effectively in multidisciplinary teams and be able to collaborate with colleagues from other specialties to provide comprehensive patient care.
2.4. 7.. إدارة اللقاءات العلمية والقدرة علي إدارة الوقت	2.4.7. Manage of scientific meetings and the ability to manage Time effectively.	d.9 Organize scientific meetings, such as conferences, seminars, and workshops. They should be able to develop agendas, coordinate presenters, and manage logistics. d-10 Manage time effectively to meet the demands of clinical practice, research, and teaching and be able to prioritize tasks, set goals, and meet deadlines.

Date of the last approval by department council: 6-3-2023
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Program topic(Course)	Program ILOs Covered
FIRST PART (24 weeks)	
1-Pathology	a.2, b.1, b.2, d.9
2- Medical statistics and Research methodology	a.14, a.15,b.3, b.4, c.5, d.7,d.8
3- use of computer in medicine	a.14, a.15,b.3, b.4, c.5, d.7,d.8
Training programs and workshops, field visits, seminars& other scientific activities	a.2,a.14, b.1-b.2, b.3, b.4, c.5, d.7,d.8, d.9
SECOND PART (60 weeks):	
4-Radio-diagnosis	a.4, a.5, a.6, a.7, a.8, a.9, a.12, a.13, a.17, b.1, b.2, b.3, b.4, b.5, b.7, b.8, b.9, c.1, c.2, c.3, c.4, c.5, d.1, d.2, d.3, d4, d.5, d.6, d.7, d.8, d.9, d.10
5-Internal Medicine	a.3,b.1,b.2,d.9
6-General Surgery	a.4, b.1, b.2, d.1
Training programs and workshops, field visits, seminars& other scientific activities	a.4, a.5, a.6, a.7, a.8, a.9, a.12, a.13, a.17, b.1, b.2, b.3, b.4, b.5, b.7, b.8, b.9, c.1, c.2, c.3, c.4, c.5, d.1, d.2, d.3, d4, d.5, d.6, d.7, d.8, d.9, d.10
THIRD PART (1 year):	
Research (Thesis)	a.14, a.15,b.3, b.4, c.5, d.7,d.8

Date of the last approval by department council: 6-3-2023 Head of the department signature:

ANNEX [IV]:

Matrix of Coverage of Program ILOs by Methods of Teaching & Learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lectures (PowerPoint, chalk, and talk)	1,2,3,4,5,6,7,8,9,10,11,12, 13, 14,15,16,17	1,2,3,4,5,6,7, 8,9,10,11	--	--
Clinical and practical (Including grand rounds)	--	--	1,2,3,4,5	--
Presentation/seminar	--	--	--	1,3,5,6,8,9, 10
Journal club	--	--	--	1,3,5,6,8,9, 10
Thesis	14,15	3,4,11	5	7,8

Date of the last approval by department council: 6-3-2023
Head of the department signature:

ANNEX [V]

Matrix of Coverage of Program ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
WRITTEN EXAM **- Short essay** **- MCQs** **- Complete** **- True or false and correct the wrong** **- Commentary** **- Problem solving**	**1,2,3,4,5,6,7,8,** **9,10,11,12,13,14,15,16,17**	**1,2,5,6,9**	**-**	**-**
CLINICAL/practical EXAMS. **Long case** **Short case** **CIVA (Clinical image and video assessment)**	**5-11**	**1,2,6,7,8,9**	**1,2,3,4,5,** **6,7,9**	
ORAL EXAM	**1,2,3,4,6,7,8,9,10,11,12,,14,15,16,17**	**1,2,6,7,8,9**	**-**	**1,2,6,7,10**
LOGBOOK	**1,2,3,4,6,7,8,9,10,11,12,,14,15,16,17**	**-**	**1,2,3,4,5,6,7**	**1,2,3,4,5,6,7,8,9,10**

Date of the last approval by department council: 6-3-2023
Head of the department signature:

Radio diagnosis course specifications for MD Degree in Radio diagnosis

Name of department: Radiology

Faculty of medicine

Minia University

<table>
<tr><td colspan="3">1. Course Information</td></tr>
<tr>
<td>• Academic Year/level: Radio diagnosis MD.</td>
<td>• Course Title: 2nd part of Radio diagnosis MD:</td>
<td>• Code: Rad 100</td>
</tr>
<tr>
<td colspan="3">• Number of teaching hours:
- Lectures: 2 hours/week
- Practical/clinical: 2 hours/week</td>
</tr>
<tr>
<td>2. Overall Aims of the course</td>
<td colspan="2">The aim of this program is to provide the postgraduate student with the advanced medical knowledge and skills essential for the mastery of practice of specialty and necessary to provide further training and practice in Radiodiagnosis. These aims will be achieved through:
1. Learn basic information for scientific research, statistical analysis and Computer skills.
.2. Practice continuous medical education with ability to teach and train others to develop themselves in the field of radiodiagnosis.
3. Acquire recent scientific knowledge in radio-diagnosis essential for the mastery of interpretation and diagnosis of complex clinical conditions.
4. Gain recent and advanced knowledge in radiological imaging (e.g. Functional imaging, MRS, DTI, MR perfusion)</td>
</tr>
<tr>
<td colspan="3">3. Intended learning outcomes of course (ILOs):
Upon completion of the course, the student should be able to:</td>
</tr>
<tr>
<td>A- Knowledge and Understanding</td>
<td colspan="2">a1. List recent advances in radiological imaging (e.g. Functional imaging, MDCT, MRI)
a2. Mention the principles and of ethics and legal aspects of professional practice in the radio-diagnosis.
a3. Discuss the effect of professional practice on the environment and the methods of environmental development and maintenance.</td>
</tr>
</table>

	a4. List basics and ethics of quality assurance in the filed of Radiodiagnosis a5. Discuss basics and ethics of scientific research and computer skills. a6. Mention the Imaging diagnostic features of the CNS and spine diseases (Neuroradiology), head and neck imaging, imaging of chest diseases, Cardiovascular and interventional radiology, Imaging of urogenital tract diseases, Imaging of bone and muscloskeletal diseases, Abdominal imaging, Women imaging & pediatric Radiology
B- Intellectual Skills	b.1. Solve radiological problems according to the given information. b.2. Appraise analytical skills in anticipating risks. b.3. Plan to improve performance in the field of radiodiagnosis. b.4. Interpret the characteristic imaging features of certain diseases and the relevant radiological and cross sectional (CT, MRI) anatomy of different body systems that facilitates the localization of the diseases. b.5. Interpret different imaging studies like X ray, CT and MRI films. b.6. Correlate between the clinical condition and the image findings for narrowing the differential diagnosis and to give the most reasonable one. b.7. Appraise imaging to guide the surgeon for biopsy of pathological lesions via exact localization of the lesions and determination of its relationship to the surrounding vital structures like vascular structure. b.8. Analyze the imaging features of the lesion in the follow up examination (post radio- and chemotherapy) and assess the efficacy of treatment.
C- Professional and Practical Skills	c.1 Write concise and clear professional radiological reports c.2 Evaluate reading and interpretation of different X-ray, CT and MRI films including the advanced imaging techniques like functional imaging. c.3. Apply information technology to serve the development of professional practice c.4. Perform the imaging modalities according to the patient complain and clinical condition to achieve the benefit from the study. c.5. Plan for advance in the field of Radiodiagnosis c.6. Practice imaging techniques of emergency cases 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. Create new successful ways in conducting information and assessment of the performance of the students
D- General and transferable Skills	By the end of the study of master program, the graduate should be able to: d.1. Maintain a professional image in manner, dress, speech as well as the interpersonal relationships. d. 2. Assess himself and identify personal learning needs. d. 3. Use different sources to obtain information and knowledge. d. 4. Work in a team, and team's leadership in various professional contexts. d. 5. Manage time effectively. d. 6. Apply continuous learning skills and continuous search of evidence based medicine. d. 7. Participate in related scientific meetings

4. Course Contents	Hours		
Topic	total	lectures	practical
Chest Imaging - Chest tumors. - Traumatic chest lesions. - Occupational diseases. - Mediastinal lesions. - Chest infections. COVID-19 infection - High resolution CT. - Vascular lesions of the chest	36	18	18
Cardio-Vascular Imaging & Interventional Radiology - Abdominal vascular lesions. - Peripheral vascular imaging. - Hepatic & Peripheral vascular intervention - MDCT Angiography (aortic, coronary, peripheral). Doppler Ultrasound applications	24	12	12

Bone & Musculoskeletal Imaging - Congenital bone diseases & dysplasia. - Metabolic bone disease. - Inflammatory and infective diseases. - Shoulder, knee & hip joint lesions. - Bone and joint infections - Bone tumors. - **Bone scan**	24	12	12
Abdomen Imaging - Adrenal gland lesions. - Splenic lesions imaging & diagnosis - Retro peritoneal masses. - Bowel lesions imaging & diagnosis. - Hepato-biliary and pancreatic pathological lesions. - Vascular lesions of the abdomen - MDCT Angiography (mesenteric). - Whole body MDCT perfusion. - Elastography (US and MRI). Contrast enhanced US.	36	18	18
Urogenital Imaging - Congenital diseases of urinary system. - Traumatic lesions of the urogenital system - Inflammatory lesions of the urogenital system - Cystic renal lesions. - Obstructive uropathy - Urinary tract tumors. - Male genital system. - Renal nuclear studies	24	12	12
Female Imaging	12	6	6

- Interpretation of breast US, mammography and MRI - Imaging of Female pelvic tumors - Imaging of Female pelvic inflammatory and infective disease. - Imaging of congenital anomalies of the female congenital system.			
Pediatric Imaging - Chest diseases in neonates and children. - Abdominal diseases in neonates and children. - Musculo-skeletal diseases and child abuse. - CNS diseases in neonates and children. Genito-urinary diseases in neonates and children	12	6	6
Central nervous system Imaging - Congenital diseases of the brain. - Metabolic brain diseases. - Brain tumors differential diagnosis . - Sellar&para-sellar lesions. - Pineal body &cerebello-pontine angle lesions . - CNS Infections. - Demylenating diseases. - Cerebro- vascular malformations of the brain. - Phakomatosis. - Hypothalamic lesions - Functional MRI techniques: diffusion, perfusion, MR spectroscopy and fiber tractography, Dynamic contrast enhanced MRI (DCE).	36	18	18
Head and neck Imaging - Tumoral & non-tumoral Orbital lesions.	24	12	12

- Laryngeal carcinoma. - parapharyngeal lesions. - Petrous pathological lesions. - Paranasal sinuses pathological lesions. Thyroid and para-thyroid nuclear studies.			
Spine Imaging - Interpretation of spine imaging. - Degenerative & traumatic and infectious lesions of the spine - Spinal cord tumors & non tumoral lesion.	12	6	6
Total	240	120	120

5. Teaching and Learning Methods	a. *Academic Lectures.* b. *Seminars.* c. *Film Reading sessions.* d. *Case presentations.* e. *Refresher Teaching Courses.* f. *Journal Reading Club.* g. *National and Local conference attendance.* h. *Thesis defense attendance.* i. *Workshop attendance.*	*j.*
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 2- Oral examination	

	3- Practical Exam	
	4- Log book	
B. Weighting of Each Method of Assessment	**1- Written examination 40%** **2- Oral examination 30%** **3- Practical 30%** **Total** **100%**	

8. List of References		
A. Course Notes/handouts	None	
B. Essential Books	8.2.1. Text book of Radiology and Ima (David Sutton). 8.2.2. Fundamentals of Diagnostic Radiolo	
C. Recommended Text Books	8.3.1. Diagnostic Imaging in CNS (Osborne). 8.3.2. Diagnostic Imaging in Head and N (Harnesberger). 8.3.3. Musculoskeletal MRI (Kaplan). 8.3.4. CT and MRI of the whole body (Hag 8.3.5. Case Review Series. 8.3.6. Radiology Review Manual (Dahnert)	
D. Periodicals, websites	8.4.1. www.rsna.org (Radio &Radiographics). 8.4.2. www.ajronline.com (American Jou of Radiology). 8.4.3. www.ajnr.org (American Journal Neuro-radiology). 8.4.4. www.esr.com (European Society and journal of Radiology).	

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 - Chest tumors. - Traumatic chest lesions. - Occupational diseases. - Mediastinal lesions. - Chest infections. COVID-19 infection - High resolution CT. - Vascular lesions of the chest	A1-6	b.5,6,7,8	C1-7	D 1-7
Cardio-Vascular Imaging & Interventional Radiology - Abdominal vascular lesions. - Peripheral vascular imaging. - Hepatic & Peripheral vascular intervention - MDCT Angiography (aortic, coronary, peripheral). Doppler Ultrasound applications	A1, A2, A6	b. 1-8	C1,2,5	D1,3,6
Bone & Musculoskeletal Imaging - Congenital bone diseases & dysplasia. - Metabolic bone disease. - Inflammatory and infective diseases. - Shoulder, knee & hip joint lesions. - Bone and joint infections - Bone tumors. - **Bone scan**	A1-6	b.5, b.8	C1,5,6	D 1-7

Abdomen Imaging - Adrenal gland lesions. - Splenic lesions imaging & diagnosis - Retro peritoneal masses. - Bowel lesions imaging & diagnosis. - Hepato-biliary and pancreatic pathological lesions. - Vascular lesions of the abdomen - MDCT Angiography (mesenteric). - Whole body MDCT perfusion. - Elastography (US and MRI). Contrast enhanced US.	A1-6	B. 1 to8	C1-6	D2,5,6,7
Urogenital Imaging - Congenital diseases of urinary system. - Traumatic lesions of the urogenital system - Inflammatory lesions of the urogenital system - Cystic renal lesions. - Obstructive uropathy - Urinary tract tumors. - Male genital system. - Renal nuclear studies	A1, A3, A6	B.1-8	C1-7	D 1-7
Female Imaging - Interpretation of breast US, mammography and MRI - Imaging of Female pelvic tumors - Imaging of Female pelvic inflammatory and infective disease. - Imaging of congenital anomalies of the female congenital system.	A1-6	B1, B5,B6,B8	C1-6	D 1-7
Pediatric Imaging	A1-6	B1,B8	C1,4,5	D1-7

- Chest diseases in neonates and children. - Abdominal diseases in neonates and children. - Musculo-skeletal diseases and child abuse. - CNS diseases in neonates and children. Genito-urinary diseases in neonates and children				
Central nervous system Imaging - Congenital diseases of the brain. - Metabolic brain diseases. - Brain tumors differential diagnosis . - Sellar&para-sellar lesions. - Pineal body &cerebello-pontine angle lesions . - CNS Infections. - Demylenating diseases. - Cerebro- vascular malformations of the brain. - Phakomatosis. - Hypothalamic lesions - 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 - Tumoral & non-tumoral Orbital lesions. - Laryngeal carcinoma. - parapharyngeal lesions. - Petrous pathological lesions. - Paranasal sinuses pathological lesions.	A1-6	B1-8	C1-7	D4,7

Thyroid and para-thyroid nuclear studies.				
Spine Imaging - Interpretation of spine imaging. - Degenerative & traumatic and infectious lesions of the spine - 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

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

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**

Blueprint of radiology postgraduates Examination Paper

	Topic	Hours	Knowledge %	Intellectual %	% of topic	N of items Per topic	Marks (Percentage %) (total100%)
1	Chest imaging	36	70	30	**15**	7	**15 %**
2	Cardiovascular imaging and interventional radiology	24	75	25	10	4	10%
3	Bone and musculoskeletal imaging	24	75	25	10	5	10%
4	Abdomen imaging	36	70	30	15	4	15%
5	Urogenital imaging	24	80	20	10	6	10%
6	Female imaging	12	75	25	5	6	5%
7	Pediatric imaging	12	70	30	5	5	5%
8	Central nervous system imaging	36	75	25	15	6	15%
9	Head and neck imaging	24	75	25	10	5	10%
10	Spine imaging	12	75	25	5	5	5%

<table>
<tr><td colspan="2">

Course specification of:

"Medical Statistics and Research Methodology"

In MD degree

</td></tr>
</table>

University: Minia

Faculty: Medicine

Department offering the course: Public health and preventive medicine department

Department offering the programme: All Clinical and Academic Postgraduate MD Students

Programme(s) on which the course is given: First part MD for all postgraduates

Academic year/ Level: First part of MD

1. Course Information		
Academic Year/level: **First part MD**	Course Title: **Medical Statistics and Research Methodology**	Code:
Number of teaching hours: - **Lectures:** 30 hours - **Practical/clinical:** 15 hours - **Total:** 45 hours		
2. Overall Aims of the course	*By the end of the course the student must be able to:* 1. Gain skills necessary for proper practice in the field of Research Methods including diagnostic, problem solving and decision making skills. 2. Apply ethical principles of scientific research with good awareness about patient´s rights. 3. Use precisely the research methodology in researches	

	4. Influence the students to adopt an analytical thinking for evidence-based medicine
	5. Enable graduate students to use statistical principles to improve their professional work and develop the concept of critical interpretation of data
	6. To use precisely computer programs SPSS, Epi Info and Excel in data analysis

3. Intended learning outcomes of course (ILOs):
Upon completion of the course, the student should be able to:

A. Knowledge and understanding	A.1. Define terms of research methodology .
	A.2. Describe the spectrum of research methodology .
	A.3. Explain tie strategies and design of research .
	A.4. Describe the study design, uses, and limitations .
	A.5. Explain evidence-based Medicine
	A.6. Define causation and association .
	A.7. Tell the principles and fundamentals of ethics.
	A.8. Describe the different sampling strategies
	A.9. Summarize the advantages and disadvantages of different sampling strategies
	A.10. Summarize different methods of samples size calculation
	A.11. Recognize the sources and the recent methods in data collection and analysis.
	A.12. Identify the types of variables
	A.13. Identify types of tabular and graphic presentation of data
	A.14. Describe the normal curves and its uses
	A.15. Identify the characters of normal distribution curve
	A.16. Identify measures of central tendency and measures of dispersion
	A.17. Explain regression analysis, its use and differentiate its types
	A.18. Define the screening tests pertinent to selected diseases and the at-risk approach in the application of screening tests
	A.19. Explain the usefulness of screening tests

B. Intellectual Skills	B.l. Apply research methods to different community health problems.
	B.2. Apply appropriate research strategies for use .
	B.3. Select appropriate research methods .
	B.4. Teach and advocate appropriately in the research design.
	B.5. Describe the normal curves
	B.6. Describe and summarize data
	B.7. Select the proper test of significance for a specific data.
	B.8. Interpret selected tests of significance and the inferences obtained from such tests
C. Professional and Practical Skills	C.1. Plan a research proposal for community diagnosis.
	C.2. Design questionnaires.
	C.3. Conduct research.
	C.4. Judge association and causation.
	C.5. Criticize for bias and confounding factors
	C.6. Design data entry file
	C.7. Validate data entry
	C.8. Manage data files
	C.9. Construct tables and graphs
	C.10. Calculate different samples sizes
	C.11. Calculate measures of central tendency and measures of dispersion
	C.12. Calculate sensitivity, specificity, and predictive values
D. General and transferable Skills	D.l. Lead a research team to conduct a specific study .
	D.2. Take part and work coherently with his associates to in research.
	D.3. Write scientific papers.
	D.4. Appraise scientific evidence
	D.5. Analyze and interpret data
	D.6. Use standard computer programs for statistical analysis effectively

4. Course Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Research methods			

Introduction : - Introduction to research. - Terminology and Rationale - Originality		3	
- Study design : -Cross sectional study and the prevalence rate -Cohort study, incidence rate, relative & attributable risk -Case-control study, Odd's ratio sampling -Experimental study and clinical trials		4	
- Sources of Errors in Medical Research **- Bias and confounding and its Control.**		3	
- Validity and reliability		2	
- The questionnaire design		2	
- Writing the Research Paper or Manuscript **- Protocol Writing**		2	2
- Critic technique for the literature review		2	2
- Association and causation		1	
- Evidence -based approach in medical practice		2	1
- Ethics of medical research		2	
Statistics			
Sampling		1	
Introduction to Sample Size Calculation		1	1
Data presentation		1	1
Tests of significance		2	
Introduction to SPSS		1	1
Proportion test			1
Chi-square test			1
Student T test, Paired T test			1
ANOVA test			1
Correlation (simple and multiple)			1
Regression			1
Screening		1	1
Total		**30**	**15**

5. Teaching and Learning Methods	**Since COVID-19 pandemic, blended learning approach was adopted that mixes virtual face-to-face interaction activities with the online learning. 60% of study method is offline and 40% of study is online** **Online learning materials are available at Minia University site** ▪ Lectures: Face to face lectures, Pre-recorded video lectures ▪ Practical lessons ▪ Assignment ▪ Online quizzes

6. **Teaching and Learning Methods for students with limited Capacity**	• Outstanding student rewarded certificate of appreciation due to high level of achievement • Limited students divided into small group to make learning more effective

7. Student Assessment

D. Student Assessment Methods	7.1- **Research assignment:** to assess general transferable skills, intellectual skills. 7.2- **Written exams:** • Short essay: to assess knowledge. • Commentary: to assess intellectual skills. 7.3- **Practical Exams:** to assess practical skills, intellectual skills. 7.4- **Oral Exams:** Oral exams to assess knowledge and understanding, attitude, communication 7.5- **Structured oral exams:** to assess knowledge.
E. Assessment Schedule (Timing of Each Method of Assessment)	Assessment 1: Final written exam week: 24-28 Assessment 2: Oral exam week: 24-28 Assessment 3: Practical exam week: 24-28
F. Weighting of Each Method of Assessment	- Final Written Examination 100% - Oral Examination 100% - Practical Examination 100% - Total 100%

8- List of References

A. Course Notes/handouts	- Department notes, lectures and handouts
B. Essential Books	- The Lancet Handbook of Essential Concepts in Clinical Research
C. Recommended Textbooks	***Research methods:***

	- **Introducing Research Methodology**; A Beginner's Guide to Doing a Research Project
	- **Understanding Clinical Research**, Renato Lopes and Robert Harrington; ISBN-10: 0071746781 | ISBN-13: 978-0071746786
	- **Users' guides to the medical literature: a manual for evidence-based clinical practice:** Guyatt, G., D. Rennie, M. Meade and D. Cook (2002), AMA press Chicago.
	- **Research Methods in Community Medicine:** Surveys, Epidemiological Research, Programme Evaluation, Clinical Trials, 6th Edition Joseph Abramson, Z. H. Abramson
	Computer:
	- Discovering statistics using IBM SPSS statistics, Field, A. (2013). sage.
	- Medical Statistics: A Guide to SPSS, Data Analysis and Critical Appraisal, Belinda Barton, Jennifer Peat - 2nd EditionEveritt, Brian S.
	- Medical statistics from A to Z: a guide for clinicians and medical students. Cambridge University Press, 2021.
	- Bowers, David. Medical statistics from scratch: an introduction for health professionals. John Wiley & Sons, 2019.
	- Aviva, P. (2005): Medical Statistics at a Glance, Blackwell Company, 2nd , ed., Philadelphia
D. Periodicals, websites	- https://phrp.nihtraining.com/users/login.php
	- http://www.jhsph.edu/
	- Journal of Biomedical Education
	- https://lagunita.stanford.edu/courses/Medicine/MedStats-

	SP/SelfPaced/about?fbclid=IwAR3nfir LM4wnuEqqUjLjk8TCR7lzPdnpGqwi n06L-GjFq32a62w3j6R5s9c

o **Course Coordinators:**

➤ **Coordinators:**

Lecturers: Dr / Chrestina Monir, Dr Shaimma Mahmoud

Head of Department:

Professor Dr. Nashwa Nabil Kamal

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

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

Nashwa N.Kamal

نموذج رقم (١١)

مسمى المقرر	Medical Statistics and Research Methodology
كود المقرر	CM 100

جامعة/أكاديمية : المنيا

كلية / معهد: الطب

قسم: الصحة العامة والطب الوقائي

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
Introduction : - Introduction to research. - Terminology and Rationale - Originality		A.1, A.2,			
- Study design : -Cross sectional study and the prevalence rate -Cohort study, incidence rate, relative & attributable risk -Case-control study, Odd's ratio sampling -Experimental study and clinical trials		A.3, A.4,	B.l, B.2, B.3, B.4,	C.1,	
- Sources of Errors in Medical Research - Bias and confounding and its Control.			B.3,	C.5	
- Validity and reliability					
- The questionnaire design				C.2,	

- Writing the Research Paper or Manuscript - Protocol Writing		B.3,	C.3,	D.1, D.2, D.3
- Critic technique for the literature review				
- Association and causation	A.6,		C.4,	
- Evidence -based approach in medical practice	A.5,			
- Ethics of medical research	A.7			
Statistics				
Sampling	A.8, A.9, A.11			D.4
Introduction to Sample Size Calculation	A.10		C.10	D.4
Data presentation	A.13, A.14	B.6	C.9	D.4
Tests of significance	A.15, A16	B.5	C.11	D.4
Introduction to SPSS	A.12	B.6	C.6, C7, C8	D.5, D.6
Proportion test	A.11	B.7, B8		D.5, D.6
Chi-square test	A.11	B.7, B8		D.5, D.6
Student T test, Paired T test	A.11	B.7, B8		D.5, D.6
ANOVA test	A.11	B.7, B8		D.5, D.6
Correlation (simple and multiple)	A.11	B.7, B8		D.5, D.6
Regression	A.17	B.7, B8		D.5, D.6
Screening	A.18, A.19	B.7, B8	C.12	D.4

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.2, A.3, A.4, A.5, A.6, A.7 , A.8,A9,A10,A11,A12,A13 A.14, A.15, A.16,A17, A.18	B.1, B.2, B.3, B.4, B5,B.6, B.7, B.8		
Practical			C1, C.3, C4, C.5, C.6, C.7, C.8. C.9, C.10, C11,C.12	
Assignment	A.11, A.13, A.18	B.7, B.8	C.2, C.6, C.8, C.9, C.10, C.12	D.1, D.2., D.4, D.5, D.6

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 paper based exam	A.3, A.4, A.5, A.6, A.7, A.8, A.9, A.14, A.15, A16, A18	B.3, B.5,		
Practical exam (Statistical exam)			C.1, C.2, C.5, C.6, C.7,C.8, C.9, C.10, C.11, C.12	
Oral exam	A.10, A11, A.12, A13, A.15, A.16, A.17, A18	B.1, B.2, B.6, B.7, B.8		D.1, D.2, D.5, D.6

Test blueprint for Research methodology course

Topic	Hour	% of topic	Total No. of items	Written exam (100 marks)		Marks (percentages)	Modified marks (Percentages)
				Knowledge	Intellectual		
Research							
Introduction: - Introduction to research. - Terminology and Rationale - Originality	3	10%	5	4	1	7%	5%
- Study design	4	13.3%	8	3	5	17%	17%
- Sources of Errors in Medical Research - Bias and confounding and its Control.	3	10%	4	2	2	13%	10%
- Validity and reliability	2	6.67%	3	2	1	7%	5%
- The questionnaire design	2	6.67%	3	1	2	5%	5%
- Writing the Research Paper or Manuscript - Protocol Writing	2	6.67%	4	1	3	13%	10%
- Critic technique for	2	6.67%	2	1	1	7%	5%

the literature review							
- Association and causation	1	3.33%	3	2	1	7%	8%
- Evidence - based approach in medical practice	2	6.67%	1	1		3%	5%
- Ethics of medical research	2	6.67%	2	2		3%	6%
Statistics							
Sampling	1	3.33%	2	1	1	4%	4%
Introduction to Sample Size Calculation	1	3.33%	1	1		2%	2%
Data presentation	1	3.33%	3	2	1	5%	4%
Tests of significance	2	6.67%	2	1	1	8%	8%
Introduction to SPSS	1	3.33%	1	1		3%	3%
Screening	1	3.33%	2	1	1	3%	3%
Total	**30**	**100%**					**100%**

Course specification of :

"Use of Computer in Medicine"

in MD degree

University: Minia

Faculty: Medicine

Department offering the course: Public health and preventive medicine department

Department offering the programme: All Clinical and Academic Postgraduate MD Students

Programme(s) on which the course is given: First part MD for all postgraduates

Academic year/ Level: First part of MD

1. Course Information		
Academic Year/level: **First part MD**	Course Title: **Use of Computer in Medicine**	Code:

• **Number of teaching hours:**
  - **Lectures:** 20 hours
  - **Practical/clinical:** 10 hours
  - **Total:** 30 hours	

2. Overall Aims of the course	*By the end of the course the student must be able to:* 1. Recognize knowledge about the software and their applications in Medicine 2. Gain skills necessary for using and managing heath care information systems
3. Intended learning outcomes of course (ILOs): *Upon completion of the course, the student should be able to:*	
A. Knowledge and understanding	A.1. Define each part of computer hardware and its function A.2. Have a basic understanding of various computer applications in medicine - for instruction, information managing, and computer based medical record, etc.

	A.3. Define telemedicine and its importance
	A.4. Recognize importance of health information technology in improvement of healthcare
	A.5. Describe electronic medical records and obstacles facing it
	A.6. Identify the concept of big data analysis
B. Intellectual Skills	B.1. Criticize adoption of telemedicine
	B.2. Discover factors constraining adoption of telemedicine
C. Professional and Practical Skills	C.1. Design framework for understanding of health information system performance
D. General and transferable Skills	D.1. Utilize computers in conducting research
	D.2. Appraise adoption of telemedicine
	D.3. Discover skills to carry out the process of improving health information system performance

4. Course Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Use of Computer in Medicine			
General concepts Introduction to Microsoft PowerPoint	6	4	2
Health Information Systems (HIS)	6	4	2
Telemedicine	6	4	2
Software Used in the Health Care	6	4	2
Big Data Analysis in Health	6	4	2
Total	**30**	**20**	**10**

5. Teaching and Learning Methods	**Since COVID-19 pandemic, blended learning approach was adopted that mixes virtual face-to-face interaction activities with the online learning. 60% of study method is offline and 40% of study is online**
	Online learning materials are available at Minia University site
	▪ Lectures: Face to face lectures, Pre-recorded video lectures

	▪ Practical lessons
	▪ Assignment
	▪ Online quizzes
6. Teaching and Learning Methods for students with limited Capacity	• Outstanding student rewarded certificate of appreciation due to high level of achievement • Limited students divided into small group to make learning more effective

7. Student Assessment

A. Student Assessment Methods	7.1- **Research assignment:** to assess general transferable skills, intellectual skills. 7.2- **Written exams:** • Short essay: to assess knowledge. • Commentary: to assess intellectual skills. 7.3- **Practical Exams:** to assess practical skills, intellectual skills. 7.4- **Oral Exams:** Oral exams to assess knowledge and understanding, attitude, communication 7.5- **Structured oral exams:** to assess knowledge.
B. Assessment Schedule (Timing of Each Method of Assessment)	Assessment 1: Final written exam week: 24-28 Assessment 2: Oral exam week: 24-28 Assessment 3: Practical exam week: 24-28
C. Weighting of Each Method of Assessment	Final Written Examination 100% Oral Examination 100% Practical Examination 100% Total 100%

8. List of References

A. Course Notes/handouts	Department notes, lectures and handouts
B. Essential Books	Essential Medical Statistics, Betty R. Kirkwood and J. A. Sterne (2000), 2nd edition
C. Recommended Textbooks	Data Management and Analytics for Medicine and Healthcare: Begoli, Edmon, Fusheng Wang, and Gang Luo. Springer, 2017.

D. Periodicals, websites	- National Institutes of Health: http://www.nih.gov - American Medical Informatics Association: http://www.amia.org/

- **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

Nashwa N.Kamal

نموذج رقم (١١)

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أكاديمية: المنيا/جامعة

معهد: الطب / كلية

قسم: الصحة العامة والطب الوقائي

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مسمى المقرر	**Use of Computer in Medicine**
كود المقرر	**CM 100**

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
Use of Computer in Medicine					
General concepts Introduction to Microsoft PowerPoint		A.1, A.2,			D.1
Health Information Systems (HIS)		A.4, A.5		C1	D.3
Telemedicine		A.3	B.1, .2		D.2
Software Used in the Health Care		A.5, A.6			D.1
Big Data Analysis in Health		A.6			

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 to A.6	B.1,		
Practical			C1	
Assignment	A.4	B.2		D1.D.2,D3

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 paper based exam	A.1, to A.6	B.1		
Practical computer exam (For SPSS, PowerPoint)			C1	D.1
Oral Exam	A.4, A..6	B.2	C.1	D.2, D.3

- o **Course Coordinators:**

➤ **Coordinators:**

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

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

- o **Head of Department**:

Professor Dr. Nashwa Nabil Kamal

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

Date of <u>last update</u> & approval by <u>department council</u>: 6/ 3 / 2023

Test blueprint for Uses of computer in Medicine course

Topic	Hour	% of topic	Total No. of items	Written exam (100 marks)		Marks (Percentages)	Modified marks (Percentages)
				Knowledge	Intellectual		
Use of Computer in Medicine							
General concepts Introduction to Microsoft PowerPoint	4	20%	6	4	2	30%	30%
Health Information Systems (HIS)	4	20%	4	4		20%	15%
Telemedicine	4	20%	6	2	4	25%	30%
Software Used in the Health Care	4	20%	5	4	1	20%	15%
Big Data Analysis in Health	4	20%	1	1		5%	10%
Total	20	100%	20			100%	100%

University: Minia

Faculty: Medicine

Department: Pathology

1.Course Information		
• **Academic Year/level:** Postgraduate, doctorate degree (1st part) of radiology	• **Course Title:** Pathology.	• **Code: DR100**
• **Number of teaching hours:** - **Lectures:** Total of 24 hours; 1 hour/week - **Practical:** Total of 18 hrs., 1 hour/week		
2. **Overall Aims of the course**	1. Explain theories, basics & recent advances in the field of pathology. 2. Appraise & interpret relevant basic information and correlate them with essential clinical data to reach a final diagnosis. 3. Plan for the development of acquisition of skills of basic & modern pathological laboratory techniques as well as principals of anatomical pathology. 4. Demonstrate competency on dealing with various biopsies and anatomical pathology reports and correlate such information with the relevant provided clinical data. 5. Learn the basics of essential techniques and follow issues related to maintenance of safety and maintenance of available resources. 6. Communicate efficiently with senior staff, colleagues, lab technical staff, other health care professionals, students, and patients. 7. Use efficiently the information technology including data entry & analysis to enhance data management and to achieve improvement of the professional practice 8. Manage time efficiently and learn to priorities tasks.	

	9. Show the skills of continuous & self-learning.

3. **Intended learning outcomes of course (ILOs):** *Upon completion of the course, the student should be able to:*	
A- Knowledge and Understanding	A1: Identify principles of pathology. A2: Identify definition, pathogenesis, types as well as its pathologic features and complications of acute inflammation. A3: List cellular response to injury, etiology and pathological features of reversible and irreversible cell injury. A4: Discuss different patterns of cellular adaptation as atrophy, hypertrophy, metaplasia and dysplasia and recognize the growth disturbances as hamartomas. A5: Recognise the pathological aspects of benign and malignant neoplasms A6: Define and discuss the main disease categories of the endocrine organs. A7Define and discuss the main disease categories of the hepatobiliary system and pancreas A8: Define and discuss the main disease categories of female breast.

B- Intellectual Skills	B1. Correlate & evaluate the gross and microscopic features of surgical specimens with available clinical data to provide a list of differential diagnosis for further advanced investigations to reach the correct diagnosis. B2. Evaluate and control efficiently potential risks that may arise during the professional practice in various clinical situations like handling and processing of specimens as well as during performing different essential laboratory techniques.
C- Professional and Practical Skills	C1. Demonstrate competency on dealing with and reporting gross features of different surgical specimens in view of adopted standards as well as quality & safety procedures. C2. Practice efficiently basic and modern laboratory techniques that include histochemical, immunohistochemical and other principal procedures such as tissue preservation, block sectioning, preparation of essential stains till handling of devices and microscopic examination, with emphasis on keeping the available resources. C3. Council expertise in the lab regarding the basics of essential techniques and issues related to maintain safety and available resources.

D- General and transferable Skills	D1. Demonstrate efficient communication & interpersonal skills in all its forms and in different situations that may involve senior staff, colleagues, students, lab technical staff, other health care professionals, and patients D.2. Use efficiently the information technology and select reliable sources of information to get essential information and updates regarding the different topics and techniques in surgical pathology. D.3. Develop skills of self-evaluation and identify personal learning needs to plan for self-development and continuous medical education D.4. Demonstrate the skills of effective time management.
4. **Course Contents**	

Topic	Lecture hours/week	Practical/Clinical hours/week	Total No. of hours hours/week
GENERAL PATHOLOGY			
1. Introduction & Inflammation	2	2	4
2. Cell injury and cell death	3	2	5
3. disturbance of growth	3	2	5
4- Neoplasia	4	3	7
5- endocrine diseases	4	3	7
6- Liver diseases	4	3	7
7- Breast diseases	4	3	7
Total	24	18	42

5. **Teaching and Learning Methods**	5.1. Lectures: Both face to face & on-line ones. 5.2. Gross lessons of histopathology 5.3. Self-learning activities Tutorial & 5.4. regular weekly seminars, case presentation, training courses & workshops.
6. **Teaching and Learning Methods for students with limited Capacity**	Not applicable
7. **Student Assessment**	
A. **Student Assessment Methods**	**1.** **Written exam** to assess the acquired knowledge & understanding as well as intellectual skills and essential professional skills. **2.** **Oral exam** to assess the student intellectual and communication skills regarding basic knowledge and understanding of the course topics, and to help the teaching staff to evaluate the % of achievement of the intended learning outcomes of the course.
B. **Assessment Schedule (Timing of Each Method of Assessment)**	• **Assessment 1: 1 written exam** by the end of course. • **Assessment 2: Oral exam,** after the written exam.

C. Weighting of Each Method of Assessment	Type of Assessment	Degree	%
	• **Written** examination	100% (marks)	
	• **Oral** examination.	100% (marks)	
	• **Total**	100% (marks)	

8. **List of References**	
A. Course Notes/handouts	1 -General pathology course notes prepared by the department staff and printed material of recorded lectures. **2-** Lectures' Handouts
B. Essential Books	1- Goldblum, John R., et al. Rosai and Ackerman's Surgical Pathology E-Book. Elsevier Health Sciences (2017).

Course Coordinator/s:
Assistant Prof. Dr. Manal Ismail Abd-Elghany

 Head of Department
Prof. Dr. Heba Mohamed Tawfik

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

Course Specification of Pathology MD degree of radiology (First part)

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مسمى المقرر:

كود المقرر:
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DR100

(A)- The matrix of coverage of course ILOs by contents

Contents	**Intended Learning Outcomes (ILOs)**			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
[1]- Introduction and Inflammation				
[2]- Cell injury and cell death				
[3]- Disturbance of growth				
[4]- Neoplasia	**A1,2,3,4,5,6,7,8**	**B 1, 2**	**C 1, 2, 3**	**D 1, 2**
[5]- Diseases of endocrine organs				
[6]- Diseases of the hepatobiliary system and pancreas				
[7]- Diseases of female breast				

MD Program Specs.   71

(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
Lecture	✓	✓	NA	NA
Practical	✓	✓	✓	✓
Presentation/seminar	NA	NA	✓	✓
Journal club	✓	✓	NA	✓
Training courses & workshops	✓	✓	✓	✓

(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	✓	✓	NA	NA
Practical exam			✓	✓
Clinical exam	NA	NA	NA	NA
Oral Exam	✓	✓	✓	✓
Assignment	✓	✓	NA	NA
Structured oral exams	NA	NA	NA	NA

Blueprint of pathology course for Doctorate degree in Radiology (1st part)

No.	Topic	ILOs	Contact Hours	Weight %
١	Introduction & Inflammation	A1,A2	2	8.5
٢	Cell injury and cell death	A3	3	12.5
٣	disturbance of growth	A4	3	12.5
٤	Neoplasia	A5	4	17
٥	endocrine diseases	A6	4	16.5
6	Liver diseases	A7	4	16.5
7	Breast diseases	A8	4	16.5
	Total		24	100

Course Specifications of Internal medicine in MD Degree in Radiology

University: Minia

Faculty: Medicine

Department: Internal Medicine

<table>
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1. Course Information

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● **Academic Year/level:** 2nd part MD Radiology

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● **Course Title:** Course Specifications of Internal Medicine in MD degree in radiology

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● **Number of teaching hours: 60 hours**

- **Lectures:** Total of 30 hours
- **Practical/clinical**: Total of 30 hours

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2. Overall Aims of the course

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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.

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3. Intended learning outcomes of course (ILOs):
Upon completion of the course, the student should be able to:

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A- Knowledge and Understanding

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A1. Recognize the basic pathology and microbiology of medical diseases.
A2. Identify the etiologies and risk factors of medical diseases.
A3. List the differential diagnosis of medical problems.
A4. Describe the various therapeutic models/alternatives used for medical problems.
A5. Enumerate the common diagnostic and laboratory techniques necessary to solve medical problems.
A6. Describe the mechanism of action, side effects and complications of common therapeutic drugs.
A7. Mention the principles, ethics and legal aspects of professional practice in the field of internal medicine.
A8. Discuss different diagnostic alternatives that help reaching a final diagnosis.

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	A9. Explain 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. B2. Choose different diagnostic alternatives that help reach a final diagnosis B3. Correlate between knowledge for professional problem solving. 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. C2. Assess normal and abnormal physical signs by proper regional examination of the body. C3. Write and evaluate medical reports. C4. Evaluate clear priority plan in the patient's management. C5. Assess methods and tools in diagnosis and management <u>in internal medicine.</u> C6. Interpret adequately the results of common laboratory investigations. C7. Interpret adequately X-ray, CT and ultrasonic images of common medical problems. 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. D2. Assess himself and identify personal learning needs. D3. Develop personal skills in writing a case summary and a simple essay. D4. Prepare and present different topics using power point and data show. D5. Use different sources for information and knowledge continuously. D6. Use information technology to serve the development of professional practice D7. Work in teamwork. D8. Manage Scientific meetings according to the available time. D9. Present problematic <u>internal medicine</u>-cases in seminars. D10. Communicate effectively by all types of effective communication.

4. Course Contents

Topic	Lecture hours	Practical/Clinical hours/week	Total No. of hours / <u>Week</u>

Neurology Paraplegia Stroke Brain tumors	8	8	16
- **Hematology**: • Anemias • paraproteinemia • hematological malignancy • Blood transfusion	8	8	16
Cardiovascular system:- • cardiomyopathy • rheumatic heart disease • Congestive heart failure	8	8	16
Hepatology and GIT:- • Liver cirrhosis • Chronic hepatitis • jaundice • granulomatous liver disease • inflammatory bowel disease • intestinal polyposis • colonic diverticular disease	10	8	16
Clinical immunology Arteritis: seropositive, seronegative vasculitis	6	6	12
Total	40	40	80

5. Teaching and Learning Methods	1-Talk and chalk method in classes. 2-Power point demonstration 3-Practical clinical examination in clinical wards. 4- Medical web sites in the Network. 5- Discussion of medical problems in clinical round. 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. 2- Log book to assess clinical and transferable skills, attendance to medical conferences and oral discussions of thesis. 3- Final written and commentary exam to assess Knowledge, understanding and intellectual skills. 4- Final oral exam to assess knowledge and understanding. 5- Final practical exam to assess practical skills.
B. Assessment Schedule (Timing of Each Method of Assessment)	Assessment 1 … Assignment…. Week: 8-16 Assessment 2…according to department schedule. Assessment 3…. Final written exam. Week …24 Assessment 4 …Final practical exam Week: 24

		Assessment 5…..Final oral exam Week….24
C.	Weighting of Each Method of Assessment	Assignment and log book: 10 % Written Exam 40% Oral Exam. 20% Practical Exam 30 % _____ Total 100%

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 24th Edition - March 1, 2022 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 Methods of Clinical examination (Salah Ibrahim)
D.	Periodicals, websites	Pubmed.com Biomed.net.com

	Free medical journal..com
	Annals of internal medicine.com

9- Facilities required for teaching and learning:

	- Library in the hospital
	- NET data information
	- Clinical staff rounds and case presentations.
	- Lectures courts.
	- In patients clinical wards teaching (bed-side teaching)
	- Seminars.
	- Clinical rounds teaching in classrooms.
	- Medical conference attendance.
	- Thesis discussion attendance.

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

Head of Department:
Prof. Dr. Youssouf Ismail Mousa

Date of <u>last update</u> & approval by department Council: 3/ 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	3 to 8	2,3	2	2	2,4

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

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

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 MD degree in Radiology (Second part) examination paper (100 marks)

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

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

Head of Department:
Prof. Dr. Youssouf Ismail Mousa

Course specification of general surgery for MD degree of Diagnostic radiology (2nd part)

Minia University   **Faculty of Medicine**   **General surgery dept.**

Course Information		
● **Academic Year/level:** 2nd part MD Radiology	● **Course Title:** Course Specifications of General surgery in MD degree in radiology	
● **Number of teaching hours: 45 hours**		
- **Lectures: 28** Total of hours		
- **Clinical/Tutorial**: **17** Total of hours		
9. Overall Aims of the course	To provide surgical knowledge, skills and attitudes essential to practice and necessary for further training in the field of general surgery through providing: 1. Knowledge essential for practice according to the national standards. 2. Skills necessary for proper management of patients including diagnostic, problem solving & decision making and operative skills. 3. Provision of ethical principles related to medical practice. 4. Active participation in community needs assessment and problems solving. 5. Maintenance of learning abilities necessary for continuous medical education. 6. Upgrading research interest and abilities.	

1- *Intended   Learning   Outcomes*

a- Knowledge & understanding:

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

a.l Mention **normal** structure & function of human body on macro & micro levels.

a.2 Discuss **normal** growth and development of human body.

a.3 List **abnormal** structure, function, growth and development of human body.

a 4. Identify **causation** of general surgical diseases and problems.

a.5. Identify **natural history** of general surgical diseases.

a.6. List **clinical picture** of general surgical diseases and problems.

a.7. Enumerate **diagnostic & laboratory techniques** necessary to establish diagnosis of general surgical diseases and problems.

a.8 Describe various **therapeutic methods/alternatives** used for general surgical diseases and problems.

a.9. Discuss **techniques of surgical operations.**

a. 10. Describe mechanism of action, advantages, disadvantages, side effects and complications of **laparoscopic surgery.**

a. 11. Discuss **scientific development** in the field of general surgery.

a.12. Mention **principles, ethics & legal aspects** of professional practice in the field of general surgery.

a.13. List the principles of **quality assurance of professional practice** in the field 6f general surgery.

a.14. List effects of **professional practice on the environment** and methods of environmental development & maintenance.

b- Intellectual skills:

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

b. 1. Interpret data acquired through **history taking** to reach a **provisional diagnosis** for general surgical problems.

b.2. Select from **different diagnostic alternatives** the ones that help reaching a **final diagnosis** for general surgical problems.

b.3. Link between knowledge for **professional problem solving**.

b.4. Conduct **research studies** and/or write a **scientific study** on a research problem.

b.5. Assess **risk in professional practices** in the field of general surgery.

b.6. Plan to **improve performance** in the field of general surgery.

b.7.Solve general surgical **problems.**

b.8. Analyze **reading of research** & **issues** related to the general surgery.

c- Professiona1& practical skills:

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

c.l. Apply the basic & modern **professional skills** in the area of general surgery.

c.2. Write and evaluate of **medical reports**.

c.3. Assess of **methods** & **tools** existing in the area of general surgery.

d- General & Transferable skills:

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

d.1. Communicate effectively by all types of **effective communication.**

d.2. Use information technology to serve **development of professional practice.**

d.3. Assess himself& identify of **personal learning needs**.

d.4. Use **different sources** to obtain information & knowledge.

d.5. Develop **rules** & **indicators** for **assessing the performance** of others.

d.6. **Work in a team** and team's leadership in various professional contexts.

d.7. **Manage** time effectively.

d.8. **Evaluate** himself continuously.

Course contents	Number of hours per week		
Topics	Lectures	Clinical	Tutorial

MD Program Specs.   88

Lymphadenopathy	4 hours	1 hour	1 hour
Management of thyroid tumors	4 hours	2 hour	1 hour
Management of testicular tumors	4 hours	2 hour	1 hour
Principles of surgical oncology	4 hours	___	___
Management of GIT and liver tumors	4 hours	2 hour	1 hour
Management of breast tumors	4 hours	2 hour	1 hour
DD of abdominal mass and retroperitoneal tumors	4 hours	2 hour	1 hour
TOTAL	28	11	6

6.   Teaching   and   learning   methods:

1. Grand rounds	اجتماع علمي موسع
2. Training courses	دورات تدريبية
3. Conference attendance	حضور مؤتمرات علمية
4. Thesis discussion	حضور مناقشات رسائل
5. Workshops	حضور ورش عمل

6. Journal club	ندوة الدوريات الحديثة
7. Case presentation	تقييم حالة مرضية
8. Seminars	لقاء علمي موسع
9. Morbidity and Mortality conference .	ندوة تحليل المخاطر المرضية أو الوفاة
10. Self education program.	برنامج التعليم الذاتي .

7.Teaching and learning methods:

- Lecture
- Practical
- Presentation/seminar
- Journal club
- Thesis discussion
- Training courses & workshops
- Other/s   (Specify)

Method of assessment	Assessed ILOs
1- Research: assignment.	- General transferable skills, intellectual skills
2- Written Exams: - Short essay. - MCQs. - Problem solving. 3- Practical Exams. 4- Clinical Exams.	- Knowledge - Knowledge, intellectual skills - intellectual skills. - General transferable skills, intellectual skills. - Practical skills, intellectual skills. - Practical skills, intellectual skills.

5-OSCE.	- Practical skills, intellectual skills. - Practical skills, intellectual skills
6-Oral Exams.	- Knowledge.
	- Knowledge.

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

Interventional radiology	مسمى المقرر

		دكتوراه جزء تاني
كود المقرر		

جامعة/أكاديمية : المنيا..

الطب........كلية / معهد

الجراحة العامة قسم :

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
Lymphadenopathy		+	+	+	+
Management of thyroid tumors		+	+	+	+
Management of testicular tumors		+	+	+	+

Principles of surgical oncology		+	+		
Management of GIT and liver tumors		+	+	+	+
Management of breast tumors		+	+	+	+
DD of abdominal mass and retroperitoneal tumors		+	+	+	+

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

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lecture	x	x		
Practical	x	x	X	

Presentation/seminar	x	x	X	x
Journal club	x	x	X	x
Thesis discussion	x	x	X	x
Training courses & workshops	x	x	X	
Other/s (Specify)				

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

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

Blueprint of General Surgery for MD radiodiagnosis (Written Exam)

(100 Marks)

Topic	Hours	Knowledge%	Intellectual%	% of topic	Mark	Actual mark
Lymphadenopathy	4	80	20	14.29	14.29	14
Management of thyroid tumors	4	80	20	14.29	14.29	14
Management of testicular tumors	4	80	20	14.29	14.29	14
Principles of surgical oncology	4	90	10	14.29	14.29	14
Management of GIT and liver tumors	4	80	20	14.29	14.29	15
Management of breast tumors	4	80	20	14.29	14.29	15
DD of abdominal mass and retroperitoneal tumors	4	80	20	14.29	14.29	14
Total	**28**			**100%**		**100**