



توصيف برنامج ماجستير (عام 2013-2014)

* معلومات أساسية : Basic information

١ - اسم البرنامج : Master of Radio-diagnosis

٢ - طبيعة البرنامج : (مشترك)

٣- الأقسام المسؤولة عن البرنامج :

• Radio-diagnosis
• General medicine, general surgery, pathology & statistics department

٤- تاريخ إقرار البرنامج فى مجلس القسم : ٢٠١٣ / ٩ / ٣

٥- تاريخ إقرار البرنامج فى مجلس الكلية ٣٥٦ : ٢٠١٣ / ٩ / ١٥

٦- مسئول البرنامج: **Ass. Prof. Hesham Farouk Hefny**

(Assistant professor of radiodiagnosis- Benha university)

٧- المراجع الداخلى: **Prof. Tamer Ahmed Kamal**

(Professor of radiodiagnosis- Benha university)

٨- المراجع الخارجى: **Prof. Magdy seteen**

(Professor of radiodiagnosis- El-Mansoura university)

* معلومات متخصصة : Professional information

١ - الأهداف العامة للبرنامج :

1- Program aims:



The overall aims of the program are to develop a clinical radiologist aware of:

- 1.a. Basic scientific knowledge of methods of scientific research.
- 1.b. Scientific analysis and criticism of knowledge in radiology and related branches.
- 1.c. Integrating scientific knowledge in radiology and other related branches to detect and develop relations between them.
- 1.d. The current radiology problems and new methods for diagnosis.
- 1.e. problem identification & finding solutions for it.
- 1.f. Using appropriate technology for practice.
- 1.g. Communicate effectively and the ability to lead teams
- 1.h. Decision-making in different professional contexts.
- 1.i. Employment of available resources in order to achieve the highest benefit in the diagnosis by different radiology tools.
- 1.j. Taking active role in the community and saving environment.
- 1.k. Ethical medical behavior.
- 1.l. Continuous scientific work and self development in radiology.

٢ - المخرجات التعليمية المستهدفة من البرنامج :

2-Intended Learning Outcomes (ILOS):

٢.أ - المعرفة والفهم :

2.a. Knowledge and Understanding

On successful completion of the program, the graduate will be able to:

- 2.a.1 Recognize the basic radiological knowledge including principles of physics, radiobiology, radiological anatomy, positions and imaging techniques.
- 2.a.2 Understand mutual influence between professional practice and its impacts on the environment
- 2.a.3 Know the scientific developments in the field of radio diagnosis of diseases .
- 2.a.4 Understand basics and ethics of scientific research.
- 2.a.5 Know the basic principles of quality control in professional practice in radiology.
- 2.a.6 Discuss basic concepts of radiological techniques, indications, contraindications, potential complications of radiological procedures and their management.



٢. ب - القدرات الذهنية :

2.b. Intellectual Skills:-

On successful completion of the program, the graduate will be able to:

- 2.b.1 . Analyze and evaluate the information given to solve problems.
- 2.b.2 Solve problems related to the diagnosis of diseases with the unavailability of some data
- 2.b.3 Integrate different knowledges to dignose different diseases on imaging basis.
- 2.b.4 Perform effective searches on a given topic.
- 2.b.5 Evaluate the possible complications associated with different radiological procedures.
- 2.b.6 Plan for the development of different imaging modalities for diagnosis.
- 2.b.7 analyze efficient decisions in different proplems.

٢. ج . مهارات مهنية وعملية :

2.c. Practical & professiona Skills:-

On successful completion of the program, the graduate will be able to:

- 2.c.1. Perform different radiological procedures and dealing with different associated complications efficiently.
- 2.c.2. Write different reports for radiological examinations which are taken during the general throughput of the normal working day of the department of radiodiagnosis.
- 2.c.3. evaluate appropriate diagnostic modality for different lesions.

٢. د . مهارات عامة :

2.d. General and transferable skills:-

By the end of this program, the graduate will be able to :

- 2.d.1. Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice.
- 2.d.2. Use of information technology to serve the professional practice in the field of radiodiagnosis
- 2.d.3. Establish life-long self-learning required for continuous professional development.
- 2.d.4. use of different sources to obtain information and knowledge.
- 2.d.5. put rules and indicators to assess the performance of others.



2.d.6. Work effectively as a member or leader of a health care team or other professional group.

2.d.7. Manage time effectively

2.d.8. Evaluate self performance and continue to learn

٣ - المعايير الأكاديمية :

3. Academic Standards :

- **Academic Reference Standards (ARS) of master Program of Radiodiagnosis**, approved in department council date 2/6/ 2013, and in faculty council no. (354) date 16 / 6 / 2013. (ملحق ١)

٤ - العلامات المرجعية :

4. References standards:

المعايير القياسية لبرامج الدراسات العليا (درجة الماجستير) الصادرة عن الهيئة القومية لجودة التعليم والإعتماد (مارس ٢٠٠٩)

Academic reference standards (ARS) , Master Program (March 2009)

, which were issued by the National Authority for Quality Assurance & Accreditation of Education NAQAAE (ملحق ٢)

(5): Program structure and contents

5 - هيكل ومكونات البرنامج :

Program duration

أ - مدة البرنامج :

a) مدة البرنامج :

- **Program duration: 4 semesters (2 years)**
- **1st part:** - One Semester (6 months).
- **2nd part:** - Two Semester (1 year).
- **Thesis:-** One Semester (at least 6months after 2nd part).

Program structure

ب - هيكل البرنامج :

- **Total hours of program:** 42 credit hours
- **Theoretical:** 14 credit hours
- **Practical :** 10 credit hour
- **Thesis:** 6 hours



- **University and faculty requirements:** 6 hours
- **Logbook:** 6 hours

Selective:

Elective:

ج - مستويات ومقررات البرنامج:

المعمدة	الساعات	الكود	المقررات	البند
6 ساعات	UNIV 601		للجامعة والكلية	متطلبات
6 ساعات			يشمل الآتي:	الجزء الأول نظري وعلمي
2 ساعة	RAD 601	Radiation Physics	مقرر علمي وعملي في الفيزياء الإشعاعية	
1 ساعة	RAD 603	Radiological Anatomy	مقرر علمي وعملي في التشريح الراديولوجي	
1 ساعة	RAD 604	Dark room principles	قواعد الغرفة المظلمة	
1 ساعة	RAD 605	Radio-Biology and nuclear medicine	مقرر علمي وعملي في بيولوجية الإشعاع والطب النووي	
1 ساعة	RAD602	Statetistics	مقرر علمي وعملي في الاحصاء	
6 ساعات			حضور الإجتماع الأسبوعي لقسم الأشعة والإجتماع الموسع مع التخصصات المختلفة والدورات التدريبية بقسم الأشعة وحضور مناقشة 6 رسائل حضور مؤتمر الكلية	كراسة الأنشطة
18 ساعة			يشمل الآتي:	الجزء الثاني



١٤ ساعة	RAD 606	3 months shifts in Different units: Neuroradiology Head & Neck radiology Musculoskeletal rad. Cardiothoracic rad. Gastrointestinal rad. Genitourinary rad. Vascular imaging and intervention. Breast imaging	مقرر علمي وإكلينيكي في التشخيص بالأشعة	
٣ ساعات	RAD 607		مقرر علمي وإكلينيكي في الأسس الإكلينيكية للجراحة والباطنة	
١ ساعة	RAD 608		الباثولوجيا مقرر علمي وعملي	
٦ ساعة				رسالة ماجستير
٤٢ ساعة				الإجمالي

First part (15 weeks duration/ 6months)

a- Compulsory courses.

Course Title	Course Code	NO. of hours per week			Total teaching hours	
		Theoretical Lectures	Seminars	Laboratory /practical		
•Radiation physics	RAD601	1		1	2	30



•Radiological anatomy and technology	RAD603	0.5	0.5	1	15
•Radiobiology and nuclear medicine	RAD 605	0.5	0.5	1	15
•Statistics	RAD 602	0.5	0.5	1	15
*dark room principles	RAD604	0.5	0.5	1	15
Log book activities				6	6
Total.					96 hours

b- Elective courses: none

c- Selective courses: none

Second part (30 weeks duration/ 12 months)

a- Compulsory courses:

Course Title	Course Code	NO. of hours per week			Total	Total teaching hours weeks
		Theoretical Lectures	Laboratory seminars	/practical		
•Radiodiagnosis	(RAD 606)	7	4	3	14	420



•Clinical bases of medicine and surgery	(RAD 607)	2	1	3	90
•Pathology	(RAD608)	0.5	0.5	1	30
Total.					540

b- Elective courses: none

c- Selective courses: none

٦- محتويات المقررات (راجع توصيف المقررات)

٧- متطلبات الإلتحاق بالبرنامج : Program admission requirements

مادة (٤): يشترط في قيد الطالب لدرجة الماجستير:

(١)

- أ- أن يكون حاصلًا على درجة البكالوريوس في الطب والجراحة من إحدى جامعات ج.م.ع أو على درجة معادلة لها من معهد علمي معترف به من الجامعة بتقدير جيد على الأقل.
- ب- يسمح للحاصل على الدبلوم وفقا لنظام هذه اللائحة وبتقدير جيد على الأقل بتسجيل رسالة لاستكمال درجة الماجستير بشرط ألا يكون قد مر أكثر من ثلاث سنوات على تاريخ حصوله على درجة الدبلوم وبغض النظر على تقديره في درجة البكالوريوس.
- ت- يسمح للحاصل على الدبلوم وعلى خلاف لنظام هذه اللائحة أن يسجل لدرجة الماجستير بشرط أن يكون تقديره في الدبلوم لا يقل عن جيد وبغض النظر عن تقديره في البكالوريوس.

(٢) أن يكون قد أمضى السنة التدريبية أو ما يعادلها (سنة الامتياز)

(٣) أن يتفرغ للدراسة لمدة سنة على الأقل في الجزء الثاني (فصلين دراسيين)



مادة (٥): يكون التقدم للقيود لدرجة الماجستير مرة واحدة في السنة خلال شهري يوليو وأغسطس من كل عام.

- تبدأ الدراسة لدرجة الماجستير في شهر أكتوبر من كل عام.

٨ - القواعد المنظمة لإستكمال البرنامج :

مادة (٦): تتولى لجنة الدراسات العليا بالكلية عن طريق لجنة تشكل لكل تخصص من أعضاء مجلس القسم التابع له المادة والقسم المانح للدرجة وضع البرنامج التفصيلي للمقررات في حدود الساعات المعتمدة الواردة باللائحة وعند الاختلاف يتم الاسترشاد بمقررات جامعة القاهرة ومقررات الشهادات العالمية الاوربية والامريكية يعتمدها مجالس الأقسام ثم يقرها مجلس الكلية وتشمل هذه الساعات محاضرات نظرية ودروس عملية وتدريب اكلينيكي ومحاضرات وندوات مشتركة.

مادة (٧): يشترط في الطالب لنيل درجة ماجستير التخصص في أحد الفروع الاكلينيكية والعلوم الطبية الأساسية:

- أ- حضور المقررات الدراسية والتدريبات الاكلينيكية والعملية والمعملية بصفة مرضية طبقا للساعات المعتمدة.
- ب- أن يقوم بالعمل كطبيب مقيم أصلي أو زائر لمدة سنة على الأقل في قسم التخصص بالنسبة للعلوم الاكلينيكية.
- ت- أن ينجح في امتحان القسمين الأول والثاني.
- ث- اجتياز الطلب لثلاث دورات في الحاسب الآلي (دورة في مقدمة الحاسب – دورة تدريبية متوسطة – دورة في تطبيقات الحاسب الآلي) وذلك قبل مناقشة الرسالة.
- ج- اجتياز اختبار التوفيل بمستوى لا يقل عن ٤٠٠ وحدة وذلك قبل مناقشة الرسالة.
- ح- أن يقوم باعداد بحث في موضوع تقره الجامعة بعد موافقة مجلس القسم ومجلس الكلية ينتهي باعداد رسالة قبلها لجنة التحكيم.

9- طرق وقواعد تقييم الملتحقين بالبرنامج



9- Students Assessment methods:

م	الطريقة	ما تقيسه من مخرجات التعلم المستهدفة
1	Written examination	To assess knowledge and understanding & intellectual skills: 2.a.1-2.a.8. and 2.b.1-2.b.9.
2	Oral examination	To assess knowledge and understanding, intellectual skills & General & transferable skills 2.a.1-2.a.8., 2.b.1-2.b.9., 2.d.1-2.d.10.
3	Practical & clinical examination	To assess knowledge and understanding, intellectual skills & practical and clinical skills and General & transferable skills: 2.a.1-2.a.8., 2.b.1-2.b.9., 2.c.1-2.c.5. and 2.d.1-2.d.10.
٤	Thesis discussion	To assess: Knowledge & understanding: 2.a.1, 2.a.3, 2.a.6 Intellectual skills: 2.b.4, 2.b.8, 2.b.9 Practical & clinical skills: 2.c.2, 2.c.3, 2.c.5 General & transferable skills: 2.d.1, 2.d.2, 2.d.4, 2.d.6, 2.d.7

Final exam:

First part

إجمالي	الدرجة				الاختبار	المقرر
	إجمالي	عملي	نظري	تدريسي		
100				100	اختبار تدريسي مدته ثلاث ساعات + اختبار اختار من متعدد	Radiation physics (RAD601)
100		25	25	50	اختبار شفوي وعملي وتدريسي	Radiological anatomy and technology (RAD 602)



100			20	50	اختبار تحريري و شفوي	Radiobiology an nuclear medicine and statistics (RAD 603-RAD 604)
300	إجمالي الدرجة					

Second part

إجمالي	الدرجة				الاختبار	المقرر
	عملي	إكلينيكي	شفوي	تحريري		
50	10		10	20	اختبار شفوي و تحريري و عملي	Raiodiagnosis (RAD 606)
66		16.5	16.5	33	اختبار شفوي و تحريري و إكلينيكي	*Clinical bases of medicine and surgery (RAD 607)
33	8		8	17	اختبار شفوي و تحريري و عملي	*Pathology (RAD 608)
600	إجمالي الدرجة					

١٠ - طرق تقويم البرنامج :

10- Evaluation of Program:

Evaluator	Tools	Signature
Internal evaluator (s) مقيم داخلي Prof.dr.ahmed farid (Professor of radiodiagnosis- Benha university)	Report	<u>1 report</u>



External Evaluator (s) مقيّم خارجي Prof. Magdy seteen Professor of radiodiagnosis- Mansoura university)	report.	<u>I report</u>
Senior student (s) طلاب السنة النهائية	Questionnaire	<u>40%</u>
Alumni الخريجون	Questionnaire	<u>50%</u>
Stakeholder (s) أصحاب العمل	Interviews	<u>Representative sample from sectors</u>
Others طرق أخرى	None	

المسؤول عن البرنامج: هشام فاروق التوقيع: التاريخ: / /

Program coordinator:

Name Dr:

signature:

Date:



توصيف المقررات

Program courses

Benha University

Faculty of Medicine

Department of Diagnostic Radiatology

Course Specification

Course title: Radiodiagnosis

(Code): RAD 604

Academic Year (2013 – 2014)

- **Department offering the course:** Diagnostic radiology Department
- **Academic year of Diagnostic radiology Master degree.**
- **Major or minor elements of the program:** Major
- **Academic level:** 2nd part.
- **Date of specification approval:**
 - Department council date 2/9/2013

A) Basic Information:

- **Allocated marks:** ٥٠٠ marks
- **Course duration:** 30 weeks of teaching
- **Teaching hours:** ١٤ hours/week = 420 total teaching hours

	Total hours
1- Lectures	330
2- Practical	90



Total	420
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B) Professional Information:

1- Overall Aim of the Course:

The overall goal of the course is to make the student be able of:

- b) having an appropriate radiological background covering the common and important emergencies and diseases.
- e) Enable development and application of appropriate professional attitudes, communication and problem solving skills.

2- Intended Learning Outcomes (ILOs):

2.a. Knowledge and understanding:

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

- 2.a.1. identify manifestation of diseases of different body systems demonstrated by conventional radiograph & US.
- 2.a.2. describe the manifestation of diseases of different body systems demonstrated by CT & MRI.
- 2.a.3. discuss application of radionuclide investigation to different body systems pathology.
- 2.a.3. explain the application, risk & contraindication of the technique of image guided biopsy of different body systems.

2.b. Intellectual Skills:

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

- 2.b.1. Classify different medical disorders.
- 2.b.2. Differentiate the current and advanced diagnostic imaging modalities and their application in medicine for diagnosis and treatment
- 2.b.3. Select the proper radiological modality for diagnosis of different medical disorders.
- 2.b.4. Interpret and able to write a comprehensive report on a radiological study with clinico- radiological interpretation to deduce the correct diagnosis or the possible differential diagnosis.

2.c. Practical and Clinical Skills:

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

- 2.c.1. Construct a proper history for the patient.
- 2.c.2. Interpret the patient data (history and imaging finding) in an organized and informative manner.



- 2.c.3. Perform Procedural Skills (special procedures).
2.c.4. Carry out the basic US and Doppler scanning.

2.d. General and transferable Skills:

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

- 2.d.1. Consider communication skills with patients.
2.d.2. Able to conduct a research work and to get benefit of the published scientific researches, and to present a short talk on an assigned topic.
2.d.3. Understand the importance of team working and peer teaching.
2.d.4. Able to communicate and keep pace with radiologists abroad.
2.d.5. Prepared to acquire & apply the recent trends in Radiology whenever available.

3- Course contents:

Subject	Lectures (hrs)	% of Total
1- Spine	21	5%
2- Neuroradiology	50	12%
3- Radiology of head and neck	30	7.5%
4- Radiology of chest	50	12%
5- Musculoskeletal radiology	50	12%
6- Gastrointestinal radiology	50	12%
7- Genitourinary radiology	35	8%
8- Vascular imaging	21	5%
9- Breast imaging	14	3.5%
10- Paediatrics imaging	42	10%
11- Interventional radiology	21	5%
12- Cardiac radiology	35	8%
Total	420	100

4- Teaching and learning methods:

METHODS USED:

- Modified lectures.
- Small group discussions.
- Problem solving.



- Practical classes.

5- Students Assessment methods:

5-A) **ATTENDANCE CRITERIA:** Faculty bylaws

5-B) **Assessment Tools:**

Tool	Purpose (ILOs)
Written examination	To assess knowledge
Oral examination	To assess knowledge, intellectual skills & general skills
Practical examination	To assess Practical and Clinical Skills

5-C) **TIME SCHEDULE:** Faculty bylaws

Exam	Week
1- Second part: - written - oral - practical & clinical	THIRTY ONE WEEK THIRTY TWO WEEK THIRTY THREE WEEK
2- Thesis	

5-D) **Weighting System:**

Examination	Marks allocated	% of Total Marks
Written (long assay)	250	50
Oral	100	20
Practical	150	30
Total	500	100%

- The minimum passing & Passing grades (60%).

FORMATIVE ASSESSMENT:

Student knows his marks after the Formative exams.

5-E) **Examinassions description:**

Examination	Description
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a- Written	e.g. MCQs, shorts assay, long essay.
b- Practical	e.g. Do, identify
c- Oral	e.g. indentify, describe

6- List of references:

6.1- Basic materials:

No

6.2- Essential books (text books):

-Text Book of Radiology and Imaging by: David Sutton.

-Clinical sonography by Roger C. Sanders.

-Differential diagnosis in computed tomography by Francis A Burger and Martti Kormano.

-Aids to radiological differential diagnosis by Stephen Chapman and Richard Nakielny.

6.3- Recommended books:

-Grainger-Allisons-Diagnostic-Radiology.

-Diagnostic imaging series.

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls:
- Information technology / AV aids.
- Small group classes
- C.T. Workstation.
- Department archive.
-

Course coordinator: Dr.Hesham Farouk

Head of Department: Prof. Medhat Refaat

Date: 2 / 6 /2013



Benha University
Faculty of Medicine

Master degree of *Department of Pathology.*
radiology_____.

Course Specification

Course title: Human Pathology for : master degree of radiology

(Code): _____(RAD 608)

Academic Year (2013 – 2014)

- **Department offering the course:** Human Pathology Department
- **Academic year of (master degree radiology) program: 2013 – 2014**
- **Major or minor elements of the program: major**
- **Academic level: 2nd part**
- **Date of specification approval:**
 - Department council date 7/9/2013
 - Faculty council date 15/9/2013

A) Basic Information:

- **Allocated marks:** 30 marks
- **Course duration:** 30 weeks of teaching



- **Teaching hours:** 1 hours/week = 30 total teaching hours

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	Hours / week	Total hours
1- Lectures	0.5	15
3- Practical	0.5	15
Total	1	30

B) Professional Information:

1- Overall Aim of the Course:

The overall goals of the course are to

- 1.1. Good application of basic pathological knowledge essential for the practice of Radiology
- 1.2. providing basic and specialized services in relation with biopsy diagnosis in the practice of medicine and investigations.
- 1.3. Application of special knowledge & its integration with others that have relation with the special practice
- 1.4. Awareness of the running problems as early tumor detection and diagnosis of gastrointestinal system and related systems
- 1.5. Diagnosis of practical problems as cases study and clinical assessments
- 1.6. Having fundamental knowledge of medical disciplines related to their clinical applications & able to use different technological tools as computer in the field of Radiology
- 1.7. Having acquired competency to be teacher, trainer, researcher and leader in the field.
- 1.8. Diagnosis, problem solving and decision making skills necessary for proper evaluation and management.
- 1.9. development of recent tools & ways essential for medical practice.
- 1.10. Awareness of his role in the progress of society and govern the environment in the light of international & local changes.
- 1.11. honesty and respect the practical rules.
- 1.12. Lifelong learning competencies necessary for continuous professional development.

2- Intended Learning Outcomes (ILOs):

2.a. Knowledge and understanding:

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

- 2.a.1 describe dissection of different types of biopsies.
- 2.a.2. describe laws in relation to the practical work, medical practice and be acquainted with related relevant amendments and also related judgments passed by constitutional courts .
- 2.a.3 Describe the clinical manifestations and differential diagnosis of common pathological cases.
- 2.a.4. Describe the scientific basis and interpretation of various diagnostic



modalities essential for Radiology

2.1.5. explain the principles that govern ethical decision making in clinical practice as well as the pathological aspect of medical malpractice.

2.a.7. identify ethics of medical research.

2.a.8. Identify basic knowledge & theories needed to support literature retrieval and further research capabilities.

2.b. Intellectual Skills:

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

2.b.1. solve problem and make decision skills necessary for proper evaluation and management.

2.b.2. analyze the risky problems that could be met during taking biopsies .

2.b.3. Combine the clinical and investigational database to be proficient in clinical problem solving.

2b.4. Plan for performance development in his practice.

2.b.5. Select the most appropriate and cost effective diagnostic procedures for each problem.

2.b.7. Formulate of research hypothesis & questions.

2.b.8. Adopt the questioning approach to own work & that of others to solve clinical problems

2.c. Practical and Clinical Skills:

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

2.c.1. diagnose and evaluate of cases and investigation.

2.c.2. diagnose and interpret all important pathological aspects for early cancer detection and assessment.

2.c.3. recognize the gross examination and able to describe the findings of different human body systems efficiently

2.c.4. Diagnose and manage different cases

2.c.5. write a report like cancer assessment report, cytological report and immunohistochemical report.

2.d. General and transferable Skills:

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

2.d.1. Work effectively as a member or a leader of an interdisciplinary team and

2.d.2. Able to put rules & regularities for evaluation of performance of others.

2.d.3. Establish life-long self-learning required for continuous professional development

2.d.4. Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice.

2.d.5. Do self criticism. .

2.d.6. Retrieve, manage, and manipulate information by all means, including electronic means.



3- Course contents:

Topic	Number of hours		
	Total	Lectures	Practical/ small groups
General Pathology	7-1/2Hrs	2-1/2hrs	5 hrs
Cell response to injury, Stem cells and repair, Tissue deposits	1-1/2	1/2	1
Inflammation ,Granulomas ,Viral diseases	2	1/2	1-1/2
Disturbance of growth Neoplasia, Developmental and genetic diseases	1-3/4	3/4	1
Circulatory disturbances, Radiation Basic imunopathology	1-1/2	1/2	1
Diagnostic methods in pathology	3/4	1/4	1/2
Special Pathology	15hrs	5hrs	10hrs
Diseases of the Cardiovascular system	3/4	1/2	1
Diseases of the respiratory system	3/4	1/2	1
Diseases of the urinary system :	3/4	1/2	1
Diseases of the gastrointestinal tract	1-1/4	1	2
Diseases of the Liver , gall bladder, pancreas	1-1/2	1-1/4	2-1/2
Diseases of the lymphatic system, spleen , blood	3/4	1/2	1/2
Diseases of musculoskeletal system	1/4	1/4	1/2



Diseases of the Endocrine:	1/2	1/2	1
	22-1/2	7-1/2	15

4- Teaching and learning methods:

Modified Lectures

1. Small group discussions
2. Problem solving.
3. Self learning

4. -General lectures & interactive learning.
- 5-Small group discussions and case studies
- 6-Practical sessions
 - a- Histopathology slide lab
 - b- Museum of pathology.

5- Students Assessment methods:

5-A) ATTENDANCE CRITERIA: Faculty bylaws

5-B) Assessment Tools:

Tool	Purpose (ILOs)
Written examination	To assess knowledge
Oral examination	To assess knowledges,intellectual skills& general skills
Practical examination	To assess practical &clinical skills

5-C) TIME SCHEDULE: Faculty bylaws

Exam	Week
3- First part: <ul style="list-style-type: none"> - written - oral - practical & clinical 	At the end of the course



4- Second part: - written - oral - practical & clinical	
5- Thesis	
4- Assignments & other activities	

5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
1- Second part: a- Written	15	50%
c- Oral	15	50%
2- Thesis		
4- Assignments & other		
Total		

- The minimum passing & Passing grades (Faculty bylaws).

FORMATIVE ASSESSMENT:

Student knows his marks after the Formative exams.

5-E) Examinations description:

Examination	Description
1- <u>Second part:</u> a- Written b- Practical c- Oral	e.g. MCQs, shorts assay, long essay, case reports, problem solving..... e.g. Do, identify e.g. How many sessions
3- <u>Thesis:</u>	
6- Assignments & other activities	e.g. Assignments, projects, practical books etc
Total	

6- List of references:

- 1- 6.1- Departmental books of General and Special histopathology, available in secretary office.
- 2- Handouts updated, administered by staff members
- 3- Museum notebook.
- 4- CDs for histopathological slides and museum specimens are available at the department.



6.2- Essential books (text books)

- Rosai and Ackerman's Surgical Pathology Juan Rosai, Mosby 2004
- Sternberg's Diagnostic surgical Pathology 4th edition, Lippincott Williams and Wilkins
- Kumar V ,Abbas AK ,Fausto N:Robbins and Cotran Pathologic Basis of Disease ,7th ed.;2005, Elsevier Saunders. Available at faculty bookshops & main library.

6.3- Periodicals, Web sites, ... etc

<http://www.pathmax.com/> <http://www-medlib.med.utah.edu/WebPath/LABS/LABMENU.html#2>
<http://www.med.uiuc.edu/PathAtlasf/titlePage.html>
<http://www.medscape.com/pathologyhome>
<http://www.gw> hyperlink <http://umc.edu/dept/path/2>
umc.edu/dept/path/2F

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls:
- Small group classes
- Laboratory
- Information technology / AV aids
- Data show
- Overhead projector
- Museum specimens
- Projector slides covering available slides in slide box

5. surgical specimens

Course coordinator: Prof. Hala Adel Agina

Head of Department: prof Abdelatef Mohamed Elbalshy

Date: 7 / 9 /2013



Benha University
Faculty of Medicine
Department of Diagnostic Radiology.

Course Specification

Course title: Radiation physics

(Code): RAD 601

Academic Year (2013 – 2014)

- **Department offering the course:** Diagnostic radiology Department
- **Academic year of Diagnostic radiology master .**
- **Major or minor elements of the program:** Major
- **Academic level:** 1st part.
- **Date of specification approval:**
 - Department council date 9/9/2013
 - Faculty council date 15/9/2013

A) Basic Information:

- **Allocated marks:** _____ 200 _____ marks
- **Course duration:** 30 weeks of teaching
- **Teaching hours:** 2 hours/week = _____ 60 _____ total teaching



hours

	Hours / week	Total hours
1- Lectures	1	30
3- Practical	1	30
4- Others	-----	-----
Total	2	60

B) Professional Information:

1- Overall Aim of the Course:

The overall goal of the course is to make by the end of the course aware of the basic principles of applied physics related to conventional radiography, mammography, US, CT and MRI.

2- Intended Learning Outcomes (ILOs):

2.a. Knowledge and understanding:

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

- 2.a.1. explain basic principle of X- ray production.
- 2.a.2. discuss principle for obtaining good X-ray quality film.
- 2.a.3. discuss the principle for obtaining good X-ray quality film.
- 2.a.4. identify principle of U/S and Doppler and how to choose proper parameters to perform good examination.

2.b. Intellectual Skills:

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

- 2.b.1. Differentiate artifact and how to overcome such artifacts in CT, X-ray, U/S and MRI.
- 2.b.2. Select the basic principle for producing MRI picture and how different parameters affect MRI image.
- 2.b.3. Differentiate different MRI sequence.
- 2.b.4. Select parameters important for choosing X-ray machine according to its use.

2.c. Practical and Clinical Skills:

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

- 2.c.1. Select proper parameters of X ray machine to get good quality films.
- 2.c.2. Use multiple US frequencies in different depth of the body.



2.c.3. Assess the CT parameters in demonstrated different body system

2.c.4. Assess the different MR sequences.

2.d. General and transferable Skills:

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

2.d.1. Maintain honesty and integrity in all interactions with teachers, colleagues and others with whom physicians must interact in their professional lives.

2.d.2. Recognize the scope and limits of their role as students as well as the necessity to seek and apply collaboration with other workers.

2.d.3. Be responsible towards work.

3- Course contents:

Subject	Lectures (hrs)	Practical(hrs)	% of Total
1- Fundamental particles and electromagnetic radiation.	1	1	3 %
2-Radioactive materials.	1	1	3 %
3-Physics of x-ray.	15	5	33 %
4-Physics of C.T.	8	2	17 %
5-Physics of U.S.	8	2	17 %
6-Physics of M.R.I.	12	4	27 %
Total	45	15	100

4- Teaching and learning methods:

METHODS USED: Modified lectures.

5- Students Assessment methods:

5-A) **ATTENDANCE CRITERIA:** Faculty bylaws



5-B) Assessment Tools:

Tool	Purpose (ILOs)
Written examination	To assess knowledge
MCQ examination	To assess knowledge & intellectual skills

5-C) TIME SCHEDULE: Faculty bylaws

Exam	Week
6- First part: - written - oral - practical & clinical	At the end of course
7- Second part: - written - oral - practical & clinical	
8- Thesis	
4- Assignments & other activities	

5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
Written (long assay)	60	60
Written (MCQ)	40	40
Total	100	100

- The minimum passing & Passing grades (60%).

FORMATIVE ASSESSMENT:

Student knows his marks after the Formative exams.

5-E) Examinassions description:

Examination	Description
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<u>Written</u>	- Long essay e.g. Enumerate , identify e.g. Physical principles of -MCQ
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6- List of references:

6.1- Basic materials:

- Lecture notes.

6.2- Essential books (text books):

Farr physics for medical imaging, second edition, Saunders El sevier: 2008.

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls:
- Information technology / AV aids

Course coordinator: Dr.Omar Moawia

Head of Department: Prof. Medhat Refaat

Date: 9/9/2013



Benha University
Faculty of Medicine
Department of Diagnostic Radiology.

Course Specification

Course title: Radiological anatomy & radiation technique

(Code): RAD 603

Academic Year (2013 – 2014)

- **Department offering the course:** Diagnostic radiology Department
- **Academic year of** Diagnostic radiology master.
- **Major or minor elements of the program:** Major
- **Academic level:** 1st part.
- **Date of specification approval:**
 - Department council date 9/9/2013
 - Faculty council date 15/9/2013

A) Basic Information:

- **Allocated marks:** 200 marks
- **Course duration:** 30 weeks of teaching
- **Teaching hours:** 1 hours/week = 30 total teaching hours



	Hours / week	Total hours
1- Lectures	0.5	15
3- Practical	0.5	15
4- Others	-----	-----
Total	1	30

B) Professional Information:

1- Overall Aim of the Course:

The overall goal of the course is to make the students by the end of the course be aware of the normal anatomy of different body systems demonstrated by Plain X-ray, US, CT and MRI. Also be aware of the technical skills needed in contrast medial different examinations.

2- Intended Learning Outcomes (ILOs):

2.a. Knowledge and understanding:

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

- 2.a.1. describe the anatomy and anatomical variants relevant to radiological examinations. In addition, knowledge of topographical anatomy as demonstrated by modern imaging techniques.
- 2.a.2. explain the techniques routinely used including principal indications and contraindications, patient preparation, equipment, contrast media, technique variations for specific indications and principal complications and their management.
- 2.a.3. discuss the commonly used contrast media, including those used in ultrasound and MR imaging, modes of administration and clinical uses, routes of elimination, contraindications, side effects, reactions and their management.

2.b. Intellectual Skills:

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

- 2.b.1. interpret normal anatomy and different anatomical variations and their significant clinical implications.
- 2.b.2. Differentiate the current and advanced diagnostic imaging modalities and their application in medicine for diagnosis and treatment
- 2.b.3. Select the proper radiological modality for diagnosis of different medical disorders.



2.c. Practical and Clinical Skills:

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

- 2.c.1. Perform contrast media related examinations.
- 2.c.2. Management of contrast media complications.
- 2.c.2. Evaluate the quality of the plain X-ray.
- 2.c.3. Simulate basic plain X-ray positions.

2.d. General and transferable Skills:

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

- 2.d.1. Work effectively in a group during preparation of seminars.
- 2.d.2. Respects the role of staff and co-staff members regardless of degree or occupation.

3- Course contents:

Subject	Lectures (hrs)	% of Total
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Technology of imaging	10	33 %
<ul style="list-style-type: none">- Types of contrast media.- GIT(barium study) techniques.- Barium Swallow.- Barium meal.- Barium follow-through.- Barium enema.-Liver, biliary tract and pancreas techniques.-Techniques of chest examination.-Techniques of urinary tract.-Techniques of reproductive system.-Techniques of bone and joints.-Techniques of arterial system.-Techniques of venous system.-Techniques of lymphatic system.-Techniques of brain examination.-Techniques of bone examination.-Imaging techniques of respiratory system.-Interventional techniques.-Interventional techniques of chest.-Angiography.-Techniques of breast imaging.-Techniques of abdominal imaging.-Techniques of nose and PNS imaging.-Techniques of neck imaging.-PET.-Nasopharynx imaging techniques.-Imaging techniques of liver.-Interventional liver techniques.-CNS angiography techniques.-Interventional techniques of head.- Skull positioning.-Upper limb positioning.-Lower limb positioning.-Abdomen positioning.-Spine positioning.-Orbit positioning.		



Radiological Anatomy

20

66%

- An introduction to the technology of imaging
- How to interpret an image
- The thorax
- The chest wall and ribs
- The breast
- The abdomen
- The renal tract, retroperitoneum and pelvis
- The head, neck, and vertebral column
- The skull and brain
- The eye
- The ear
- The extracranial head and neck
- The vertebral column and spinal cord
- The limbs
- The upper limb
- The lower limb
- Developmental anatomy
 - Obstetric imaging
 - Pediatric imaging
- CT anatomy brain.
- MRI anatomy brain.
- CT anatomy of supra-renal glands.
- Plain X-ray chest anatomy.
- Plain X-ray, CT anatomy of the spine.
- Sectional anatomy of abdomen.
- Skull anatomy.
- Female genital system anatomy.
- Radiological anatomy of chest.
- Normal cardiac anatomy.
- CNS angiography anatomy.
- MRI knee anatomy.
- MRI shoulder anatomy.
- MRI ankle anatomy.
- Anatomy of hip and sacroiliac joints.
- Elbow joint MR anatomy.
- Petrous bone anatomy.
- Sella turcica anatomy.
- Skull base anatomy.
- Joints anatomy.
- Nasopharynx anatomy.
- Neck spaces anatomy.
- Oral cavity, salivary glands anatomy.
- Anatomy of liver.

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-Maxillofacial anatomy.



Total	60	100
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4- Teaching and learning methods:**METHODS USED:**

- Modified lectures.
- Small group discussions.

5- Students Assessment methods:**5-A) ATTENDANCE CRITERIA:** Faculty bylaws**5-B) Assessment Tools:**

Tool	Purpose (ILOs)
Written examination	To assess knowledge
Oral examination	To assess knowledge, intellectual skills & general skills
Practical examination	To assess Practical and Clinical Skills

5-C) TIME SCHEDULE: Faculty bylaws

Exam	Week
9- First part: - written - oral - practical & clinical	At the end of course
10- Second part: - written - oral - practical & clinical	
11- Thesis	
4- Assignments & other activities	

5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
Written (long assay)	50	50
Oral	25	25
Practical	25	25
Total	100	100%



- The minimum passing & Passing grades (60%).

FORMATIVE ASSESSMENT:

Student knows his marks after the Formative exams.

5-E) Examinations description:

Examination	Description
a- Written	e.g. MCQs, shorts assay, long essay.
b- Practical	e.g. Do, identify
c- Oral	e.g. indentify, describe

6- List of references:

6.1- Basic materials:

No

6.2- Essential books (text books):

-Imaging Atlas of Human Anatomy by Jamie Weir and Peter H Abrahams.

-Clark's Positioning in Radiography by A.Stewart Whitley , Charles Sloane , Graham Hoadley , Adrian D. Moore , Chrissie W. Alsop.

- Chapman's Radiological Technique.

6.3- Recommended books:

- Anatomy For Diagnostic Imaging by Ryan S, McNicholas M and Eustace S, 2nd ed, Saunders/ El-Sevier.

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls:
- Information technology / AV aids.
- Small group classes

Course coordinator: Dr.Hesham Farouk

Head of Department: Prof. Medhat Refaat

Date: 9/9/2013



Course Specification of Medical Statistics

For Radiology master

1. Program on which the course is given: master Degree in Radiology.
2. Major or minor element of the program: Minor.
3. Department offering the program: Radiology Department.
4. Department offering the course: Community Medicine department.
5. Academic Year/Level: First Part.
6. Date of specification approval: department council 9-2013. .

A) Basic Information

- Course title: Medical Statistics
- Code: RAD 605
- Credit hours: 1 credit hour for one semester

B) Professional Information

1- Overall Aim of the Course:

To equip candidates with Principles of Biostatistics, types of data, methods of presentation of data, types of Epidemiological studies, Sampling, statistical methods & research methods.

To provide the candidates with the knowledge and skills necessary to practice statistical analytical methods and research methods.

To enable the candidates to evaluate the health problems.

2- Intended Learning Outcomes (ILOs):

○○○A-Knowledge and understanding:

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

- A.1 identify and devise Radiology program based on local needs.
- A.2 Describe the basics of Principles of Biostatistics, types of data, methods of presentation of data, types of Epidemiological studies, Sampling, statistical methods and research methods.

B- Intellectual Skills:

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



- B.1 Choose suitable methods for conducting research.
- B.2 Choose suitable methods for analysis of data.
- B.3 Select appropriate method for evaluate the health problem.

C. Professional Skills:

By the end of the program the graduate will be able to:

- C.1 Communicate clearly, sensitively and effectively with patients and their relatives, and colleagues from a variety of health and social care professions.
- C.2 Conduct proper counseling practices to provide appropriate basic research methods.
- C.3 Respect the role of others, superiors, colleagues and all members of the health profession .
- C.4 Conduct different types of surveys.
- C.5 Apply the principles of statistical methods for collection, presentation & analysis of all types of data.

D. General and Transferable Skills:

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

- D.1 Establish life-long self-learning required for continuous professional development.
- D.2 Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice.
- D.3 Retrieve, manage, and manipulate information by all means, including electronic means.
- D.4 Present information clearly in written, electronic and oral forms.
- D.5 Conduct counseling sessions for prevention & control of different conditions for healthy individuals, for patients as well as their families.
- D.6 Establish effective interpersonal relationship to Communicate ideas and arguments.

3- Course contents:

Topics	Hours of Lectures	Practical/Tutorial	ILOs
Types of data	1	1	A2



Collection of data: <ul style="list-style-type: none"> ▪ Sampling ▪ Screening ▪ Epidemiological studies 	3	3	A2,B1,C1,C2,C4,C5
Summarization of data: <ul style="list-style-type: none"> ▪ Measures of central tendency ▪ Measures of dispersion 	2	2	A2,B2,C2
Presentation of data: <ul style="list-style-type: none"> ▪ Tabular presentation ▪ Graphic presentation ▪ Mathematical presentation 	2	2	D3,D4
Normal distribution curve	1	1	D3,D4
Hypothesis testing	1	1	D1,D5
Analysis of data & tests of significance	2	2	B2,D3
Vital rates	2	2	A1,B3,D2
Ethics of research	1	1	C2,C3,D6
Total	15	15	

4- Teaching and learning methods:

- Lectures.
- Practical classes
- Small group discussion with case study and problem solving.

5- Students Assessment methods:

- **Assessment tools**

Tool	Purpose (ILOs)
Written examination	To assess knowledge acquisition, including problem solving
Oral examination	To assess understanding and stability of knowledge given, attitude and presentation.



▪ **Assessment schedule**

Exam	Time
Written exam	After 6 months of registration of the degree.
Oral exam	After the written exam.

▪ **Weighting System**

Examination	Marks allocated	% of Total Marks
Written	100	50%
Oral	100	50%
Total	200	100%

▪ **Examination description**

Examination	Description
<ul style="list-style-type: none"> ▪ Written 	<ul style="list-style-type: none"> ▪ A two-hour written paper composed of short essay-type questions and Case study.
<ul style="list-style-type: none"> ▪ Oral 	<ul style="list-style-type: none"> ▪ One oral examination station with 2 staff members (10-15 minutes: 4-5 questions).

6- List of references:

6.1- Basic materials like Department notebook: **Handouts** of the staff member in the department

6.2- Essential books (text books) like **Khalil IF, 1999**: Biostatistics, Cairo University

6.3- Recommended books like **Maxcy RL, 2008**: Public health and preventive medicine.

6.4- Periodicals, Web sites, etc:

- WHO.int.com
- Pub. Med
- Google
- Science direct

7- Facilities required for teaching and learning:

7.1 **Adequate infrastructure:** including teaching places (teaching class & teaching hall) provided with comfortable desks, fans, air condition, adequate sources of lighting both natural and artificial and security tools.

7.2 **Teaching tools:** including screens, black board, white board, data show, computers, laser printer, scanner & copier.

7.3 **Computer program:** for statistical analysis of data.

- **Course coordinator:** Prof Dr. Hala Mostafa El Hady



- **Head of Department:** Prof Dr. Mahmoud Fawzy El Gendy
- **Date:** 29-8-2013

الملحقات

ملحق ١ : Academic standard of the program

ملحق ٢ : المعايير القياسية العامة للدراسات العليا الصادرة عن الهيئة.

ملحق ٣ : مصفوفة مضاهاة المعايير الأكاديمية المتبناة للبرنامج مع المعايير القياسية للدراسات

العليا الصادرة عن الهيئة لدرجة الماجستير.

ملحق ٤ : مصفوفة مضاهاة المعايير الأكاديمية للبرنامج وأهداف ونواتج تعلم البرنامج

ملحق ٥ : مصفوفة مضاهاة مقررات البرنامج مع المعارف والمهارات

وثيقة المعايير الأكاديمية المرجعية لبرنامج الدبلومة

**Academic Reference Standards (ARS) for Diploma Degree in
diagnostic & intervention radiology.**

1. Graduate Attributes.

- 1.1. Specialized knowledge gained in the application of professional practice.
- 1.2. problem identification & finding solutions for it.
- 1.3. Mastery of professional skills & Using appropriate technology for practice.
- 1.4. Communicate effectively with other teams
- 1.5. Decision-making in different professional contexts.
- 1.6. Employment of available resources in order to achieve the highest benefit in the diagnosis by different radiology tools.
- 1.7. Taking active role in the community and saving environment.
- 1.8. Ethical medical behavior.
- 1.9. Continuous scientific work and self development in radiology.

2. Academic Standards.

2.1. Knowledge and understanding.

By the end of master program, the graduate should recognize and understand the followings:

- 2.1.1. Recognize the basic radiological knowledge including principles of physics, radiobiology, radiological anatomy, positions and imaging techniques.

- 2.1.2. Understand basics and ethics of scientific research.
- 2.1.3. Know the basic principles of quality control in professional practice in radiology .
- 2.1.4. Understand mutual influence between professional practice and its impacts on the environment

2.2. Intellectual skills:

By the end of master program, graduate should be able to recognize the followings:

- 2.2.1. Identify and analyze problems in the diagnosis of diseases and arranged according to their own priorities.
- 2.2.2. Solve problems related to the diagnosis of diseases .
- 2.2.3. Analysis of different topics related to disease diagnosis by different radiology tolls.
- 2.2.4. Evaluate the possible complications associated with different radiological procedures
- 2.2.5. Perform efficient decisions in different proplems.

2.3 Practical/Professional skills

By the end of master program, graduate should accept the followings skills:

- 2.3.1. Perform different radiological procedures and dealing with different associated complications efficiently.
- 2.3.2 write different reports for radiological examinations which are taken during the general throughput of the normal working day of the department of radiodiagnosis

2.4.Communication and transferable skills:

By the end of Master program, graduate should accept the following skills:

2.4.1 Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice

2.4.2 Use of information technology to serve the professional practice in the field of radiodiagnosis

2.4.3 Establish life-long self-learning required for continuous professional development

2.4.4 use of different sources to obtain information and knowledge

2.4.5 Work effectively as a member or leader of a health care team or other professional group.

2.4.6 Leadership team in professional familiar contexts

2.4.7 Evaluate self performance and continue to learn.

اعتماد مجلس القسم، بتاريخ 2013/6./2

رئيس مجلس القسم

اعتماد مجلس الكلية 354 2013/6/16

ملحق ٢ : المعايير القياسية للدراسات العليا ٢٠٠٩
الصادرة عن الهيئة القومية لضمان جودة التعليم والاعتماد

برامج ماجستير الدراسات العليا

موصفات الخريج

خريج برنامج الماجستير فى أى تخصص يجب أن يكون قادرا على :
إجادة تطبيق أساسيات ومنهجيات البحث العلمى واستخدام أدواته المختلفة
تطبيق المنهج التحليلى واستخدامه فى مجال التخصص
تطبيق المعارف المتخصصة ودمجها مع المعارف ذات العلاقة فى ماسته المهنية
إظهار وعيا بالمشاكل الجارية والرؤى الحديثة فى مجال التخصص
تحديد المشكلات المهنية وإيجاد حلول لها
إتقان نطاق مناسب من المهارات المهنية المتخصصة واستخدام الوسائل التكنولوجية المناسبة بما
يخدم ممارسته المهنية
التوصل بفاعلية والقدرة على قيادة فرق العمل
اتخاذ القرار فى سياقات مهنية مختلفة
توظيف الموارد المتاحة بما يحقق أعلى استفادة والحفاظ عليها
إظهار الوعى بدوره فى تنمية المجتمع والحفاظ على البيئة فى ضوء المتغيرات العالمية والاقليمية
التصرف بما يعكس الالتزام بالنزهة والمصداقية والالتزام بقواعد المهنة
تنمية ذاته أكاديميا ومهنيا وقادرا على التعلم المستمر

- المعايير القياسية العامة

٢-١ المعرفة والفهم :

- بانتهاى دراسة برنامج الماجستير يجب ان يكون الخريج على فهم ودراية بكل من :
- ٢-١-١ النظريات والاساسيات المتعلقة بمجال التعلم وكذا فى المجالات ذات العلاقة
 - ٢-١-٢ - التأثير المتبادل بين الممارسة المهنية وانعكاسها على البيئة
 - ٢-١-٣ التطورات العلمية فى مجال التخصص
 - ٢-١-٤ المبادئ الاخلاقية والقانونية للممارسة المهنية فى مجال التخصص
 - ٢-١-٥ مبادئ واساسيات الجودة فى الممارسة المهنية فى مجال التخصص
 - ٢-١-٦ اساسيات واخلاقيات البحث العلمى

٢-٢ المهارات الذهنية :

- بانتهاة دراسة برنامج الماجستير يجب ان يكون الخريج قادرا على :
- ١-٢-٢ تحليل وتقيم المعلومات فى مجال التخصص والقياس عليها لحل المشاكل
 - ٢-٢-٢ حل المشاكل المتخصصة مع عدم توافر بعض المعطيات
 - ٣-٢-٢ الربط بين المعارف المختلفة لحل المشاكل المهنية
 - ٤-٢-٢ اجراء دراسة بحثية او كتابة دراسة علمية منهجية حول مشكلة بحثية
 - ٥-٢-٢ تقييم المخاطر فى الممارسات المهنية فى مجال التخصص
 - ٦-٢-٢ التخطيط لتطوير الاداء فى مجال التخصص
 - ٧-٢-٢ اتخاذ القرارات المهنية فى سياقات مهنية متنوعة

٣-٢ المهارات المهنية

- بانتهاة دراسة برنامج الماجستير يجب ان يكون الخريج قادرا على :
- ١-٣-٢ اتقان المهارات المهنية الاساسية والحديثة فى مجال التخصص
 - ٢-٣-٢ كتابة وتقييم التقارير المهنية
 - ٣-٣-٢ تقييم الطرق والادوات القائمة فى مجال التخصص

٤-٢ المهارات العامة والمنتقلة

- بانتهاة دراسة برنامج الماجستير يجب ان يكون الخريج قادرا على :
- ١-٤-٢ التواصل الفعال بأنواعه المختلفة
 - ٢-٤-٢ استخدام تكنولوجيا المعلومات بما يخدم الممارسة المهنية
 - ٣-٤-٢ التقييم الذاتى وتحديد احتياجاته التعليمية
 - ٤-٤-٢ استخدام المصادر المختلفة لحصول على المعلومات والمعارف
 - ٥-٤-٢ وضع قواعد ومؤشرات تقييم اداء الاخرين
 - ٦-٤-٢ العمل فى فريق سياقات كهنية مختلفة
 - ٧-٤-٢ ادارة الوقت بكفاءة
 - ٨-٤-٢ التعلم الذاتى والمستمر

ملحق 3: مصفوفة المعايير الأكاديمية للبرنامج مع المعايير القياسية للدراسات العليا
الصادرة عن الهيئة

- مواصفات الخريج:

مواصفات الخريج بالمعايير الأكاديمية للبرنامج	مواصفات الخريج بالمعايير القياسية للدراسات العليا (درجة الدبلومة)
1.1 Specialized knowledge gained in the application of professional practice.	١.١ . تطبيق المعارف المتخصصة التي اكتسبها في ممارسته المهنية
1.2 problem identification & finding solutions for it.	١.٢ . تحديد المشكلات المهنية واقتراح حلول لها
1.3 Mastery of professional skills & Using appropriate technology for practice	١.٣ . إتقان المهارات المهنية واستخدام أجهزة الأشعة المختلفة بما يساعده في تشخيص الأمراض والمساهمة في العلاج عن طريق التشخيص الصحيح
1.4 Communicate effectively with other teams	١.٤ . التواصل وقيادة فرق العمل من خلال العمل المهني المنظومي مع باقي الأقسام بالمستشفى لتشخيص الأمراض المختلفة
1.5 Decision-making in different professional contexts.	١.٥ . اتخاذ القرار في ضوء المعلوما المتاحة
1.6 Employment of available resources in order to achieve the highest benefit in the diagnosis by different radiology tools.	١.٦ . توظيف الموارد المتاحة بكفاءة حتى يصل بالمريض الى التشخيص السليم

1.7 Taking active role in the community and saving environment	١.٧ . الوعي بدوره في تنمية المجتمع والحفاظ على البيئة
1.8 Ethical medical behavior.	١.٨ . التصرف بما يعكس الالتزام بالنزاهة والمصداقية وقواعد المهنة وتقبل المسائلة والمحاسبة
1.9 Continuous scientific work and self development in radiology	١.٩ . إدراك ضرورة تنمية ذاته والانخراط في التعليم المستمر حتى ينمي مهاراته ومستواه العلمي

أ - المعرفة والفهم:

المعايير الأكاديمية للبرنامج	المعايير القياسية العامة (Generic) للدراسات العليا (درجة الدبلومة)
<p><i>By the end of diploma program, the candidate should recognize and understand the followings:</i></p> <p>2.1.1. Recognize the basic radiological knowledge including principles of physics, radiobiology, radiological anatomy, positions and imaging techniques.</p>	<p>بأنتهاء دراسة برنامج الدبلومة يجب ان يكون الخريج على فهم ودراية بكل من:</p> <p>١.١.٢ النظريات والاساسيات والمعارف المتخصصة في مجال التشخيص بالاشعة وكذا العلوم ذات العلاقة بممارسته المهنية</p>
2.1.2 Understand basics and ethics scientific research.	٢.١.٢ المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التشخيص بالاشعة
2.1.3 Know the basic principles of quality control professional practice in radiology .	٣.١.٢ مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التشخيص بالاشعة

<p>2.1.4 Understand mutual influence between professional practice and its impacts on environment</p>	<p>٤.١.٢ تأثير ممارسة المهنة على البيئة والاشخاص والعمل على الحفاظ على البيئة وصيانتها</p>

ب - القدرات الذهنية :

المعايير الأكاديمية للبرنامج	المعايير القياسية العامة (Generic) للدراسات العليا (درجة الدبلومة)
<p><i>By the end of diploma program, candidate should be able to recognize the followings:</i></p> <p>2.2.1. Identify and analyze problems in the diagnosis of diseases and arranged according to their own priorities</p>	<p>بانتهاج دراسة برنامج الدبلومة يجب ان يكون الخريج قادرا على : ١-٢-٢ تحديد وتحليل المشاكل في تشخيص الامراض وترتيبها وفقا لأولوياتها</p>
<p>2.2.2 Solve problems related to the diagnosis of diseases .</p>	<p>٢-٢-٢ حل المشاكل المتخصصة في مجال التشخيص بالاشعة</p>
<p>2.2.3 Analysis of different topics related to disease diagnosis by different radiology tools</p>	<p>٣-٢-٢ القراءة التحليلية للأبحاث والمواضيع ذات العلاقة بتشخيص الامراض بالاشعة</p>
<p>2.2.4 Evaluate the possible complications associated with different radiological procedures</p>	<p>٤-٢-٢ تقييم المخاطر في الممارسات المهنية ومدى تأثير بعض اجهزة الاشعة على الاشخاص</p>

2.2.5 Perform efficient decisions in different problems.	٢-٢-٥ اتخاذ القرارات المهنية في ضوء المعلومات المتاحة بما يساعد في تشخيص الامراض والمساهمة في علاجها
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ج. مهارات مهنية وعملية :

المعايير الأكاديمية للبرنامج	المعايير القياسية العامة (Generic) للدراسات العليا (درجة الدبلومة)
<p><i>By the end of diploma program, candidate should accept the following skills:</i></p> <p>2.3.1. Perform different radiological procedures dealing with different associated complications efficiently.</p>	<p>بانتهاج دراسة برنامج يجب ان الماجستير يكون الخريج قادرا على : ٢-٣-١ تطبيق المهارات المهنية في مجال التشخيص بالاشعة</p>
<p>2.3.2 write different reports for radiological examinations which are taken during the general throughput of the normal working day of the department of radiodiagnosis</p>	<p>٢-٣-٢ كتابة تقارير الاشعة ووصف المرض الوصف الصحيح والوصول الى التشخيص قدر الامكان</p>

د . مهارات عامة و منتقلة :

المعايير الأكاديمية للبرنامج	المعايير القياسية العامة (Generic) للدراسات العليا (درجة الدبلومة)
<p><i>By the end of diploma program, candidate should accept the following skills:</i></p> <p>2.4.1 Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice</p>	<p>بانتهاج دراسة برنامج الدبلومة يجب ان يكون الخريج قادرا على : ٢-٤-١ التواصل الفعال بأنواعه المختلفة مع المرضى وكذلك باقي القسام الاخرى</p>

2.4.2 Use of information technology to serve professional practice in the field of radiodiagnosis	٢-٤-٢ استخدام تكنولوجيا المعلومات بما يخدم التطور في تشخيص الامراض بالاشعة.
2.4.3 Establish life-long self-learning requirements for continuous professional development	٣-٤-٢ التقييم الذاتي وتحديد احتياجاته التعليمية الشخصية باستمرار
2.4.4 use of different sources to obtain information and knowledge	٤-٤-٢ استخدام المصادر المختلفة للحصول على المعلومات والمعارف
2.4.5 Work effectively as a member or leader of a health care team or other professional group	٥-٤-٢ العمل في فريق وادارة الوقت
2.4.6 Leadership team in professional family contexts	٦-٤-٢ قيادة فريق في سياقات مهنية مألوفة
2.4.7 Evaluate self performance and continue to learn.	٧-٤-٢ التعلم الذاتي والمستمر

ملحق 4: مصفوفة مضاهاة المعايير الأكاديمية للبرنامج و أهداف و نواتج تعلم البرنامج

أهداف البرنامج	المعايير الأكاديمية للبرنامج (مواصفات الخريج):
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1.a.	1.1 Specialized knowledge gained in the application of professional practice.
1.b.	1.2 problem identification & finding solutions for it.
1.c.	1.3 Mastery of professional skills & Using appropriate technology for practice
1.d.	1.4 Communicate effectively with other teams
1.E.	1.5 Decision-making in different professional contexts.
1.F.	1.6 Employment of available resources in order to achieve the highest
1.g.	1.7 Taking active role in the community and saving environment.
1.h.	1.8 Ethical medical behavior.
1.i.	1.9 Continuous scientific work and self development in radiology.

نواتج تعلم البرنامج

المعرفة و الفهم										المعايير الأكاديمية للبرنامج		
		2.a.10	2.a.9	2.a.8	2.a.7	2.a.6	2.a.5	2.a.4	2.a.3		2.a.2.	2.a.1.
							√	√	√	√	√	<p><i>By the end of diploma program, the candidate should recognize and understand the followings:</i></p> <p>2.1.1. Recognize the basic radiological knowledge including principles of physics, radiobiology, radiological anatomy, positions and imaging techniques.</p>
						√						2.1.2 Understand basics and ethical scientific research.
								√				2.1.3 Know the basic principle quality control in professional practice in radiology .
							√					2.1.4 Understand mutual influence between professional practice and its impacts on the environment

نواتج تعلم البرنامج	
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Intellectual skills								المعايير الأكاديمية للبرنامج			
			2.b.8	2.b.7	2.b.6	2.b.5	2.b.4	2.b.3	2.b.2.	2.b.1.	المهارات الذهنية
										√	<p><i>By the end of diploma program, candidate should be able to recognize the followings:</i></p> <p>2.2.1. Identify and analyze problems in the diagnosis of diseases and arranged according to their own priorities</p>
			√							√	2.2.2 Solve problems related to diagnosis of diseases .
						√					2.2.3 Analysis of different topics related to disease diagnosis by different radiology tolls
							√				2.2.4 Evaluate the possible complications associated with different radiological procedures
					√						2.2.6 Perform efficient decisions different proplems.

نواتج تعلم البرنامج	
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Practical/Professional skills										المعايير الأكاديمية للبرنامج المهارات المهنية	
				2.c.7	2.c.6	2.c.5	2.c.4	2.c.3	2.c.2.		2.c.1.
						√				√	<p><i>By the end of diploma program, candidate should accept the followings skills:</i></p> <p>2.3.1. Perform different radiological procedures and dealing with different associated complications efficiently</p> <p>2.3.2 write different reports for radiological examinations which are taken during the general throughout the normal working day of the department of radiodiagnosis</p>
					√		√	√	√		

نواتج تعلم البرنامج	المعايير الأكاديمية للبرنامج
General and transferable skill	

المهارات العامة والمنتقلة										
										By the end of diploma program, candidate should accept the following skills:
					√	√				2.4.1 Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice
								√		2.4.2 Use of information technology to serve the professional practice in the field of radiodiagnosis
				√						2.4.3 Establish life-long self-learning required for continuous professional development
									√	2.4.4 use of different sources to obtain information and knowledge
				√						2.4.5 Work effectively as a member or leader of a health care team or other professional group
							√			2.4.6 Leadership team in professional and familiar contexts
								√		2.4.7 Evaluate self performance and continue to learn.

ملحق (5) مصفوفة المعارف والمهارات للبرنامج الدراسي

المعارف Knowledge & Understanding										ILOs	
a.10	a.9.	2.a.8	2.a.7	2.a.6	2.a.5	2.a.4	2.a.3	2.a.2	2.a.1	Courses & codes	
								■		RAD 605	radiodiagnosis
							■	■		RAD 606	General medicine in radiological basis
						■				RAD606	General surgery in radiological basis
						■				RAD607	pathology

مهارات ذهنية Intellectual Skills								ILOs	
2.b.8.	2.b.7	2.b.6	2.b.5	2.b.4	2.b.3	2.b.2	2.b.1	Courses & codes	
						■	■	RAD 605	radiodiagnosis
					■			RAD 606	General medicine in radiological basis
			■					RAD 606	General surgery in radiological basis
			■					RAD 607	Pathology

مهارات عملية و مهنية Practical & Clinical Skills								ILOs	
	2.c.7.	2.c.6	2.c.5	2.c.4	2.c.3	2.c.2	2.c.1	Courses & codes	
			■		■			RAD 605	Radiodiagnosis
				■				RAD 606	General medicine in radiological basis
					■	■		RAD 606	General surgery in radiological basis
				■		■		RAD 607	Pathology

مهارات عامة General and transferable								ILOs	
2.d.8	2.d.7.	2.d.6	2.d.5	2.d.4	2.d.3	2.d.2	2.d.1	Courses & codes	

							■	RAD 605	radiodiagnosis
				■			■	RAD 606	General medicine in radiological basis
						■	■	RAD 606	General medicine in radiological basis
							■	RAD 607	Pathology

رئيس القسم
التوقيع :

أستاذ المادة
التوقيع