جامعة بنها
كلية الطب البشرى
قسم الاشعه التشخيصيه

توصيف برنامج دكتوراة
(عام 2013-2014)

* معلومات أساسية : Basic information

١ ـ اسم البرنامج : MD of radio-diagnosis

٢ ـ طبيعة البرنامج : (مشترك)

٣- الأقسام المسئولة عن البرنامج:

- radio-diagnosis,
- general medicine,general surgery,pathology &statestics

٤- تاريخ إقرار البرنامج فى مجلس القسم : 3 / 9/ ٢٠١٣

٥- تاريخ إقرار البرنامج فى مجلس الكلية ٣٥٦: 15/ 9 / ٢٠١٣

٦- مسئول البرنامج: **Prof. Medhat Mohamed Refaat**

(Professor of radio-diagnosis and head of radio-diagnosis department - Benha university)

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

(Professor of radiodiagnosis- Benha university)

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

(Professor of radiodiagnosis- El-Mansoura university)

* معلومات متخصصة: Professional information

١ ـ الأهداف العامة للبرنامج : 1- Program aims:

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

1.a. fundamental and advanced scientific knowledge of methods of scientific research.

1.b. Continuous scientific work in radiology.

1.c. Scientific analysis and criticism of knowledge in radiology and related branches.

1.d. Integrating scientific knowledge in radiology and other related branches to detect and develop relations between them.

1.e. The current radiology problems and advanced methods for diagnosis.

1.f. proplem identification and finding solution for it.

1.g. Mastering a wide range of professional skills.

1.h. Development of new methods and tools for radiodiagnosis.

1.i. using appropriate technology for practice.

1.j. communicate effectively & ability to lead teams

1.k.decision making through the avalible data & informations.

1.l. Employment of available resources in order to achieve the highest benefit in the diagnosis by different radiology tools as well as new tools development.

1.m. Taking leading role in the community and saving environment.

1.n. Ethical medical behavior.

1.o. Continuous self development and transferring knowledge and experiences to others.

٢ ـ المخرجات التعليمية المستهدفة من البرنامج :

2-Intended Learning Outcomes (ILOS):

٢.أ ـ المعرفة والفهم :

2.a. Knowledge and Understanding

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

2.a.1 Recognize the advanced radiological knowledge including principles of physics, radiological anatomy.

2.a.2 Discuss basic and advanced concepts of radiological techniques, indications, contraindications, potential complications of radiological procedures and their management

2.a.3 understand of the morals and ethics of the scientific research.

2.a.4 know the advanced quality control in professional practice in

radiology.

2.a.5 understand mutual influence between professional practice and its impact on the environment and how to overcome it

٢. ب ـ القدرات الذهنية :

2.b. Intellectual Skills:-

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

2.b.1 Think creatively in the emergent problems.

2.b.2 Develop significant problem-solving abilities in the scientific research and every day practice.

2.b.3 Review published articles critically and to perform effective literature searches on a given topic.

2.b.4 Conduct scientific research efficiently in a professional manner.

2.b.5 Categorize the possible complications associated with different radiological procedures and methods of its solving.

2.b.6 Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice.

2.b.7 Adapt their cognitive and observation skills to enable accurate interpretation of the various medical imaging modalities employed in modern radiology.

2.b.8 Create new creations in radiodiagnosis field.

2.b.9 conduct clinic-radiological conferences and multidisciplinary meetings&perform discussions based on reasons and evidences.

٢.ج . مهارات مهنية وعملية : .

2.c. Practical & professional 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 and independently.

2.c.2. write final reporting of different radiological examinations which are taken during the general throughput of the normal working day of the department of radiodiagnosis.

2.c.3. Specify appropriate diagnostic modality for different lesions.

2.c.4. apply up to date with new developments in imaging.

2.c.5. Plan for their radiological career in short and long term.

٢.د . مهارات عامة ومنتقله :

2.d. General and transferable skills:-

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

2.d.1. Cooperate and communicate with his colleagues and staff.

2.d.2. Use advanced methods and new technology in upgrading his professional performance.

2.d.3. educate others and evaluate their performance.

2.d.4 Apply methods of active learning.

2,d.5 use different sources to obtain information &knowledges.

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

2.d.7 manage scientific meeting and manage time effectively.

٣ ـ المعايير الأكاديمية :

3. Academic Standards :

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

٤ ـ العلامات المرجعية :

4. references standards :

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

Academic reference standards ARS ,MD program Marsh 2009 which were issued by national authority for assurance & accreditation, **NAQAAE.**

(ملحق ٢)

5 ـ هيكل ومكونات البرنامج : (5): Program structure and contents

أ ـ مدة البرنامج :

a) Program duration: 5 semesters (2.5 years)

- **1st part:** - One Semester (6 months).
- **2nd part:** - Three Semesters (1.5 years).
- **Thesis:** - Two years from the beginning of the 2nd part.

b) Program structure:

- **Total hours of program** ٦٠ credit hours
- **Theoretical:** 20 credit hours
- **Practical:** 10 credit hours
- **Thesis:** 15 credit hours
- **Logbook:** 15credit hours

ب ـ هيكل البرنامج:

ج- مستويات ومقررات البرنامج:

البند	المقررات		الكود	الساعات المعتمدة
جزء أول	علوم أساسية:			٦ ساعات
	باطنة عامة		RAD 701	١
	جراحة عامة		RAD 702	١
	باثولوجيا		RAD 703	١
	تشريح مقطعي متقدم	Advanced sectional anatomy	RAD 704	١
	إحصاء وطرق بحثية		RAD 705	١

	علوم حاسب آلي	Computer science RIS (radiology information system) & PACS (Picture archiving system)	RAD 706	١
جزء ثاني	مواد التخصص			٢٤ ساعة
	أساسيات علم الأشعة	A-Basic RADIOLOGY		٢٢
	أشعة الجهاز العصبي	Neuroradiology	RAD 707	٣
	أشعة الوجه والرقبة	Radiology of face and neck	RAD 708	٢
	أشعة الجهاز الحركي	Musculoskeletal radiology	RAD 709	٣
	أشعة القلب والصدر	Radiology of chest & heart	RAD 710	٣
	أشعة الجهاز الهضمي	Gastrointestinal radiology	RAD 711	٣
	أشعة المسالك البولية والتناسلية	Genitourinary radiology	RAD 712	٢
	أشعة الأوعية الدموية	Vascular imaging	RAD 713	١
	أشعة الثدي	Breast imaging	RAD 714	١

	أشعة الأطفال	Pediatric radiology	RAD 715	٢
	الأشعة التداخلية	Interventional radiology	RAD 716	١
	علم الأشعة للمجموعات الخاصة	B- Radiology of specific Entities		٢
	أشعة رعاية مركزة	Intensive care radiology	RAD 717	
	أشعة الطوارئ	Emergency radiology	RAD 718	
	أشعة الأورام	Oncologic imaging	RAD 719	

	أشعة المسنين	Geriatric imaging	RAD 720	
	أفاق جديدة	New Frontiers	RAD 721	
كراسة أنشطة	تشمل دورة إعداد المعلم الجامعي	والمؤتمرات والندوات الآتية:		١٥ ساعة
		Radiology depart. Meeting		٣
		Clinical meetings of departments related to radiology		٢
		Present scientific talk		٣
		Assist in teaching activities		٢
		Conference & scientific round		١
		Research and CME		٢
		Thesis discussions		٢
رسالة				١٥ ساعة
إجمالي				٦٠ ساعة

First part (15 weeks duration/6months)

a- Compulsory courses:

Course Title	Course Code	NO. of hours per week			Total teaching hours
		Theoretical		Laboratory /practical	Total
		Lectures	Seminars		

• Advanced radiological anatomy	RAD 704	0.5	0.25	0.25	1	15
•Clinical bases of medicine and surgery.	RAD 701	0.5		0.5	`1	15
	RAD 702	0.5		0.5	1	15
•Pathology	RAD 703	0.5		0.5	1	15
Statistics	RAD705	0.5		0.5	1	15
علوم حاسبه	RAD 706	0.5		0.5	1	15
Total:						90 Hrs

b- Elective courses: none

c- selective courses:

Second part (45 weeks duration/18 months)

a- Compulsory courses:

Course Title	Course Code	NO. of hours per week				Total teaching hours weeks
		Theoretical		Laboratory /practical	Total	
		Lectures	seminars			
Radiodiagnos	RAD705	12	6	6	24	1080
Log book activities					15	675
Thesis					15	675

b- Elective courses: none

c- selective courses:

- محتويات المقررات (راجع توصيف المقررات)

٧ ـ متطلبات الإلتحاق بالبرنامج Program admission requirements

يشترط فى قيد الطالب لدرجة الدكتوراة:

مادة (٢٣) : يشترط لقيد الطالب لدرجة الدكتوراه فى الطب أو الجراحة أو العلوم الطبية الأساسية أن يكون حاصلا على درجة الماجستير فى مادة التخصص بتقدير جيد على الأقل من إحدى جامعات ج ٠ م ٠ ع أو على درجة معادلة لها من معهد علمى أخر معترف به من الجامعة ٠

☒ **مدة الدراسة لنيل الدكتوراه سنتان ونصف موزعة كا لاتى :٠**

- **جزء أول :** علوم أساسية ٠ فصل دراسى لمدة ستة شهور (٦ ساعات معتمدة) ومن

يرسب يعيد مادة الرسوب فقط ٠

- **الجزء الثانى** : ثلاث فصول دراسية لمدة سنة ونصف (٣٩) ساعة معتمدة يستوفى خلالها الطالب الساعات المعتمدة ثم يسمح له بالتقدم لامتحان التحريرى وإذا اجتاز الامتحان التحريرى بنجاح يحق له التقدم الى الامتحان الشفهى والعملى والإكلينيكي خلال شهر من تاريخ الامتحان التحريرى ٠

- **رسالة (١٥ ساعة معتمدة)**

تبدأ الدراسة عند بداية التسجيل تنتهى بامتحان شامل فى نهاية كل أربع فصول دراسية بعد اجتياز الطالب امتحانات الجزء الأول بنجاح يسمح له بتسجيل رسالة لمدة أربعة فصول دراسية تبدأ عند بداية الفصل الدراسى الثانى وتناقش بعد مرور عامين على الأقل من تاريخ تسجيل الرسالة على أن تكون المناقشة بعد ستة اشهر على الأقل مع اجتياز الامتحان التحريرى والإكلينيكية والشفهى (الامتحان الشامل) ٠

يمنح الطالب الدرجة بعد مناقشة الرسالة واجتياز الامتحان الشامل ٠

- يكون التقدم للقيد لدرجة الدكتوراه مر تين فى السنة خلال شهرى مارس وأكتوبر من كل عام ٠

8- 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 التفصيلى للمقررات فى 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 اكلينيكى ومحاضرات وندوات مشتركة.

مادة (٧): يشترط فى الطالب لنيل درجة ماجستير التخصص فى 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 أصلى أو زائر لمدة سنة على الأقل فى قسم التخصص بالنسبة للعلوم الاكلينيكية.

ت- أن ينجح فى امتحان القسمين الأول والثانى.

ث- اجتياز الطلب لثلاث دورات فى الحاسب الآلى (دورة فى مقدمة الحاسب – دورة تدريبية متوسطة – دورة فى تطبيقات الحاسب الآلى) وذلك قبل مناقشة الرسالة.

ج- اجتياز اختبار التويفل بمستوى لايقل عن ٤٠٠ وحدة وذلك قبل مناقشة الرسالة.

ح- أن يقوم باعداد بحث فى موضوع تقره الجامعة بعد موافقة مجلس القسم ومجلس الكلية ينتهى باعداد رسالة تقبلها لجنة التحكيم.

9- طرق وقواعد تقييم الملتحقين بالبرنامج - Students Assessment Methods

م	الطريقة	ما تقيسة من مخرجات التعلم المستهدفة
1	Written examination	To assess knowledge and understanding & intellectual skills: **2.a.1-2.a.8 2.b.1-2.b.11**
2	Oral examination	To assess knowledge and understanding, intellectual skills & General & transferable skills **2.a.1-2.a.8 2.b.1-2.b.١١ 2.d.1-2.d.١٠**
3	Clinical examination	To assess knowledge and understanding, intellectual skills & practical and clinical skills and General & transferable skills: **2.a.1-2.a.٨ 2.b.1-2.b.١١** **2.c.1-2.c.7 2.d.1-2.d.10,**
٤	Thesis Discussion	To assess: Knowledge & understanding: **2.a.1, 2.a.2, 2.a.5** Intellectual skills: **2.b.1, 2.b.3, 2.b.4, 2.b.9, 2.b.10** Practical &clinical skills: **2.c.3, 2.c.4, 2.c.7** General & transferable skills: **2.d.1, 2.d.2, 2.d.5, 2.d.6, 2.d.7**

Final exam:

First part

المقرر	الاختبار	الدرجة				إجمالي
		تحريري	شفهي	عملي	إكلينيكي	
التشريح الإشعاعي المتقدم	اختبار تحريري مدته ثلاث ساعات	١٠٠				١٠٠
الأسس الإكلنيكية للباطنة والجراحة	اختبار تحريري مدته ثلاث ساعات+ شفوي + اكلنيكي	٣٠٠	٣٠٠		٣٠٠	٦٠٠
باثولوجيا	اختبار تحريري+ شفوي	١٠٠	١٠٠			٣٠٠
الإحصاء	اختار تحريري +شفوي	١٠٠	١٠٠			٣٠٠
ملحوظة: يتم قسمة درجات الجزء الأول على ٣						
إجمالي الدرجة						١١٠٠

Second part

المقرر	الاختبار	الدرجة				إجمالي
		تحريري	شفهي	إكلينيكي	عملي	
التشخيص بالأشعة	اختبار تحريري (ورقتان)+شفوي+ عملي	٣٠٠ + ٣٠٠	١٠٠		١٠٠	٤٠٠
						٤٠٠

١٠ Evaluation of Program: ـ طرق تقويم البرنامج:

Evaluator	Tools	Signature

Internal evaluator (s) **مقييم داخلى** **Prof.dr.ahmed farid** (Professor of radiodiagnosis- Benha university)	**Report**	1 report
External Evaluator (s) **مقييم خارجى** **Prof. Magdy seteen** Professor of radiodiagnosis- Mansoura university)	**report.**	I report
Senior student (s) **طلاب السنة النهائية**	**Questionnaire**	100%
Alumni **الخريجون**	**Questionnaire**	50%
Stakeholder (s) **أصحاب العمل**	**Interviews**	Representative sample fr sectors
Others **طرق أخرى**	**None**	

المسئول عن البرنامج: مدحت محمد رفعت التوقيع: التاريخ: 9/ 9 /٢٠١٣

Program coordinator:

Name Dr: **signature:** **Date:**

توصيف المقررات

Program courses

Course Specification

Course title: Human Pathology for : Decorate degree of radiology

(Code): RAD703

Academic Year (2013 – 2014)

- **Department offering the course: ……** Human Pathology Department
- **Academic year of (Decorate degree radiology) program: 2013 – 2014**
- **Major or minor elements of the program:** major
- **Academic level:** 1ST MD
- **Date of specification approval:**
  - **Department council date 2/9/2013**

A) Basic Information:

- **Allocated marks:** 2oo marks
- **Course duration:** 15 weeks of teaching
- **Teaching hours:** 1 hours/week = 15 total teaching hours

	Total hours
1- Lectures	7.5
2- Practical	7.5
Total	15

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

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 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. diagnose & manage the diagnosed cases.
2.a.4 Describe the clinical manifestations and differential diagnosis of common pathological cases.
2.a.5. Describe the scientific basis and interpretation of various diagnostic modalities essential for Radiology
2.1.6. define the principles that govern ethical decision making in clinical practice as well as the pathological aspect of medical malpractice.
2.a.7. define 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. Plane for performance development in his practice.
2.b.5. Select the most appropriate and cost effective diagnostic procedures for each problem.
2.b.6. be aware of laws in relation to medical practice and be acquainted with related relevant amendments and also related judgments passed by constitutional courts .
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. perform 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	**7.5hrs**	**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	½
Diseases of musculoskeletal system	1/4	1/4	½
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 assess knowledges,intellectual skills& general skills
Practical examination	To assess practical &clinical skills

5-C) <u>TIME SCHEDULE</u>: Faculty bylaws

Exam	Week
1- First part: - written - oral - practical & clinical	At the end of course
2- Second part: - written - oral - practical & clinical	
3- Thesis	
4- Assignments & other activities	

5-D) <u>Weighting System:</u>

Examination	Marks allocated	% of Total Marks
1- First part: a- Written b- Practical c- Oral	200 100 40 60	50% 20% 30%
2- Second part: a- Written b- Practical c- Oral	200 100 40 60	50% 20% 30%
3- Thesis		
4- Assignments & other		
Total		

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

FORMATIVE ASSESSMENT:
Student knows his marks after the Formative exams.

5-E) Examinassions description:

Examination	Description
1- First part: 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
2- Second part: 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- Thesis:	
6- Assignments & other activities	e.g. Assignments, projects, practical books etc
Total	

6- List of references:

6.1- Basic materials:

- e.g. Department book:

6.2- Essential books (text books):

6.3- Recommended books:

6.4- Periodicals, Web sites, … etc:

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls:
- Small group classes
- Laboratory
- Information technology / AV aids
- Models etc

Course coordinator:
Head of Department:
Date: 2/6/2013

Course Specification

Course title: Advanced radiological anatomy

(Code): RAD 704

Academic Year (2013 – 2014)

- **Department offering the course:** Diagnostic radiology Department
- **Academic year of** M.D in Diagnostic radiology.
- **Major or minor elements of the program:** Major
- **Academic level:** 1st part.
- **Date of specification approval:**
  - **Department council date 2/9/2013.**

A) Basic Information:

- **Allocated marks:** 100 marks
- **Course duration:** 15 weeks of teaching
- **Teaching hours:** 1 hours/week = 15 total teaching hours

	Hours / week	Total hours
1- Lectures	**0.5**	**7.5**
2- Practical	**0.5**	**7.5**
Total	**1**	**15**

B) Professional Information:

1- Overall Aim of the Course:

a) Understand the scientific principles underlying health and disease.
b) Provide an appropriate background covering the common and important emergencies and diseases.
c) Prepare candidate for independent and life-long learning by encouraging selfdirected study.
e) Enable the 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. explain principal indications and contraindications, patient preparation, equipment, contrast media, technique variations for specific indications and principal complications and their management.

2.a.2. discuss 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. 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.b.5. Able to run a radio-diagnostic unit providing the basic and common diagnostic procedures.

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 all the US and Doppler scanning of all part of the body.

2.c.5. Carry out basic interventional procedures as US and CT guided biopsies, ascetic and pleural taping, abscess drainage.

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
-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	١٥	100

-MRI anatomy brain. -CT anatomy of supra-renal glands. -Plain X-ray, CT anatomy of the spine. -Sectional anatomy of abdomen. -Anatomy of breast. -Neck anatomy. -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. -Orbital anatomy. -Anatomy of larynx. -Petrous bone anatomy. -Sella turcica anatomy. -Joints anatomy. -Neck spaces anatomy. -Oral cavity, salivary glands anatomy. -Anatomy of liver	١٥	**50%**
Total	**15**	**100**

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
4- First part: - written - oral - practical & clinical	At the end of course
5- Second part: - written - oral - practical & clinical	
6- 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) Examinassions 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):

- Diagnostic and surgical imaging anatomy series, 1st edition,Amirsys

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

- Chapman's Radiological Technique.

6.3- Recommended books:

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 & Head of Department: Prof. Medhat Refaat
Date: 2/6/2013

Course Specification

Course title: Radiodiagnosis

(Code): RAD 70٥

Academic Year (2013 – 2014)

- **Department offering the course:** Diagnostic radiology Department
- **Academic year of** M.D. in diagnostic radiology.
- **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:** 500 marks
- **Course duration:** 45 weeks of teaching
- **Teaching hours:** 24 hours/week = 1080 total teaching hours

	Hours / week	Total hours
1- Lectures	**12**	**540**
2- Small group teaching / tutorials	**6**	**270**
3- Practical	**6**	**270**
4- Others	**------**	**-----**
Total	**24**	**1080**

B) Professional Information:

1- Overall Aim of the Course:

1.a. Understand the scientific principles underlying health and disease.
1.b. Provide an appropriate background covering the common and important emergencies and diseases.
1.c. Prepare candidate for independent and life-long learning by encouraging selfdirected study.
1.d. Enable the 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.1identify knowledge of sophisticated techniques routinely used in a teaching/training hospital environment, including principal indications and contraindications, patient preparation, equipment, contrast media, technique variations for specific indications and principal complications and their management.

2.a.2explain 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. 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.b.5. Able to run a radio-diagnostic unit providing the basic and common diagnostic procedures.

.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. record and Interpret the patient data (history and imaging finding) in an organized and informative manner.

2.c.3. Perform Procedural Skills (special procedures).

2.c.5. Carry out all the US and Doppler scanning of all part of the body.

2.c.6.carry out basic interventional procedures as US and CT guided biopsies, ascetic and pleural taping, abscess drainage.

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:

Course	Subjects	Hours
Course 1 **Spine**	- Normal anatomy of the spine by CT, MRI -Imaging of degenerative spinal diseases -Imaging of Postoperative spine -Diagnosis of spinal inflammatory disease -Imaging of Spinal neoplasms -Traumatic lesions of the spine -Spinal dysraphism -Spinal interventions	

Course 2 **Neuroradiology**	-Imaging modalities in neuroradiology -Physical principles of MR imaging -Normal brain anatomy CT, MRI -Diagnosis of cerebrovascular stroke -Imaging of brain tumors -Intracranial infections -Posterior fossa lesions -Intracranial vascular malformation -Intracranial cysts and calcifications -White matter diseases -Intracranial traumatic lesions -Advanced diagnostic techniques, MDCT, MRA,MR -Diffusion and perfusion studies -Diagnostic value of neuro-MR spectroscopy -Transcranial US -Interventional neuroradiology -Congenital brain lesions. - Phacomatosis. - CNS trauma, Hydrocephalus and miscellaneous. - CNS aneurysms. - Sellar and parasellar regions.	

Course 2 **Radiology of head and neck**	- Head and neck ultrasound -Head and neck inflammatory diseases, CT, MRI -Imaging of orbital pathology , CT, MRI -Imaging anatomy and pathology of the petrous bones, CT, MRI -Imaging of the parapharyngeal spaces CT,MRI I -Imaging of the parapharyngeal spaces CT,MRI -Imaging of the tongue and mouth flour lesions CT, MRI -Imaging of salivary glands, CT, MRI -Imaging of mandibular pathology, CT, MRI -Imaging of sianonasal pathology CT, MRI -Imaging of larynx CT, MRI -Imaging anatomy and pathology of the cervical lymph node diseases -Thyroid and parathyroid anatomy and pathology -Head and neck nuclear imaging -Head and neck interventional techniques -Nose and PNS. - Diseases of orbits. - Diseases of larynx. - Nasopharynx. - Oral cavity. - Salivary glands. - Maxillofacial tumours. - Maxillofacial trauma	

Course 4 Radiology of Chest	- How to interpret chest X rays, normal anatomy and pathology -Normal CT anatomy of the chest -Diagnosis of focal lung diseases, X ray and CT -Diagnosis of diffuse lung diseases, X ray and HRCT -Imaging of the pleural and chest wall pathology -Diagnosis of pulmonary vascular diseases -Imaging diagnosis and staging of lung cancer -Diagnostic value of MRI in chest diseases -Imaging of the mediastinum, anatomy and pathology -Intensive care Radiology -Imaging of pulmonary TB -Interventional chest Radiology -Chest scintigraphy -Chest trauma -Imaging of Air way diseases -Imaging of Pul. Circulation - Pulmonary infections. - Mediastinum. - Acquired heart diseases.	

Course 5 **Musculoskeleta Radiology**	- Imaging modalities in musculoskeletal system -Physical principles of musculoskeletal MRI -Diagnosis of skeletal trauma -Bone and joint infections X ray, CT, MRI -Imaging of bone tumors X ray, CT, MRI -Diagnosis of metabolic and endocrinal bone disease -Hematological bone diseases X ray, MRI -Imaging of polyarthropathies -Musculoskeletal ultrasound -Musculoskeletal nuclear imaging -Knee Joint -Ankle Joint - Shoulder joint, - Wrist Joint - Hip Joint - Elbow Joint - Infections and tumours of the spine. -Trauma and miscellaneous. - Bone tumours. - Skeletal dysplasia and malformations. - Myeloproliferative bone lesions. -Osteonecrosis, osteochondritis and synovial lesions. - Musculoskeletal MRI. - Bone dysplasia. - Soft tissue masses. - Non-neoplastic bone lesions. - Endocrinal and metabolic bone diseases. - Musculoskeletal trauma.	

Course 6 **Gastrointesti** **Radiology**	- Imaging modalities in gastrointestinal pathology - Diagnosis of hypo pharyngeal and osophageal pathology -Imaging of stomach and duodenum -Diagnosis of small intestinal pathology -Imaging of colonic diseases -Abdominal ultrasound techniques, - - Hepatic imaging CT, MRI - Biliary and pancreatic imaging - Imaging of splenic and retroperitoneal pathology - Imaging of acute abdomen -Abdominal injuries -Imaging of peritoneal and mesenteric pathology -- Abdominal nuclear medicine (liver, adrenal,…) - Abdominal interventional techniques [non vascular] -Abdominal interventional techniques [vascular] - Imaging of liver transplant pre and postoperative - Imaging of the adrenal glands, anatomy & pathology - CT virtual techniques - GIT (oesophagus, stomach, SI, colon). - Blunt abdominal trauma. - Liver tumours. - Oesophagus, stomach, small and large intestines.	

Course 7 **Genitourinar** **Radiology**	- Diagnostic modalities in uroradiology - MR urography diagnostic value and physical principles - Imaging of renal physiology and kinetics of contrast agents - Imaging of renal pathology :congenital lesions and stones -Renal Infection + Inflammatory diseases -Cystic renal diseases + intermediate renal masses -Renal neoplasms -Ureteric pathology -Urinary bladder neoplasm -Imaging of the urethra -Imaging of penile pathology -Imaging of the testis and scrotum -Imaging of the prostate CT, MRI -Transrectal US -Imaging diagnosis of male infertility -Urinary tract nuclear scientigraphy -Renal trauma -Intervention uroradiology -Role of imaging in renal transplantation -Suprarenal masses. - Genitourinary neoplasm. - Genitourinary calcifications and calcular diseases. - Medical diseases of the kidney. - Female genital system (congenital anomalies, neoplasms and others).	

Course 8 **Vascular imaging**	- Introduction to vascular imaging, modalities and techniques -Head and neck vascular pathology -Imaging of aortic lesions -Pulmonary and bronchial arterial pathology -Spinal vascular lesions -Imaging of mesenteric vascular diseases -Imaging of the portal venous circulation -Peripheral arterial diseases -Peripheral venous diseases - Gastrointestinal vascular abnormalities. - Popliteal artery diseases.	
Course 9 **Breast imaging**	- Breast lesions. - Breast calcifications.	
Course 10 **Paediatrics Imaging**	- Introduction to Paediatric Imaging -Normal pediatric brain and spinal imaging -Imaging of hydrocephalus -Neuronal migration disorders -Imaging of pediatric intracranial infection -Pediatric Brain tumors -Leukodystrophies -Pediatric chest radiology -Pediatric abdominal imaging (Normal CT anatomy – Acute abdomen) -Abdominal and genitourinary pediatric masses -Skeletal dysplasia – metabolic bone diseases -GIT motility disorders	
Course 11 **Intervention Radiology**	- Interventional techniques in hepatobiliary system. - Interventional techniques of head and neck.	

Course 12 Cardiac Radiology	-Diagnostic modalities for cardiac imaging -Principles and diagnostic values of echocardiography -Basics of MDCT coronary angiography -Principles of cardiac MRI -Nuclear cardiac imaging -Imaging of congenital heart diseases -Diagnosis of acquired heart diseases -Imaging of ischemic heart disease -Pericardial lesions and cardiomyopathies	
Course 13 Revision	-GIT revision. -Musculoskeletal revision. -Neuroradiology revision. -Paediatric GIT revision. -Genitourinary revision. -Head and neck revision. -Chest and heart revision. - Films revision. - Up to date radiology.	

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) <u>TIME SCHEDULE</u>: Faculty bylaws

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

5-D) <u>Weighting System:</u>

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) <u>Examinassions description:</u>

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

6- <u>List of references</u>:

6.1- <u>Basic materials:</u>

No

6.2- Essential books (text books):

-Grainger-Allisons-Diagnostic-Radiology.

-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:

-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 & Head of Department: Prof. Medhat Refaat

Date: 2/6/2013

Course Specification of Medical Statistics

For Radiology Doctorate

1. **Program on which the course is given**: Doctorate 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, date 2-6-2013. .

A) Basic Information

- **Course title:** Medical Statistics
- **Code:** RAD 705
- **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: ▪ Sampling ▪ Screening ▪ Epidemiological studies	3	3	A2,B1,C1,C2,C4,C5
Summarization of data: ▪ Measures of central tendency ▪ Measures of dispersion	2	2	A2,B2,C2

Presentation of data: ▪ 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
Written ral	two-hour written paper composed of short essay-type questions and Case study. ne 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: 2-6-2013

الملحقات

ملحق ١: Academic standard of the program

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

ملحق ٣: مصفوفة مضاهاة المعاييرالأكاديمية المتبناة للبرنامج مع المعايير القياسية للدراسات العليا الصادرة عن الهيئة لدرجة الدبلومة.

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

ملحق ٥: مصفوفة مضاهاة مقررات البرنامج مع المعارف والمهارات للبرنامج الدراسى

Academic standard of the program: ملحق ١

جامعة بنها
كلية الطب
قسم الأشعة التشخيصية والعلاجية

وثيقة المعايير الأكاديمية المرجعية لبرنامج الدكتوراة

Academic Reference Standards (ARS) for MD Degree in diagnostic & intervention radiology

1. Graduate Attributes:

1.1. Mastering the basics and methodologies of scientific research.

1.2. Contionous work to add to knowlegment in the radiodignosis field

1.3. The application of the analytical method in field of radiodiagnosis

1.4. Integrating scientific knowledge in radiology and other related branches to detect and develop relations between them.

1.5. Attain the current radiology problems and new methods for diagnosis.

1.6. proplem identification & finding solutions for it.

1.7. Mastering a wide range of professional skills

1.8. Development of new methods and tools for radiodiagnosis.

1.9. Using appropriate technology for practice of radiodiagnosis.

1.10. Communicate effectively and the ability to lead teams .

1.11. Decision-making through the available iformations.

1.12. Employment of available resources in order to achieve the highest benefit in the diagnosis by different radiology tools as well as new tools development.

1.13. Taking active role in the community and saving environment

1.14. Ethical medical behavior.

1.15. Continuous scientific work and self development in radiology with contionous teaching to others.

2. Academic Standards:

2.1. Knowledge and understanding:

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

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

2.1.2. Recognize basic & advanced concepts of radiological techniques, indications, contraindications, potential complications of radiological procedures and their management

2.1.3. understand basics and ethics of scientific research

2.1.4. know the advanced quality control in professional practice in radiology

2.1.5. understand mutual influence between professional practice and its impact on the environment and how to overcome it

2.2. Intellectual skills:

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

2.2.1.analyze& evaluate the information given to solve proplems.
2.2.2 solve specialized problems based on the data available.
2.2.3 perform effective searches on agiven topic that add to the knowlegment in the radiodiagnosis field
2.2.4 perform scientific papers
2.2.5 evaluate the possible complications associated with different radiological procedures.
2.2.6 plane for the development of different imaging modalities for diagnosis.
2.2.7 perform efficient decisions in different proplems.
2.2.8 design new creations in radiodiagnosis field.
2.2.9 perform discussion based on reasons and evidences **.**

2.3. Practical/Professional skills

By the end of MD 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 .

2.3.3. select & evaluate appropriate imaging modalities for different lesions .

2.3.4. use of information technology to serve the professional practice in the field of radiodiagnosis

2.3.5. plane for the development of different imaging modalities for diagnosis

2.4. Communication and transferable skills:

By the end of MD 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 knowledges and practice .

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

2.4.3. educate others & evaluate their performance.

2.4.4. establish life long self learning required for continous professional development

2.4.5. use of different sources to obtain information & knowledges

2.4.6. work effectively as a member or leader of health care team or other professional group

2.4.7. manage scientific meeting and manage time effectively

اعتماد مجلس القسم بتاريخ ٦/. ٢٠١٣.

رئيس مجلس القسم

اعتماد مجلس الكلية 354 16/6/2013

ملحق 2:المعايير القياسية العامة للدراسات العليا الصادرة عن الهيئة

برامج الدكتوراة

١- موصفات الخريج

خريج برنامج الماجستير فى أي تخصص يجب أن يكون قادرا على :

١-١ إجادة تطبيق أساسيات ومنهجيات البحث العلمى واستخدام أدواته المختلفة

١-٢ تطبيق المنهج التحليلى واستخدامه فى مجال التخصص

١-٣ تطبيق المعارف المتخصصة ودمجها مع المعارف ذات العلاقة فى مماسته المهنية

١-٤ إظهار وعيا بالمشاكل الجارية والرؤى الحديثة فى مجال التخصص

١-٥ تحديد المشكلات المهنية وإيجاد حلول لها

١-٦ إتقان نطاق مناسب من المهارات المهنية المتخصصة واستخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية

١-٧ التوصل بفاعلية والقدرة على قيادة فرق العمل

١-٨ اتخاذ القرار فى سياقات مهنية مختلفة

١-٩ توظيف الموارد المتاحة بما يحقق أعلى استفادة والحفاظ عليها

١-١٠ إظهار الوعى بدوره فى تنمية المجتمع والحفاظ على البيئة فى ضوء المتغيرات العالمية والاقليمية

١-١١ التصرف بما يعكس الالتزام بالنزهة والمصداقية والالتزام بقواعد المهنة

١-١٢ تنمية ذاته أكاديميا ومهنيا وقادرا على التعلم المستمر

2- المعايير القياسية العامة

٢-١ المعرفة والفهم :

بأنتهاء دراسة برنامج الماجيستير 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 :

بانتهاء دراسة برنامج الماجستير يجب ان يكون الخريج قادرا على :

٢-٢-١ تحليل وتقيم المعلومات فى مجال التخصص والقياس عليها لحل المشاكل

٢-٢-٢ حل المشاكل المتخصصة مع عدم توافر بعض المعطيات

٢-٢-٣ الربط بين المعارف المختلفة لحل المشاكل المهنية

٢-٢-٤ اجراء دراسة بحثية او كتابة دراسة علمية منهجية حول مشكلة بحثية

٢-٢-٥ تقييم المخاطر فى الممارسات المهنية فى مجال التخصص

٢-٢-٦ التخطيط لتطوير الاداء فى مجال التخصص

٢-٢-٧ اتخاذ القرارات المهنية فى سياقات مهنية متنوعة
٢-٣ المهارات المهنية
بانتهاء دراسة برنامج الماجستير يجب ان يكون الخريج قادرا على :
٢-٣-١ اتقان المهارات المهنية الاساسية والحديثة فى مجال التخصص
٢-٣-٢ كتابة وتقييم التقارير المهنية
٢-٣-٣ تقييم الطرق والادوات القائمة فى مجال التخصص

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

ملحق ٣: مصفوفة مضاهاة المعاييرالأكاديمية المتبناة للبرنامج مع المعايير القياسية للدراسات العليا الصادرة عن الهيئة لدرجة الدكتوراة

- مواصفات الخريج:

مواصفات الخريج بالمعايير القياسية للدراسات العليا (درجة الدكتوراة)	مواصفات الخريج بالمعايير الأكاديمية للبرنامج
١-١ اتقان اساسيات ومنهجيات البحث العلمى	1.1 Mastering the basics and methodologies of scientific research.
١-٢ العمل المستمر على الاضافة للمعارف فى مجال الاشعة التشخيصية	1.2 Contionous work to add to knowlegment in the radiodignosis field
١-٣ تطبيق المنهج التحليلى والناقد للمعارف فى مجال الاشعة التشخيصية والمجالات ذات العلاقة	1.3 The application of the analytical method in field of radiodiagnosis
١-٤ دمج المعارف المتخصصة مع المعارف ذات العلاقة مستنبطا ومطورا للعلاقات البينية بينها	1.4 Integrating scientific knowledge in radiology and other related branches to detect and develop relations between them.

. 1.5 Attain the current radiology problems and new methods for diagnosis.	١-٥ اظهار وعيا عميقا بالمشاكل الجارية والنظريات الحديثة فى مجال الاشعة التشخيصية
. 1.6 proplem identification & finding solutions for it.	١-٦ تحديد المشكلات المهنية وايجاد حلولا مبتكرة لحلها
. 1.7 Mastering a wide range of professional skills	١-٧ اتقان نطاقا واسعا من المهارات المهنية فى مجال الاشعة التشخيصية
1.8 Development of new methods and tools for radiodiagnosis.	١-٨ التوجة نحو تطوير طرق وادوات واساليب جديدة فى مجال الاشعة التشخيصية
1.9 Using appropriate technology for practice of radiodiagnosis.	١-٩ استخدام الوسائل التكنولوجية المناسبة بما يخدم مجال

	الاشعة التشخيصية
1.10 Communicate effectively and the ability to lead teams . .	**١-١٠ التواصل بفاعلية وقيادة فريق عمل فى سياقات مهنية مختلفة**
1.11 Decision-making through the available iformations.	**١-١١ اتخاذ القرار فى ضل المعلومات المتاحة**
1.12 Employment of available resources in order to achieve the highest benefit in the diagnosis by different radiology tools as well as new tools development.	**١-١٢ توظيف الموارد المتاحة بكفاءة وتنميتها والعمل على ايجاد موارد جديدة**
1.13 Taking active role in the community and saving environment	**١-١٣ الوعى بدوره فى تنمية المجتمع والحفاظ على البيئة**
1.14 Ethical medical behavior.	**١-١٤ التصرف بما يعكس الالتزام بالنزاهة والمصداقية**

وقواعد المهنة	
١-١٥ الالتزام بالتنمية الذاتية المستمرة ونقل علمه وخبراته للاخرين	1.15 Continuous scientific work and self development in radiology with contionous teaching to others

أ ـ المعرفة والفهم:

المعايير القياسية العامة (Generic) للدراسات العليا (درجة الدكتوراة)	المعايير الأكاديمية للبرنامج
بأنتهاء دراسة برنامج الدكتوراة يجب ان يكون الخريج على فهم ودراية بكل من : 2-١-١ النطريات والاساسيات والحديث من المعارف فى مجال التشخيص بالاشعة والمجالات ذات العلاقة	***By the end of MD program, the candidate should recogniz understand the followings:*** 2.1.1. Recognize the basic &advanced radiological knowledge including principles of physics, radiobiology, radiological anatomy, positions and imaging techniques . .
٢-١-٢ اساسيات ومنهجيات واخلاقيات البحث العلمى واداواته المختلفة	2.1.2 Recognize advanced concepts of radiological techniques, indications, contraindications, potential complications of radiological procedures and their management
٢-١-٣ المبادئ الاخلاقية والقانونية للممارسة المهنية فى مجال التشخيص بالاشعة	2.1.3 understand basics and ethics of scientific research

2.1.4 know the advanced principles of quality control in professional practice in radiology	٢-١-٤ مبادئ واساسيات الجودة فى الممارسة فى مجال التشخيص بالاشعة
2.1.5 understand mutual influence between professional practice and its impact on the environment and how to overcome it	٢-١-٥ المعارف المتعلقة بأثار ممارسته المهنية على البيئة وطرق تنمية البيئة وصيانتها

ب - القدرات الذهنية :

المعايير الأكاديمية للبرنامج	المعايير القياسية العامة (Generic) للدراسات العليا (درجة الدكتوراة)
By the end of MD program, candidate should be able to recognize the followings:	بانتهاء دراسة برنامج الدكتوراة يجب ان يكون الخريج قادرا على :
2.2.1.analyze& evaluate the information given to solve proplems.	2-٢-١ تحليل وتقييم المعلومات فى مجال التشخيص بالاشعة والقياس عليها والاستنباط منها
2.2.2 solve specialized problems based on the data available.	٢-٢-٢ حل المشاكل المتخصصة استنادا على المعطيات المتاحة
2.2.3 perform effective searches on agiven topic that add to the knowlegment in the radiodiagnosis field	٢-٢-٣ اجراء دراسات بحثية تضيف الى المعارف
2.2.4 perform scientific papers	٢-٢-٤ صياغة أوراق علمية
2.2.5 evaluate the possible complications associated with different radiological procedures.	٢-٢-٥ تقييم المخاطر فى الممارسات المهنية

2.2.6 plane for the development of different imaging modalities for diagnosis.	**٢-٢-٦ التخطيط لتطوير الاداء فى مجال الاشعة التشخيصية**
2.2.7 perform efficient decisions in different proplems.	**٢-٢-٧ اتخاذ القرارات المهنية فى سياقات مهنية مختلفة**
2.2.8 design new creations in radiodiagnosis field.	**٢-٢-٨ الابتكار/الابداع**
2.2.9 perform discussion based on reasons and evidences **.**	**٢-٢-٩ الحوار والنقاش المبنى على البراهين والادلة**

ج. مهارات مهنية وعملية :

المعايير الأكاديمية للبرنامج	**المعايير القياسية العامة (Generic) للدراسات العليا (درجة الدكتوراة)**
By the end of MD program, candidate should acce wings skills:	**بانتهاء دراسة برنامج الدكتوراة يجب ان يكون الخريج قادرا على :**
2.3.1 Perform different radiological procedure and dealing with different associated complications efficiently .	**٢-٣-١ اتقان المهارات المهنية الاساسية والحديثة فى مجال الاشعة التشخيصية**
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	**٢-٣-٢ كتابة وتقييم التقارير المهنية**
2.3.4 select & evaluate appropriate imaging modalities for different lesions	**٢-٣-٣ تقييم وتطوير الطرق والادوات القائمة فى مجال الاشعة التشخيصية**
2.3.4 use of information technology to serve t professional practice in the field of radiodiagn	**٢-٣-٤ استخدام الوسائل التكنولوجية الحديثة للتشخيص بالاشعة**

2.3.5 plane for the development of different imaging modalities for diagnosis	**٢-٣-٥ التخطيط لتطوير الممارسة المهنية وتنمية اداء الاخرين**

د . مهارات عامة و منتقلة :

المعايير الأكاديمية للبرنامج	المعايير القياسية العامة (Generic) للدراسات العليا (درجة الدكتوراة)
By the end of MD program, candidate should accept the foll skills: **2.4.1.** use the sources of biomedical information communication technology to remain current with adva in knowledges and practice .	**بانتهاء دراسة برنامج الدكتوراة يجب ان يكون الخريج قادرا على :** **٢-٤-١ التواصل الفعال بأنواعة المختلفة**
2.4.2. use of information technology to serve professional practice in the field of radiodiagnosis .	**٢-٤-٢ استخدام تكنولوجيا المعلومات بما يخدم تطوير مجال الاشعة التشخيصية**
2.4.3 educate others & evaluate their performance.	**٢-٤-٢ تعليم الاخرين وتقييم ادائهم**
2.4.4 establish life long self learning required for continous professional development	**٢-٤-٥ التقييم الذاتى والتعليم المستمر**
2.4.5 use of different sources to obtain information & knowledges	**٢-٤-٥ استخدام المصادر المختلفة للحصول على المعلومات والمعارف**
2.4.6 work effectively as a member or leader of health team or other professional group	**٢-٤-٦ العمل فى فريق وقيادة فرق العمل**
2.4.7 manage scientific meeting and manage effectively	**٢-٤-٧ ادارة اللقاءات العلمية والقدرة على ادارة الوقت**

ملحق ٤: مصفوفة مضاهاة المعايير الأكاديمية للبرنامج و أهداف و نواتج تعلم البرنامج

أهداف البرنامج	المعايير الأكاديمية للبرنامج (مواصفات الخريج):
1a.	**1.1**.Mastering the basics and methodologies of scientific research.
1.b.	**1.2**.Contionous work to add to knowlegment in the radiodignosis field
1.c.	**1.3**.The application of the analytical method in field of radiodiagnosis
1.d.	**1.4**.Integrating scientific knowledge in radiology and other related branches to detect and develop relations between them.
1.e.	**1.5**.Attain the current radiology problems and new methods for diagnosis.
1.f.	**1.6**.proplem identification & finding solutions for it.
1.g.	**1.7**. Mastering a wide range of professional skills
1.h	**1.8**.Development of new methods and tools for radiodiagnosis.
1.i	**1.9**.Using appropriate technology for practice of radiodiagnosis.

1.J	**1.10**.Communicate effectively and the ability to lead teams .
1.k	**1.11**.Decision-making through the available iformations
1.l	**1.12**.Employment of available resources in order to achieve the highest benefit in the diagnosis by different radiology tools as well as new tools development.
1.m	**1.13**.Taking active role in the community and saving environment
1.n	**1.14**.Ethical medical behavior.
1.o	**1.15.**Continuous scientific work and self development in radiology with contionous teaching to others.

نواتج تعلم البرنامج											**المعايير الأكاديمية للبرنامج**
المعرفه و الفهم											
2.a.1.	**2.a.2.**	**2.a.3**	**2.a.4**	**2.a.5**	**2.a.6**	**2.a.7**	**2.a.8**	**2.a.9**	**2.a.10**		
√		√	√	√							***By the end of MD program, the candidate 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** Recognize basic concepts of radiological techniques, indications, contraindications, potential complications of radiological procedures and their management
		√										**2.1.3**.understand basics and ethics of scientific research
				√								**2.1.4** know the basic principles of quality control in professional practice in radiology
					√							**2.1.5** understand mutual influence between professional practice and its impact on the environment and how to overcome it

المعايير الأكاديمية للبرنامج	نواتج تعلم البرنامج									
	Intellectual skills									
المهارات الذهنية	2.b.1.	2.b.2.	2.b.3	2.b.4	2.b.5	2.b.6	2.b.7	2.b.8		

										√	***By the end of MD program, candidate should be able to recognize the followings:*** **2.2.1**.analyze& evaluate the information given to solve proplems.
			√						√		**2.2.2**.solve specialized problems based on the data available
						√					**2.2.3** perform effective searches on agiven topic that add to the knowlegment in the radiodiagnosis field
							√				**2.2.4** perform scientific papers
					√						**2.2.5** evaluate the possible complications associated with different radiological procedures.
				√							**2.2.6** plane for the development of different imaging modalities for diagnosis
							√	√			**2.2.7** perform efficient decisions in different proplems
							√		√		**2.2.8** design new creations in radiodiagnosis field.

نواتج تعلم البرنامج	

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.	
							√				√	***By the end of MD program, candidate 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
					√							**2.3.3** select & evaluate appropriate imaging modalities for different lesions
												2.3.4 select & evaluate appropriate imaging modalities for different lesions
												2.3.5 plane for the development of diffe imaging modalities for diagnosis

نواتج تعلم البرنامج	المعايير الأكاديمية للبرنامج
General transferable skill	المهارات العامة والمنتقلة

				2.d.8	2.d.7	2.d.6	2.d.5	2.d.4	2.d.3	2.d.2.	2.d.1.	
						√	√					**By the end of MD 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 knowledges and practice.
										√		**2.4.2** use of information technolog serve the professional practice in field of radiodiagnosis .
					√							**2.4.3** educate others & evaluate their performance.
											√	**2.4.4** establish life long self learning required for continous professional development
					√							**2.4.5** use of different sources to obtain information & knowledges
								√				**2.4.6** work effectively as a membe leader of health care team or professional group
								√				**2.4.7** manage scientific meeting and manage time effectively

ملحق (٥) مصفوفة مضاهاة مقررات البرنامج مع المعارف والمهارات للبرنامج الدراسى

ILOs / Courses & codes		Knowledge & Understanding المعارف									
		2.a.1	2.a.2	2.a.3	2.a.4	2.a.5	2.a.6	2.a.7	2.a.8	.a.9	a.10
جزء أول											
باطنة عامة	RAD701		■	■							■
جراحة عامة	RAD702				■						■
باثولوجيا	RAD703				■						■
تشريح مقطعي متقدم	RAD704				■						■
إحصاء وطرق بحثية	RAD705			■							■
علوم حاسب آلي	RAD706		■								■
جزء ثانى		■					■	■	■	■	■
أساسيات علم الأشعة											
أشعة الجهاز العصبي	RAD707		■				■	■	■	■	■
أشعة الوجه والرقبة	**RAD708**			■		■					■
أشعة الجهاز الحركي	**RAD709**		■								
أشعة القلب والصدر	**RAD710**			■	■						
أشعة الجهاز الهضمي	**RAD711**		■								
أشعة المسالك البولية والتناسلية	**RAD712**										
أشعة الأوعية الدموية	**RAD713**		■								
أشعة الثدي	**RAD714**	■									
أشعة الأطفال	**RAD715**			■			■				
الأشعة التداخلية	**RAD716**										
علم الأشعة للمجموعات الخاصة			■	■							
أشعة رعاية مركزة	**RAD717**				■						
أشعة الطوارئ	**RAD718**		■	■							
أشعة الأورام	**RAD719**	■	■								
أشعة المسنين	**RAD720**						■	■			

أفاق جديدة	**RAD721**	■	■								

ILOs / Courses & codes		Intellectual Skills مهارات ذهنية									
		2.b1	2.b.2	2.b.3	2.b.4	2.b.5	2b.6	2.b7	2b.8	b.9	2.b.
جزء أول											
باطنة عامة	RAD701		■	■							■
جراحة عامة	RAD702				■						■
باثولوجيا	RAD703				■						■
تشريح مقطعي متقدم	RAD704				■						■
إحصاء وطرق بحثية	RAD705			■							■
علوم حاسب آلي	RAD706		■								■
جزء ثانى											
أساسيات علم الأشعة											
أشعة الجهاز العصبي	RAD707		■				■	■	■	■	■
أشعة الوجه والرقبة	**RAD708**					■					■
أشعة الجهاز الحركي	**RAD709**										
أشعة القلب والصدر	**RAD710**										
أشعة الجهاز الهضمي	**RAD711**										
أشعة المسالك البولية والتناسلية	**RAD712**										
أشعة الأوعية الدموية	**RAD713**										
أشعة الثدي	**RAD714**										
أشعة الأطفال	**RAD715**										
الأشعة التداخلية	**RAD716**										
علم الأشعة للمجموعات الخاصة											
أشعة رعاية مركزة	**RAD717**										
أشعة الطوارئ	**RAD718**										
أشعة الأورام	**RAD719**										

أشعة المسنين	**RAD720**										
أفاق جديدة	**RAD721**										

ILOs / Courses & codes		Practical & Clinical Skills مهارات عملية و مهنية									
		2c.1.	2.c.2	2cb.	2.c.4	2.c.5	2c.6	2.c7	2b.8	c.9	2.c.
جزء أول											
باطنة عامة	RAD701		■	■							■
جراحة عامة	RAD702				■						■
باثولوجيا	RAD703				■						■
تشريح مقطعي متقدم	RAD704				■						■
إحصاء وطرق بحثية	RAD705			■							■
علوم حاسب آلي	RAD706		■								■
جزء ثانى											
أساسيات علم الأشعة											
أشعة الجهاز العصبي	RAD707		■				■	■	■	■	■
أشعة الوجه والرقبة	**RAD708**					■					■
أشعة الجهاز الحركي	**RAD709**										
أشعة القلب والصدر	**RAD710**										
أشعة الجهاز الهضمي	**RAD711**										
أشعة المسالك البولية والتناسلية	**RAD712**										
أشعة الأوعية الدموية	**RAD713**										
أشعة الثدي	**RAD714**										
أشعة الأطفال	**RAD75**										
الأشعة التداخلية	**RAD716**										
علم الأشعة للمجموعات الخاصة											
أشعة رعاية مركزة	**RAD717**										
أشعة الطوارئ	**RAD718**										

أشعة الأورام	**RAD719**										
أشعة المسنين	**RAD720**										
أفاق جديدة	**RAD721**										

ILOs / **Courses & codes**		General and transferable مهارات عامة									
		2d.1.	2.d.2	2d3	2.d.4	2.d.5	2d.6	2.d7	2d.8	d	2.d.
جزء أول											
باطنة عامة	RAD701		■	■							■
جراحة عامة	RAD702				■						■
باثولوجيا	RAD703				■						■
تشريح مقطعي متقدم	RAD704				■						■
إحصاء وطرق بحثية	RAD705			■							■
علوم حاسب آلي	RAD706		■								■
جزء ثانى		■					■	■	■	■	■
أساسيات علم الأشعة											
أشعة الجهاز العصبي	RAD707		■				■	■	■	■	■
أشعة الوجه والرقبة	**RAD708**					■					■
أشعة الجهاز الحركي	**RAD709**										
أشعة القلب والصدر	**RAD710**										
أشعة الجهاز الهضمي	**RAD711**										
أشعة المسالك البولية والتناسلية	**RAD712**										
أشعة الأوعية الدموية	**RAD713**										
أشعة الثدي	**RAD714**										
أشعة الأطفال	**RAD715**										
الأشعة التداخلية	**RAD716**										
علم الأشعة للمجموعات الخاصة											
أشعة رعاية مركزة	**RAD717**										
أشعة الطوارئ	**RAD718**										

أشعة الأورام	**RAD719**										
أشعة المسنين	**RAD720**										
أفاق جديدة	**RAD721**										

أستاذ المادة
التوقيع

رئيس القسم
التوقيع :