PROGRAMME SPECIFICATION

(Doctorate degree in Diagnostic Radiology)

Faculty of Medicine- Mansoura University

(A) Administrative information

(1) Programme Title & Code	Doctorate degree in Diagnostic Radiology
(2) Final award/degree	MD
(3) Department (s)	Diagnostic Radiology Department
(4) Coordinator	Dr. Eman mohammad Abd Al-Salam Dr. Nehal Elbatooty
(5) External evaluator (s)	Prof.Dr. Adel Abd Al-Latef Sannor Faculty of Medicine-Zagazig University
(6) Date of approval by the Department`s council	28/6/2016
(7) Date of last approval of programme specification by Faculty council	9/8/2016

(B) Professional information

(1) Programme Aims:

The broad aims of the Program are as follows:

- Knowledge and understanding of all essential information about imaging and the interventional techniques in the different body organs and systems.
- Acquire all professional skills that enable them to efficiently practice both diagnostic and interventional radiology using different imaging modalities.
- Be aware of all needs for life learning of the medical profession; communication skills and effective contributions to research teamwork.

(2) Intended Learning Outcomes (ILOs):

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

A- Knowledge and Understanding:

A1. Describe the physics and technical principles of the different imaging modalities.

A2. Identify the recent technical innovations in different imaging modalities and explain how to apply them to reach a final diagnosis.

A.3 Demonstrate the anatomy of the different parts of the body in the different imaging modalities.

A4. Classify and describe the etiology, pathogenesis and clinical features of the different pathological diseases that affect the different body regions and correlate them with their radiologic appearances.

A5. Differentiate between the appearances of the pathological conditions on the different imaging modalities and describe them efficiently in the case reports by all means: written oral and radiologic.

A6. List the interventional radiologic procedures in different body systems: biliary and vascular embolization procedures.

A7. Name the suitable interventional instruments (catheters and cannulas) and embolizing material.

A8. Radiologic approach to emergency medicine and life threatening illnesses; non invasive and invasive intervention and pre and postoperative follow up.

A9. Participate in public health services and screening programs e.g. mammography for breast cancer screening.

A10. Review how to conduct efficiently and independently the assigned research issue.
A11. Identify radiation safety and protection measures.
A12. Explain the value of enhancing patient safety & standardization of CT contrast media practice.
A13. Identify the national code of ethics, medico-legal aspects, malpractice and common medical mistakes.

B- Intellectual skills:

B1. Integrate clinical information with radiological interpretation to reach the appropriate diagnosis/ differential diagnosis.
B2. Construct an algorithmic approach to any organ system pathology and follow it step by step ending with sonographic/CT guided biopsy taking and pathologic assessment.
B3. Design the initial course of management for critical emergencies and traumatized cases.
B4. Cooperate with the referring physician by all means to reach the proper treatment decision for the patient.
B5. Enhance leadership capabilities required for conducting a teamwork aim to achieve a certain research subject.
B6. Assemble available human and equipment resources in the field of study to achieve the search goals in a given time scale.
B7. Express ideas and scientific arguments in case reporting and problem solving debates.

C-Professional/practical skills:

C1. Use of the technical refinements in each imaging modality in order to establish the diagnosis with the highest accuracy and in the shortest time.
C2. Use the contrast media and the isotopes in the optimal way regarding the dose and the time.
C3. Provide the maximum protective measures to avoid the risks of radiation on the patients, workers and visitors.
C4. Provide the first aid measures for patients who develop hypersensitivity reaction or any life-threatening clinical attack while performing the examination
C5. Cooperate with colleagues, various health and social care professionals.
C6. Recognize limitations in knowledge and equipment and refer patients to an appropriately equipped facility.
C7. Perform the essential basic radiologic interventional procedures e.g US/CT guided biopsies.

D- Communication & Transferable skills

D1. Use the different computer programs in the different units of the diagnostic radiology department and communicate efficiently with medical staff of other departments.

D2. Retrieve, manage and manipulate information by all means, including electronic means to regularly updated with the recent technical innovations.

D3. Present information clearly in the form of written radiology reports, electronic and oral forms.

D4. Attend interactive case study sessions and express ideas and effective arguments about debatable cases.

D5. Work efficiently within a team work to reach the goal of a research.

D6. Analyze and use numerical data (including the use of simple statistical methods) to assess the results of a number of case studies and assess the efficiency of a certain imaging modality in the radiologic characterization of a certain organ disease.

(3) Academic standards:

Academic standards for the program are attached in Appendix I. in which **NARS** issued by the National Authority for Quality Assurance & Accreditation in Education are used. External reference points/Benchmarks are attached in Appendix II.

3. a- External reference points/benchmarks are selected to confirm the appropriateness of the objectives, and ILOs.

We follow ILOs recommended ARS of Mansoura faculty of medicine.

3. b- Comparison of the specification to the selected external reference/ benchmark:

Our department is estimated to cover 85% of ILOs.

Methods:

We are developing or methodology to fully cover learning requirements, e.g. E-learning methods, researches assignment and upgrading our teaching tools and equipment.

1. PPT lectures.
2. E learning methods.
3. Self learning, problem solving and case presentation.
4. Research assignment.
5. Conference attendance, organization & participation.
6. Workshop attendance & participation.
7. Intervention procedure co-participation.

(4) Curriculum structure and contents:

4.a- Duration of the program: 42 months.

4.b- program structure:

-First part 5 credit hours (5 hours per week for only 1st semester, sparing the last month for revision in all semesters)

-Second part: 25 credit hours (25 hours per week for 3rd , 4th, , 5th and 6th semesters)

-Thesis 15 credit hours (6 hours per week for 2nd , 3rd , 4th and 5th semesters)

- Clinical training program 13 credit hour per week in the 36 months duration

- Scientific activities 2 credit hours per week in the 36 months duration.

4) Program courses:

First part

Course Title	Course Code	NO. of hours per week					Total teaching hours	Credit hours	Programme ILOs covered (REFERRING TO MATRIX)
		Theoretical		Laboratory /practical	Field	Total			
		Lectures	Seminars						
Interventional Radiology	D 629 AIR	2.5				2.5	37.5	2.5	
Physics	D 629 ARP	2.5				2.5	37.5	2.5	
							75	5	

Second part

Course Title	Course Code	NO. of hours per week					Total teaching hours	Credit h.	Programme ILOs covered (REFERRING TO MATRIX)
		Theoretical		Laboratory /practical	Field	Total			
		Lectures	seminars						
THIRD SEMESRER	AD 629 BR								
Radiology of the	D 629 BRTd,	8		4					

chest							52.5	2.5	
Radiology of the heart	D 629 BRTe						22.5	1	
Musculo- skeletal Radiology	D 629 BRTc	8		4			90	4	
Vascular imaging	629 BR Ti	4		2			22.5	1	
FOURTHSEMESTER									
radiology of the head & neck	629 BR Tb	8		4			52.5	2.5	
Neuroradiology	629 BR Ta	8		4			90	4	
Breast imaging	629 BR Tj	4		2			22.5	1	
FIFTH SEMESTER									
Gastrointestinal Radiology	629 BR Tf	8		4			90	4	
Genital system radiology	629 BR Th	8		4			22.5	1	
Urinary system radiology	RAD 629 BRTg						22.5	1	
pediatric imaging	629 BR Tk	4		2			45	2	
SIXTH SEMESTER									
Elective courses (choose 1 from 3) -Recent advances in neuroradiology Recent advances in cardiac imaging. Recent advances in vascular imaging.	RAD 629 ANR RAD 629 ACI RAD 629 AVI	15					15	1	
							547.5	25	

Program– course ILOs Matrix

All courses` specifications are attached in Appendix III.

D. Programme &Courses Outcome Map

Course	Programm ILOs																																				
	A													B							C							D										
	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5					
Interventional radiology			•			•	•				•			•		•			•																		
Radiological Physics	•	•										•							•																		
Neuroradiology	•	•	•	•	•			•		•				•	•	•	•	•	•	•	•	•	•		•	•			•		•	•	•				
radiology of the head & neck	•	•	•	•	•			•		•				•	•	•	•	•	•	•	•	•	•		•	•			•		•	•	•				
radiology of the heart	•	•	•	•	•			•		•			•	•	•	•	•	•	•	•	•	•	•		•	•			•		•	•	•				
radiology of the chest	•	•	•	•	•			•		•			•	•	•	•	•	•	•	•	•	•	•		•	•			•		•	•	•				
musculo skeletal radiology	•	•	•	•	•			•		•			•	•	•	•	•	•	•	•	•	•	•		•	•			•		•	•	•				
Gastrointestinal Radiology	•	•	•	•	•			•		•			•	•	•	•	•	•	•	•	•	•	•		•	•			•		•	•	•				
Radiology of urinary	•	•	•	•	•			•		•			•	•	•	•	•	•	•	•	•	•	•		•	•			•		•	•	•				
Radiology of genital system	•	•	•	•	•			•		•			•	•	•	•	•	•	•	•	•	•	•		•	•			•		•	•	•				
vascular imaging	•	•	•	•	•			•		•				•	•	•	•	•	•	•	•	•	•		•	•			•		•	•	•				
Breast imaging	•	•	•	•	•			•	•	•			•	•	•	•	•	•	•	•	•	•	•		•	•			•		•	•	•				
pediatric imaging	•	•	•	•	•			•	•	•				•	•	•	•	•	•	•	•	•	•		•	•			•		•	•	•				
Recent advances in neuroradiology			•								•			•		•	•	•	•	•																	
Recent advances in cardiac imaging	•	•	•	•	•			•		•				•	•	•	•	•	•	•																	
Recent advances in vascular imaging		•	•	•	•			•		•			•	•	•	•	•	•	•	•																	

D. Aims in correlation with programm ILOs

Aims	Programm ILOs																																				
	A													B							C							D										
	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6				
Knowledge and understanding of all essential	•					•	•	•	•		•	•		•		•	•				•	•	•	•		•		•		•	•						

information																															
Professional skills	•	•					•				•			•			•	•						•	•	•	•	•	•	•	•
Awareness of all needs for life learning of the medical profession			•	•	•			•	•			•			•		•	•	•					•				•		•	•	•

C. Methods in correlation with programed ILOs:

1. PPT lectures are intended to fulfill **knowledge** of basic physical and technical principals of imaging modalities, anatomy, pathology and intervention procedures. (A)
2. E learning methods to fully cover required basic **knowledge**, expand **intellectual skills** & and developed efficient **professional /practical skills**. (A, B & C).
3. Self learning, problem solving and case presentation to construct clear **algorithmic approach** for radiological interpretation and dealing critical emergencies. (B & C).
4. Research assignment to encourage team work integration and upgrading applications of recent **technical innovations** (C & D).
5. Conference attendance, organization & participation to develop skills of **interactive case study**, and express ideas in the form of written, oral and electronic **case presentations**. (D).
6. Workshop attendance & participation: to develop **hand on diagnostic skills** regarding recent imaging modalities and new techniques**.** (C & D).
7. Intervention procedure co-participation: to gain experience and efficiently perform essential radiological **interventional procedures** (A & C).

(5) Program admission requirements:

- General requirements:

  By laws regulating post graduate Studies.

- Specific requirements (if applicable):

  N/A

(6) Regulations for progression and program completion:

(all documented in the log book)

First part :

- **Minimally accepted attendance is 70%**
- **Passing MCQ exam.**

Second part

1- Attendance Criteria:

- Minimally accepted attendance in each course is 70%.
- Passing MCQ exam after each semester

2-Scientific activities

-for attending

- Conferences
- thesis discussions
- meetings

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3-Practical work:

- Rotations in radiology dpt. and radiology units in different hospitals according to the schedule determined by the supervisors.(at least 70% of the daily schedule)

نظام الامتحان وتوزيع الدرجات: (دكتوراه الأشعة التشخيصية)

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امتحان الجزء الأول

المقرر	الاختبار	الدرجة	
		تحريري	MCQ
الفيزياء الإشعاعية	إختبار تحريري مدته ثلاث ساعات	80	20
الأشعة التداخلية	إختبار تحريري مدته ثلاث ساعات	80	20

الامتحان النهائي الشامل

المقرر	الاختبار	الدرجة				إجمالي
		تحريري	MCQ	شفهي	إكلينيكي	
الأشعة التشخيصية	٣ اختبارات تحريرية مدة كل منها ثلاث ساعات + اختبار شفهي + اختبار إكلينيكي في الأشعة التشخيصية والتصوير الطبي والتداخل الإشعاعي.	64 + 64 + 64	48	١٠٠	١٠٠	٤٤٠
المقرر الاختياري	اختبار تحريري مدته ساعة	24	6			٣٠

5) Assessment methods:

5.1: Written examination for assessment of knowledge and intellectual skills
5.2: Structured oral examination for assessment of ILOs number: knowledge and intellectual skills
5.3: OSCE examination for assessment of practical and intellectual skills
5.4: MCQ examination for assessment of ILOs number knowledge and intellectual skills.

(7) Evaluation of Programme's intended learning outcomes (ILOs):

Evaluator	Tools*
Internal evaluators : 1-Prof.Dr/ **Mahmoud Abdelshaheed** (Head of the Depart 2-Prof. Dr/ **Sabry Al-Mogy** 3-Prof. Dr/ **Talal Amer**	Observation Group discussion
External Evaluator: Prof. Dr/ **Adel Abd Al-Latef Sannor** , Faculty of Medicine, Zagazig University	Communication Email
Senior student : **none**	
Alumni: **none**	
Stakeholder: **none**	

We certify that all information required to deliver this programme is contained in the above specification and will be implemented. All course specifications for this programme are in place.

Programme coordinator: Name: D. Eman Abd El Salam D. Nehal ElBatooty	Signature & date:
Dean: Name: P.D. Elsaeed abd el-hady	Signature & date:
Executive director of the quality assurance unit: Name: P.D. Seham Gad Elhaq	Signature & date: