

**مقارنة ما يقدمه البرنامج من نتائج تعليمية مستهدفة مع المعايير المرجعية لبرنامج
الماجستير في الأشعة التشخيصية**

أ - المعرفة والفهم:

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لجامعة	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا
<ul style="list-style-type: none"> - Technology of imaging - Radiological anatomy - Isotopes - Physics - Pathology related to radiology 	A1 A2 A6 A9	<p>Define the basic physics of the different imaging modalities.</p> <p>Describe the radiological anatomy of the different parts of the body in the different imaging modalities.</p> <p>Demonstrate and express the radiologic appearance of different pathological diseases that affect the different body regions</p> <p>Explain the main developmental changes in humans and recognize the various pediatric congenital anomalies and developmental abnormalities in the body and major organ systems, presenting throughout the age spectrum.</p> <p>Describe the different interventional radiological modalities: angiography, cholangiography, interventional procedures e.g. embolization.</p>	<p>1) Theories, concepts and specialized knowledge of the learning area and also sciences appropriate to the professional practice.</p>
<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric 	A5 A7 A8 A10 A11	<p>Identify Clinical correlation between the radiologic appearance and the etiology, pathogenesis and clinical features of common and life threatening illnesses.</p> <p>Identify and recognize Radiologic approach to emergency medicine and life threatening illnesses; non invasive and invasive intervention and pre and postoperative follow up.</p> <p>Identify the role of radiology in public health services and screening programs e.g. mammography for breast cancer</p>	<p>2)Mutual influence between Professional practice and its impacts on the environment.</p>

		<p>screening</p> <p>Define and be Aware of radiation safety and protection measures.</p> <p>Describe best methods and protocols for enhancing patient safety & standardization of CT contrast media practice.</p>	
	A4 A14	<p>– Recognize the Differential diagnosis between the various pathological conditions on the different imaging modalities.</p> <p>– Understand the applications of isotope in different organs and their role in the differential diagnosis and early detection of metastasis.</p>	3) Scientific developments in the field of specialization
<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric - Interventional radiology 	A12 A15	<p>Be aware of and recognize the national code of ethics, medico-legal aspects, malpractice and common medical mistakes.</p> <p>Discuss the risks and hazards of isotope material.</p>	4)Moral and legal ethics of the Professional practice in the area of specialization.
<ul style="list-style-type: none"> - Technology of imaging 	A10 A11 A13	<p>Define and be Aware of radiation safety and protection measures.</p> <p>Describe best methods and protocols for enhancing patient safety & standardization of CT contrast media practice.</p> <p>. Study the basic physical principles of the different isotope modalities and the biochemical criteria of the isotope materials used.</p>	5) The concepts and principles of quality of the professional practice in the area of specialization.
<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric - Interventional radiology 	A12	<p>Be aware of and recognize the national code of ethics, medico-legal aspects, malpractice and common medical mistakes.</p>	6)The basics and ethics of scientific research..

ب - القدرات الذهنية :

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لجامعة	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا
<ul style="list-style-type: none"> - Technology of imaging - Isotopes - Physics - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric 	B1 B5	<p>Integrate basic physical, technical and radiological principles with clinical history and data offered by the referring clinician to gather a full picture of the case available.</p> <p>Assemble advanced imaging modalities, scientific methods, regular conference attendance and computer & internet for research purposes.</p>	1)Analyze and evaluate of information in the field of specialization and make full use of such information to solve problems.
<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric 	B2-B3- B4	<p>Reason deductively in solving clinical problems.</p> <p>Use personal judgment for critical and analytical problem solving and seek out information.</p> <p>Recognize and cope with uncertainty that is unavoidable in medical practice by accepting and reacting with uncertain situation through proper counseling, consultation and referral.</p>	2) Solve specific problems on the basis of limited and contradictory information.
<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast <p>Pediatric</p>	B2-B3	<p>– Reason deductively in solving clinical problems.</p> <p>Pick up the abnormality in the film</p> <p>Interpret the available data into a full radiologic report</p> <p>Analyze and evaluate the results to exclude or suggest the necessity of further evaluation.</p> <p>Decide the final diagnosis or differential diagnosis of the case.</p> <p>Discriminate between technical errors, normal anatomical</p>	3)Demonstrate a high level of competence in the coordination of different sources of knowledge to solve professional problems..

		<p>variants and pathology.</p> <p>Suggest the imaging modality of choice best for evaluating the specific organ of interest.</p> <ul style="list-style-type: none"> - Use personal judgment for critical and analytical problem solving and seek out information. 	
<ul style="list-style-type: none"> - Technology of imaging - Physics - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric 	B5	<p>Assemble advanced imaging modalities, scientific methods, regular conference attendance and computer & internet for research purposes.</p>	4)Carry out a research study and / or writing a scientific methodology study on research problem.
<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric - Interventional radiology 	B4	<p>Use personal judgment for critical and analytical problem solving and seek out information.</p> <p>Recognize and cope with uncertainty that is unavoidable in medical practice by accepting and reacting with uncertain situation through proper counseling, consultation and referral.</p>	5)Assess and analyze risks of the Professional practice in the field of specialization.
<ul style="list-style-type: none"> - Technology of imaging - Radiological anatomy - Isotopes - Physics - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric 	B1 B2 B5	<p>Integrate basic physical, technical and radiological principles with clinical history and data offered by the referring clinician to gather a full picture of the case available.</p> <p>Reason deductively in solving clinical problems.</p> <p>Assemble advanced imaging modalities, scientific methods, regular conference attendance and computer & internet for research purposes.</p>	6)Plan to improve performance in the field of specialization
<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric 	B3- B4	<p>Use personal judgment for critical and analytical problem solving and seek out information.</p> <p>Recognize and cope with uncertainty that is unavoidable</p>	7)Make career decisions in different professionalaspects

		in medical practice by accepting and reacting with uncertain situation through proper counseling, consultation and referral.	
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ج - المهارات العملية:

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لجامعة	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا
<ul style="list-style-type: none"> - Technology of imaging - Isotopes - Physics - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric - Interventional radiology 	C2 C3 C4 C5 C6	<p>Apply the contrast media and the isotopes in the optimal way regarding the dose and the time.</p> <p>Provide the maximum protective measures to avoid the risks of radiation on the patients, workers and visitors.</p> <p>Provide the first aid measures for patients who develop hypersensitivity reaction or any life-threatening clinical attack while performing the examination</p> <p>Develop communication skills with colleagues, various health and social care professionals.</p> <p>Recognize limitations in knowledge and equipment and refer patients to an appropriately equipped facility.</p>	1) professional skills specialization
<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric 	C1 C5	<p>Apply the technical refinements in each imaging modality in order to establish the diagnosis with the highest accuracy and in the shortest time.</p> <p>-Develop communication skills with colleagues, various health and social care professionals.</p>	2- reports
<ul style="list-style-type: none"> - Technology of imaging - Isotopes - Physics 	C1 C2	C1. Use of the technical	3) tools specialization

<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric <p>Interventional radiology</p>		<p>refinements in each imaging modality in order to establish the diagnosis with the highest accuracy and in the shortest time.</p> <p>C2. Use the contrast media and the isotopes in the optimal way regarding the dose and the time.</p>	
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د- مهارات الاتصال:

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لجامعة	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا
<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric <p>Interventional radiology</p>	D1 D4	<p>Use the different computer programs in the different units of the diagnostic radiology department and communicate efficiently with medical staff of other departments.</p> <p>Attend interactive case study sessions and express ideas and effective arguments about debatable cases.</p>	Communicate effectively in different aspects.
<ul style="list-style-type: none"> - Technology of imaging - Isotopes - Physics - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric <p>Interventional radiology</p>	D1 D2 D3 D4	<p>Use the different computer programs in the different units of the diagnostic radiology department and communicate efficiently with medical staff of other departments.</p> <p>Retrieve, manage and manipulate information by all means, including electronic means to regularly updated with the recent technical innovations.</p> <p>Present information clearly in the form of written radiology reports, electronic and oral forms.</p> <p>Attend interactive case study sessions and express ideas and effective arguments about debatable cases.</p>	Demonstrate efficient IT capabilities in such a way that serves in the development of the professional practice.

<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric <p>Interventional radiology</p>	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) Adopt self-assessment and specify his needs of personal learning..
<ul style="list-style-type: none"> - Radiological anatomy - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric <p>Interventional radiology</p>	D1 D2	Use the different computer programs in the different units of the diagnostic radiology department and communicate efficiently with medical staff of other departments. Retrieve, manage and manipulate information by all means, including electronic means to regularly updated with the recent technical innovations.	4)Use different resources for information and knowledge..
<ul style="list-style-type: none"> - Neuroradiology - Head ead & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric <p>Interventional radiology</p>	D4	Attend interactive case study sessions and express ideas and effective arguments about debatable cases.	Establish rules and indicators for assessing the performance of others.
<ul style="list-style-type: none"> - Neuroradiology - Head & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric <p>Interventional radiology</p>	D5 D7	Work efficiently within a team work to reach the goal of a research. Knowing the basic principles of the imaging modalities utilized in a certain research, the candidate could provide valuable contributions to the teamwork and collect valuable data.	6) Collaborate effectively within multidisciplinary team and lead teams in different professional contexts.
<ul style="list-style-type: none"> - Neuroradiology - Head & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric <p>Interventional radiology</p>	D2	Retrieve, manage and manipulate information by all means, including electronic means to regularly updated with the recent technical innovations.	7) Demonstrate a high level of competence in the time management

<ul style="list-style-type: none"> - Neuroradiology - Head & neck - Chest & heart - Musculo skeletal - Gastrointestinal - Genitourinary - Vascular - Breast - Pediatric Interventional radiology	D2	Retrieve, manage and maintain information by all means, including electronic means to regularly update the recent technical innovations	8) Continuous self-education.
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