

Curriculum for Associate Degree Program in Radiologic Technology Specialization

The curriculum for associate degree in Radiologic Technology (Three-years Program) consists of (96 credit hours) as follows:

Serial No.	Requirements	Credit Hours
First	University Requirements	12
Second	Program Requirements	18
Third	Specialization Requirements	66
Total		96



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The curriculum of Radiologic Technology

First: University requirements (12 credit hours) as follows:

Course No.	Course Title	Credit Hours	Weekly Contact Hours		Prerequisite
			Theoretical	Practical	
22001101	Arabic Language	3	3	-	
22002101	English Language	3	3	-	
21901100	Islamic Culture	3	3	-	
21702101	Computer Skills	3	1	4	
Total		12	10	4	

Second: Program requirements (18 credit hours) as follow:

Course No.	Course Title	Credit Hours	Weekly Contact Hours		Prerequisite
			Theoretical	Practical	
21301123	Medical Physics	3	3	-	
21301131	Biochemistry	2	2	-	
21301132	Biochemistry/ Practical	1	-	3	21301131*
21102111	Anatomy	3	3	-	
21102113	Physiology	3	3	-	21102111*
21102115	Medical Sociology	3	3	-	
21102117	Medical Terminology	3	3	-	
Total		18	17	3	

* Co-requisite



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Third: Specialization Requirements (66 credit hours) as follows:

Course No.	Course Title	Credit Hours	Weekly Contact Hours		Prerequisite
			Theoretical	Practical	
21113101	First Aids	3	2	3	
21104121	Microbiology	3	2	3	
21115231	Biostatistics	3	3	-	
21109151	Patient Care in Radiology Department	3	2	3	
21104131	Pathophysiology	3	3	-	21102113
21109255	Radiographic Pathology	3	3	-	21104241
21109121	Radiographic Positioning 1	3	3	-	
21109222	Radiographic Positioning 2	3	3	-	21109121
21109323	Radiographic Positioning 3	3	3	-	21109222
21109224	Radiological Cross-sectional Anatomy	3	3	-	21109323
21109231	Principles of Exposure 1	3	3	-	
21109232	Principles of Exposure 2	3	3	-	21109231
21109161	Radiographic Equipment	3	2	3	
21109263	Radiobiology and Radiation Protection	3	2	3	21109161
21109257	Radio pharmacology	3	3	-	
21109165	Quality Assurance and Quality Control	3	2	3	
21109371	Contrast Media Procedures	3	3	-	21109257
21109381	Physics of Advanced Imaging Modalities 1	3	2	3	21301123
21109382	Physics of Advanced Imaging Modalities 2	3	2	3	21109381
21109100	Field Training 1*	3	-	-	21109121
21109200	Field Training 2*	3	-	-	21109222
21109300	Field Training 3*	3	-	-	21109323
Total		66	49	57	

* Field Training equivalent to 280 training hours.

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Guiding Plan

السنة الأولى					
الفصل الدراسي الثاني			الفصل الدراسي الأول		
الساعات المعتمدة	اسم المادة	رمز المساق	الساعات المعتمدة	اسم المادة	رمز المساق
3	English Language	22002101	3	Arabic Language	22001101
3	Computer Skills	21702101	3	Islamic Culture	2191100
2	Biochemistry	21301131	3	Medical Physics	21301123
1	Biochemistry/ Practical	21301132	3	Anatomy	21102111
3	Medical Terminology	21102117	3	Physiology	21102113
3	Patient Care In R.D.	21109151	3	Microbiology	21104121
3	Radiographic Positioning 1	21109121			
18	المجموع		18	المجموع	

السنة الثانية					
الفصل الدراسي الثاني			الفصل الدراسي الأول		
الساعات المعتمدة	اسم المادة	رمز المساق	الساعات المعتمدة	اسم المادة	رمز المساق
3	Field Training 2	21109200	3	First Aids	21113101
3	Principles of Exposure 2	21109232	3	Principles of Exposure1	21109231
3	Radio pharmacology	21109257	3	Pathophysiology	21104131
3	Radiographic Pathology	21109255	3	Radiobiology and R. Protection	21109263
3	Radiographic equipment	21109161	3	Radiographic Positioning 2	21109222
3	Medical Sociology	21102115	3	Field Training 1	21109122
18	المجموع		18	المجموع	

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السنة الثالثة					
الفصل الدراسي الثاني			الفصل الدراسي الأول		
الساعات المعتمدة	اسم المادة	رمز المساق	الساعات المعتمدة	اسم المادة	رمز المساق
3	Field Training 3	21109300	3	Contrast Media Procedures	21109371
3	Physics Of Advanced I.M. 2	21109382	3	Radiographic Positioning 3	21109323
3	Radiological Cross-Sectional Anatomy	21109224	3	Physics of Advanced I.M. 1	21109381
			3	Quality assurance & Q.C	21109165
			3	Biostatistics	21115231
9	المجموع		15	المجموع	



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Brief Course Description

Course Title	Course No	Credit Hours (Theoretical /Practical)
لغة عربية	22001101	3 (3-0)
<p>تتضمن هذه المادة مجموعة من المهارات اللغوية بمستوياتها المختلفة و صرفها و نحوها و في مستواها البلاغي و مستواها المعجمي و مستواها الكتابي، بالإضافة إلى تطبيقات عملية على استخدام المعاجم العربية و تطبيقات على بعض المهارات الكتابية التي لا يستغني عنها الدارسون في حياتهم العملية، و لكي يتصل الدارسون بالنصوص العربية الراقية، يجب أن تتضمن هذه المادة تذوقاً لمجموعة من النصوص القرآنية و الأحاديث و بعض النصوص الشعرية و القصصية.</p>		
لغة انجليزية	22002101	3 (3-0)
<p>The course intends to give additional practice leading to more language proficiency. The student is expected to use English as a second language in academic training and future work.</p>		
ثقافة إسلامية	21901100	3 (3-0)
<p>تتضمن هذه المادة مفهوم الثقافة و الثقافة الإسلامية و بعض المفاهيم الأساسية المرتبطة بها، وبالتالي خصائصها و مصادرها، مجالاتها، و من ثم دورها في تكوين الشخصية الإسلامية، و تتناول مفهوم الغزو الثقافي و أساليبه و آثاره على الأمة.</p>		
مهارات حاسوب	21702101	3 (1-4)
<p>تدريب الطالب على استخدام البرامج الحاسوبية الجاهزة لمعالجة النصوص و إدخال البيانات المالية و الإحصائية لإعداد الجداول الإحصائية و الرسوم البيانية لإجراء التحليلات و المحاكاة و التنبؤات مع التركيز على ما هو مستخدم في المؤسسات المصرفية و المالية.</p>		
Medical Physics	21301123	3 (3-0)
<p>This course is designed to acquaint the students with knowledge about forces ad units of forces, energy changes in the body, heat loss from the body, and breathing mechanism. It helps the students acquire knowledge about electric signals of the body, general properties</p>		

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of sound in the body as a drum (percussion in medicine) and vision defects and corrections. Moreover, it makes the students recognize sources of radioactivity, nuclear medicine imaging devices, and the dose in nuclear medicine and therapy with radioactivity.

Biochemistry**21301131****2 (2-0)**

Biochemistry course introduces the basic essential information to the college students to know the biomaterials which we deal with during over daily activities, classification, chemical structure, reactions and how the human body metabolizes such biomolecules work.

Biochemistry/ Practical**21301131****1 (0-3)**

This course deals with performing practical applications for the different classes of biomolecules including carbohydrates, lipids and proteins.

Anatomy**21102111****3 (3-0)**

The course deals with structural anatomy of the body as a whole to provide the students with knowledge of the structure of the body of the human being. This course deals all the systems of the body in an attempt to make it easy for the paramedical students to recognize the organs of the body.

Physiology**21102113****3 (3-0)**

This course is designed to provide the students with the knowledge of the functions performed by the various parts and organs of the human body. It also deals with the integrity of the body systems as a whole to let the student recognize the physiological changes that happen within the human body and how the body systems work.

Medical Sociology**21102115****3 (3-0)**

يتناول هذا المساق المضمون المعرفي لعلم الاجتماع من حيث الفكر الاجتماعي والرعاية الصحية. فيقدم عرضاً لمفاهيم: الصحة، المرض، الرعاية الصحية، الخدمة الصحية والسلوك المرضي. وكذلك يتناول الدور الذي يمارسه المجتمع في الخدمة الصحية والسياق الاجتماعي للصحة والمرض وانعكاسات مفهوم الصحة والمرض على الخدمات الصحية. ثم يتناول المساق أهم الميادين الدراسية في العلوم الاجتماعية والسلوكية وذلك لفهم السلوك الاجتماعي على المستوى النظري والعملي من التطرق إلى مفاهيم: المعايير، الاتجاهات و القيم.

Medical Terminology**21102117****3 (3-0)**

This course is designed to develop a working knowledge of the language of medicine to let

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students acquire word building skills by learning word roots, suffixes, prefixes and abbreviations. By relating terms to body systems, students should identify the proper use of words in a medical environment. Knowledge of medical terminology enhances the students' ability to communicate and practice his/her work successfully on the purpose of providing health services.

First Aids	21113101	3 (2-3)
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This course is designed to introduce the student into emergency medical care providing him with the knowledge and skills that make him able to do patient assessment and choose first Aid priorities and the more suitable instruments which allow him to manage Airway Obstruction, shock and bleeding, soft-Tissue injuries (wounds), soft tissue Injuries (Burns) trauma and fractures, medical emergency (Allergies Reaction) and medical emergency (Poisoning) and, environmental emergency, and altered mental status, It also introduces him to the skills needed for doing CPR.

Microbiology	21104121	3 (2-2)
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The course introduces the students into the whatness of microbiology with an emphases put on the general classifications of microbiology, bacteriology and the control of microbial growth. It also deals, with host parasite relationship, virology mycology principles of disease and epidemiology. Moreover, it deals with the mechanism of pathogenicity (Pathogenic Bacteria, Antimicrobial drugs, nosocomial infections), and the management of the collection, transportation, preservation and disposal of samples Finally, it shows how the results are reported and recorded.

Biostatistics	21109341	3 (3-0)
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The course deals with the definition of epidemiology and biostatistics .It introduces the students into types and sources of health data, methods of data collection, tools “instrument and the application of biostatistics. Concentration is put on the nature of statistics (under standing data variables, measurement scales and data presentation). Then, it deals with Epidemiologic orientation to health and disease. Finally emphasis is put on Epidemiological aspects of communicable diseases and epidemiological surveillance and screens for diseases

Patient Care in Radiology Department	21109151	3 (2-3)
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This course covers the general patients care in radiology departments. Moreover, it deals with vital signs, cardiac arrest, accident victims, aseptic techniques, contrast media reactions.

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It also provides students with some knowledge about methods of sterilization and isolation.

Pathophysiology	21104131	3 (3-0)
This course focuses on the physiological changes that occur due to external and internal environmental stresses, pathological processes and the response that produces signs and symptoms. The content is based on common health problems, including special health needs of children and the elderly. The student will explore a variety of concepts in pathology which will be utilized in decision-making and actions related to other anesthesia technician student courses.		
Radiographic Pathology	21109255	3 (3-0)
This course concentrates on the appearance of pathological effects of anatomical radiology. It Provides students with basic anatomical positions and their normal appearances, also differentiates between structural and abnormal body tissues. It enable students to differentiate between structural and functional aspects of diseases, links anatomical structural and functional aspects of diseases, links anatomical structures with their radiological appearances.		
Radiographic Positioning 1	21109121	3 (3-0)
This course provides the students with the basic essential knowledge and information of the positioning techniques in radiography of the upper extremities, lower extremities and vertebral column, as well as their radiographic anatomy. In addition it deals with special radiographic procedures like myelography.		
Radiographic Positioning 2	21109222	3 (3-0)
This course covers the basic radiographic anatomy of the skull and basic positioning techniques of the skull, paranasal sinuses, mastoids & mandible. It also deals with the radiographic anatomy of the chest and bony thorax in addition to their basic positioning techniques.		
Radiographic Positioning 3	21109323	3 (3-0)
This course covers the basic positioning techniques of the abdomen and pelvis an addition to their basic radiographic anatomy. It also provides the students with the basic radiographic anatomy and positions of the female breast (Mammography), in addition to dental radiography and new imaging modalities (CT, MRI, etc).		

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Principles of Exposure 1	21109231	3 (3-0)
<p>The course Provides the Students with the essential knowledge about the structure and components of the imaging system like x-ray tube, x-ray film, and others and how to deal with them.</p> <p>It also provides the students with the basic information about the chemical structure of processing solutions and x-ray film processing, enabling the student to know the process of image formation.</p>		
Principles Of Exposure 2	21109232	3 (3-0)
<p>The aim of this course is to provide the students with the Knowledge and understanding means of the other parts of the imaging system including image intensifier, radiographic techniques like fluoroscopy, tomography, stereo -radiography, xeroradiography and magnification</p>		
Radiographic Equipment	21109161	3 (2-3)
<p>The aim of this course is to provide the student with the basic essential knowledge about the available equipments in the radiology department including the design and function of these equipments; in addition to their performance and maintenance where possible; and finally to be familiar with the impact of technology on the progress of diagnostic imaging .</p>		
Radiobiology and radiation protection	21109263	3 (2-3)
<p>The course introduces the students into diagnostic radiology and nuclear medicine. It provides students with basic knowledge required to minimize excessive radiation exposure of patients, public and operators. Moreover, it deals with different types of radiosensitivity of various body organs, enabling students to know various radiation hazards and understanding the radiation units and the main differences between them.</p>		
Radio pharmacology	21109257	3 (3,0)
<p>This course provides the students with the basic knowledge about the drugs used in radiology department either for diagnosis, aiding diagnosis. It also provides students with the aim of using of contrast media, chemical and physical properties of C.M. adverse reaction of C.M and its treatment. The course deals with effect of C.M on affect body organs.</p>		

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Quality assurance and quality control in diagnostic radiology	21109165	3 (2-3)
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This course provides the student with the basic knowledge about the concept of quality assurance & control, and their benefits. It also provides the student with the necessary information about the procedures used in quality control tests for different X-Ray systems, as well as retake film analysis and protective devices.

Contrast media procedures	21109371	3 (3-0)
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The course is concentrating on radiographic Procedures that need contrast media and special preparation & techniques. It provides the Students with knowledge of various types of contrast media used in radiology department, and the adverse reaction of all types of contrast media with special preparation for each radiographic procedure, indication and contraindications of each procedure and taking care of the patient after the end of the procedure.

Physics of advanced imaging modalities 1	21109381	3 (2-3)
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This course aims to provide the students with the basic physical principles of Ultrasound, nuclear medicine and digital video imaging (DVI) as well as the major configuration of these units and how to obtain a high quality images in addition to understand the safety measures of these systems

Physics of advanced imaging modalities 2	21109382	3 (2-3)
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This course provides the students with the knowledge about the basic physical Principles of computed tomography and magnetic resonance imaging enabling them to know how to obtain images by these units and to know the safety measures of these systems.

Radiological cross-sectional anatomy	21109224	3 (3-0)
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This course provides the students with a complete idea and information about the radiological appearance of anatomical parts of the body as seen in cross sectional and multiplanner imaging via CT and MRI when examining the brain, thorax, abdomen, pelvis and spine

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Field training 1	21109100	3 (280 training hours)
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This course provides the student with practical skills in radiology department which includes taking positioning techniques of the upper extremities, lower extremities and vertebral column. The course deals with the special radiographic position like myelography.

Field training 2	21109200	3 (280 training hours)
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This course provides the student with practical skills in radiology department which includes taking positioning techniques of the skull, Para-nasal sinuses, mastoids and mandible. It provides the student with practical skills including positioning techniques of the chest and bony thorax.

Field training 3	21109300	3 (280 training hours)
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This course provides the student with practical skills in radiology department which includes taking positioning techniques of the abdomen, pelvis and female breasts (Mammography), in addition to dental radiographic positions and new imaging modalities.

Radiographic Positioning 1	21109121	3 (3-0)
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Introduces the basic positioning techniques used in radiography of the upper extremities, shoulder girdle, lower extremities and pelvic girdle. Practical sessions includes peer positioning, film critique, anatomical identifications, pathologies and an energized section using phantoms if available.

Radiographic Positioning 2	21109222	3 (3-0)
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This course covers basic positioning of the abdomen, skull paranasal sinuses, facial bones , temporal bone mastoids and mandible with practical sessions includes peer positioning , film critique , and anatomical identifications .

Radiographic Positioning 3	21109323	3 (3-0)
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- Basic positioning techniques used in radiography of the vertebral column , cervical , dorsal , lumber sacrum and coccyx .
- asic positioning techniques used in radiography of the chest and bony thorax.

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Radiographic equipment	21109161	3 (2-3)
This course is designed to expose students to the various types of radiographic equipment available in radiology department, introduce students to the anatomy and physiology of these equipment and finally to familiarize students with the impact of technology on the progress of diagnostic imaging.		
Field Training 1	21109100	3 (280 training hours)
Provides students with practical skills in radiology department which includes applications of equipment manipulation and operation , radiological imaging procedures of upper extremities , shoulder girdle , lower extremities and elvic girdle . It also provides students with knowledge about radiation protection , record keeping and patient care .		
Field Training 2	21109200	3 (280 training hours)
Provides students with practical skills in radiology department which includes applications radiological imaging procedures of skull and paranasal sinuses .		
Field Training 3	21109300	3 (280 training hours)
Provides students with practical skills in radiology department which includes radiological imaging procedures of the vertebral column chest and bony thorax.		
Radiographic Pathology	21109255	3 (3-0)
This course is an integrated anatomy course in radiography as it concentrates on the appearances of pathological effects of anatomical radiology . It is aimed to provide students with basic anatomical positions and their normal appearances, also to differentiate between structural and abnormal body tissue. It also enable student to differentiate between structural and functional aspects of diseases, links anatomical structures with its radiological appear.		
Quality assurance and quality control	21109165	3 (2-3)
Introduces theoretical and practical application of film screen composition , care and use of sensiometry , latent image formation and automatic film processing , subtraction \ dublication of radiological image and quality assurance .		

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Radiological Cross-sectional anatomy	21109224	3(3,0)
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This course is designed to give the students an idea about The appearances of the anatomical parts of the body as they correspond to computerized tomography and MRI where body slices are acquired especially for brain, abdomen and spinal column and its contents.

Radio pharmacology	21109257	3(3,0)
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This course is designed to provide the students with basic drugs used in radiology department , either for diagnosis or for treatment in an emergency situations which might exist during radiological examinations. Osmolarity problem, drugs used for kidney , heart ,blood vessels brain and thyroid are discussed with the associated side effect.

Patient care in Radiology department	21109151	3 (2-3)
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It covers general care of patients . In radiology department, Emphasizes radiographers role in patient care, cardiac arrest, vital signs, accidents victims, besides procedures, septic aseptic techniques, contagious diseases control, blood borne pathogens, vein puncture medications, administration and contrast media reactions, including fundamentals of urinary catheterization .

Contrast Media Procedures	21109371	3(3,0)
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This course is designed to group the radiographic procedure that need contrast media and special preparation & techniques also exposing students to various types of contrast media needed in radiology department and understand the adverse reaction of all types of contrast media with special preparation for each radiographic procedure , Also enabling student to understand the required care after each procedure.



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