

# **Radiologic Technology Training Program**

# Radiologic Technology Training Program

Program Coordinator: Mansour, Zepure

## General Information

The Radiologic Technology program offers two years of theoretical and clinical training in all diagnostic imaging modalities. Theoretical training is provided in the program's facilities located in the sub-basement of the Medical Center, and clinical training is provided in the Department of Diagnostic Radiology of the Faculty of Medicine.

The program also offers post-certificate courses in specialized imaging modalities.

## Admission

The minimum requirement for admission to the first year is the Lebanese Baccalaureate, or its equivalent. Applicants must take the SAT I and the University's English Entrance Examination or TOEFL, as specified in the admissions section of this catalogue.

## Curriculum

### First Year

First Semester			Credits
XR	101	Orientation	3
XR	103	Physics	7
XR	105	Anatomy and Physiology	6
XR	107	Image Production and Processing	6
XR	109	Radiographic Technique	7
XR	111	Clinical	2
Second Semester			Credits
XR	104	Physics	7
XR	106	Anatomy and Physiology	6
XR	108	Image Production and Processing	6
XR	110	Radiographic Technique	7
XR	102	Clinical	2
XR	112	Fundamentals of Nursing and Patient Care	3
Summer Session			Credits
XR	114	Clinical	4
XR	207	Sectional Anatomy	2
			<b>Total 68</b>

**Second Year**

<b>First Semester</b>			<b>Credits</b>
XR	201	Special Procedures	6
XR	203	Radiologic Equipment	8
XR	205	Introduction to Principles of Diseases	5
XR	208	Sectional Anatomy	2
XR	209	Clinical	4

<b>Second Semester</b>			<b>Credits</b>
XR	202	Special Procedures	6
XR	204	Radiologic Equipment	8
XR	206	Introduction to Principles of Diseases	5
XR	212	Clinical	4

<b>Summer Session</b>			<b>Credits</b>
XR	214	Clinical	4
XR	210	Projects	2

**Total 54**

<b>Post-Certificate Courses (Optional)</b>			<b>Credits</b>
XR	220	Mammography	10
XR	222	Ultrasonography	12
XR	224	Computed Tomography	12
XR	226	Magnetic Resonance I	14
XR	228	Magnetic Resonance II	14

## Course Descriptions

**XR 101                      Orientation, Theory    3 cr.**

An overview of the field of radiologic technology and its role in health care delivery. Students are oriented to academic and administrative structure, and the profession as a whole. Basic principles of radiation protection are introduced. The ethical and legal responsibilities of the profession are discussed.

**XR 102                      Clinical, Practicum    2 cr.**

Clinical training in the Department of Diagnostic Radiology.

**XR 103                      Physics, Theory    7 cr.**

A course that focuses on units of measurement, the structure of the atom, electrostatics, electricity, magnetism, AC generators, DC motors, transformers, and rectification of AC.

**XR 104                      Physics, Theory    7 cr.**

An introduction to modern physics, production of x-rays, x-ray interactions, radioactivity, production of radionuclides, and health physics.

- XR 105**                    **Anatomy and Physiology, Theory**                    **6 cr.**  
A course that provides students with a knowledge of the structure and function of the human body. Cells, tissues, skeletal and muscular system, nervous system, sense organs, and the endocrine system are discussed.
- XR 106**                    **Anatomy and Physiology, Theory**                    **6 cr.**  
A course that describes the anatomy and physiology of the cardiovascular system, the blood, lymphatic and immune systems, respiratory, urinary and digestive systems, male and female reproductive systems, growth and development, and genetics and heredity.
- XR 107**                    **Image Production and Processing, Theory**                    **6 cr.**  
An introduction to computer technology. Detailed study of various image-detecting systems; description of different types of films, screens, darkroom design, computed and digital radiography. A focus on computed radiography image quality.
- XR 108**                    **Image Production and Processing, Theory**                    **6 cr.**  
A course that focuses on the chemistry of film processors, automatic film processing, daylight systems, overall radiographic image quality, sensitometric assessment of films, and digital image processing.
- XR 109**                    **Radiographic Technique, Theory**                    **7 cr.**  
An introduction to radiographic procedures, radiographic nomenclature, positioning aids, and accessory equipment. This course also provides a description of radiographic procedures pertaining to upper and lower extremity, shoulder girdle, and pelvis.
- XR 110**                    **Radiographic Technique, Theory**                    **7 cr.**  
A description of the radiographic procedures pertaining to the thorax, the vertebral column, the cranium, facial bones, and forensic radiography.
- XR 111**                    **Clinical, Practicum**                    **2 cr.**  
Clinical training in the Department of Diagnostic Radiology.
- XR 112**                    **Fundamentals of Nursing and Patient Care, Theory**                    **3 cr.**  
A course that provides knowledge and skills in selected techniques commonly performed by technologists. This course assists students in developing a greater understanding of patients as individuals, and the role of the technologist as a member of the health care team.
- XR 114**                    **Clinical, Practicum**                    **4 cr.**  
Clinical training in the Department of Diagnostic Radiology.
- XR 201**                    **Special Procedures, Theory**                    **6 cr.**  
An overview of contrast materials used in imaging. This course also provides a study of imaging procedures related to gastrointestinal, hepato-biliary, and genito-urinary.
- XR 202**                    **Special Procedures, Theory**                    **6 cr.**  
A study of imaging procedures related to the circulatory system, breast imaging techniques and interventional procedures related to different systems.

<b>XR 203</b>	<b>Radiologic Equipment, Theory</b>	<b>8 cr.</b>
A detailed study of the x-ray tubes with methods of kV, mA, and exposure time control; control of scattered radiation, mammographic and tomographic equipment, image intensification, and television systems. A description and function of automatic film changers and pressure injectors.		
<b>XR 204</b>	<b>Radiologic Equipment, Theory</b>	<b>8 cr.</b>
This course covers the topics of equipment design and function in computed tomography, nuclear medicine, ultrasonography, and magnetic resonance imaging.		
<b>XR 205</b>	<b>Introduction to Principles of Disease, Theory</b>	<b>5 cr.</b>
An introduction to pathology that focuses on nature and causes of diseases, diseases of the gastrointestinal and hepato-biliary systems, and genito-urinary and endocrine systems.		
<b>XR 206</b>	<b>Introduction to Principles of Disease, Theory</b>	<b>5 cr.</b>
A study of diseases of the nervous system, skeletal system, respiratory, cardio-vascular, and hematopoietic diseases; and miscellaneous diseases related to nutrition and the immune system.		
<b>XR 207</b>	<b>Sectional Anatomy, Theory</b>	<b>2 cr.</b>
A study of the sectional anatomy of the head, neck, and thorax.		
<b>XR 208</b>	<b>Sectional Anatomy, Theory</b>	<b>2 cr.</b>
A study of the sectional anatomy of the abdomen, pelvis, and extremities.		
<b>XR 209</b>	<b>Clinical, Practicum</b>	<b>4 cr.</b>
Clinical training in the Department of Diagnostic Radiology.		
<b>XR 210</b>	<b>Projects</b>	<b>2 cr.</b>
An application of basic research methodology in the preparation of case studies, presentations, and journal clubs.		
<b>XR 212</b>	<b>Clinical, Practicum</b>	<b>4 cr.</b>
Clinical training in the Department of Diagnostic Radiology.		
<b>XR 214</b>	<b>Clinical, Practicum</b>	<b>4 cr.</b>
Clinical training in the Department of Diagnostic Radiology and various departments/divisions using imaging modalities.		
<b>XR 220</b>	<b>Mammography, Practicum, and Projects</b>	<b>10 cr.</b>
<b>XR 222</b>	<b>Ultrasonography, Practicum, and Projects</b>	<b>12 cr.</b>
<b>XR 224</b>	<b>Computed Tomography, Practicum, and Projects</b>	<b>12 cr.</b>
<b>XR 226</b>	<b>Magnetic Resonance I, Practicum, and Projects</b>	<b>14 cr.</b>
<b>XR 228</b>	<b>Magnetic Resonance II, Practicum, and Projects</b>	<b>14 cr.</b>

