

B.Sc. in Radiologic Technology Study Plan

■ University Compulsory Courses 16 C.H Page (64)

■ University Elective Courses 9 C.H Pages (64 & 65)

■ Faculty Compulsory Courses 27 C.H

| Line No. | Code | Course | |
|----------|----------|--------------------------------------------------------------------------------|---|
| 102181 | MED218A | GROSS ANATOMY & HISTOLOGY | 3 |
| 102182 | MED218B | GROSS ANATOMY & HISTOLOGY (LAB) | 0 |
| 102304 | MED230A | HUMAN PHYSIOLOGY | 3 |
| 102305 | MED230B | HUMAN PHYSIOLOGY (LAB) | 3 |
| 103021 | MED302A | MEDICAL ETHICS | 1 |
| 183111 | PH311A | BIOSTATISTICS | 2 |
| 911031 | CHEM103A | GENERAL CHEMISTRY | 3 |
| 911072 | CHEM107B | GENERAL CHEMISTRY LAB | 1 |
| 921031 | PHY103A | GENERAL PHYSICS | 3 |
| 931030 | BIO103 | GENERAL BIOLOGY | 3 |
| 931070 | BIO107 | GENERAL BIOLOGY (PRACTICAL) | 1 |
| 1114580 | P.T458 | MANAGEMENTS IN ALLIED MEDICAL SCIENCES | 3 |
| 1731160 | CS116 | SELECTED PROGRAMMING LANGUAGES (FOR NON COMPUTER SCIENCE INFORMATION STUDENTS) | 3 |

■ Department Compulsory Courses 85 C.H

| Line No. | Code | Course | |
|----------|---------|----------------------------------------------------------|---|
| 102121 | MED212A | PATHOLOGY | 3 |
| 102222 | MED222B | BIOCHEMISTRY | 3 |
| 102234 | MED223D | BIOCHEMISTRY (LAB) | 1 |
| 141000 | RA100 | INTRODUCTION TO RADIOLOGIC TECHNOLOGY | 1 |
| 142000 | RA200 | INTRODUCTION TO RADIATION BIOLOGY & RADIATION PROTECTION | 3 |
| 142100 | RA210 | PHYSICS OF RADIOLOGY | 3 |
| 142140 | RA214 | IMAGE PRODUCTION & RECORDING TECHNIQUES | 3 |
| 142300 | RA230 | PERIPHERAL OSSEOUS SYSTEM RADIOGRAPHY | 3 |
| 142301 | RA230 | PERIPHERAL OSSEOUS SYSTEM RADIOGRAPHY (LAB) | 0 |
| 143170 | RA317 | RADIOGRAPHIC ADVANCED TECHNIQUES | 3 |
| 143250 | RA325 | PERIPHERAL OSSEOUS SYSTEM RADIOGRAPHY PRACTICE | 3 |
| 143310 | RA331 | CENTRAL OSSEOUS SYSTEM RADIOGRAPHY | 3 |
| 143311 | RA331 | CENTRAL OSSEOUS SYSTEM RADIOGRAPHY (LAB) | 0 |
| 143320 | RA332 | CENTRAL OSSEOUS SYSTEM RADIOGRAPHY PRACTICE | 3 |
| 143440 | RA344 | RADIOGRAPHIC EQUIPMENT | 3 |
| 143530 | RA353 | RADIOGRAPHIC SURFACE ANATOMY | 3 |
| 143531 | RA353 | RADIOGRAPHIC SURFACE ANATOMY (LAB) | 0 |
| 143580 | RA358 | RADIOGRAPHIC CROSS SECTIONAL ANATOMY | 3 |

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|--------|----------|----------------------------------------------|---|
| 143581 | RA358 | RADIOGRAPHIC CROSS SECTIONAL ANATOMY (LAB) | 0 |
| 143610 | RA361 | PATIENT CARE IN RADIOLOGY DEPARTMENT | 3 |
| 143680 | RA368 | RADIOLOGIC PATHOLOGY | 3 |
| 143700 | RA370 | SPECIAL RADIOGRAPHIC PROCEDURES | 3 |
| 143701 | RA370 | SPECIAL RADIOGRAPHIC PROCEDURES (LAB) | 0 |
| 143800 | RA380 | ULTRA SOUND | 3 |
| 144230 | RA423 | SPECIAL AND FLUOROSCOPIC TECHNIQUES PRACTICE | 3 |
| 144280 | RA428 | GENERAL AND ADVANCED RADIOGRAPHY PRACTICE | 6 |
| 144340 | RA434 | MAMMOGRAPHY | 1 |
| 144430 | RA443 | IMAGE QUALITY CONTROL | 3 |
| 144720 | RA472 | ORAL & DENTAL RADIOGRAPHY | 3 |
| 144721 | RA472 | ORAL & DENTAL RADIOGRAPHY (LAB) | 0 |
| 144730 | RA473 | VASCULAR RADIOGRAPHY | 3 |
| 144800 | RA480 | MAGNETIC RESONANCE IMAGING | 3 |
| 144830 | RA483 | NUSLEAR MEDICINE | 3 |
| 144850 | RA485 | COMPUTED TOMOGRAPHY | 3 |
| 144930 | RA493 | SEMINAR | 1 |
| 901021 | MATH102A | CALCULUS(FOR BIO.SCI.STUDENTS) | 3 |

TOTAL

137 C.H

*** For prerequisite & equivalent courses see the Courses' Description.**

B.Sc. in Radiologic Technology

Courses' Description

M 226 Neuroscience I 3 C.H

The course covers basic neuroanatomy, neurophysiology, and neurohistology, focusing on processes involved in sensory and motor functions of the CNS. This knowledge will provide the foundations to understand the abnormal functional disorders and disabilities that may result from disease or trauma to the central nervous system. *(Prerequisite: M 230 a, and M 230 b)*

M 302 Medical Ethics 1 C.H

This course provides the students with the fundamental comprehension of medical ethics to develop a conceptualized framework for moral judgment, and decision making to serve as a basis for health care practice. *(Prerequisite: none)*

PT 300 Computers in medical Sciences 2C.H

The course is designed to develop an open framework of explaining and using of databases in health care organizations, especially in hospitals. The students will be taught the applications of various computer skills and tools to serve administrative tasks and to achieve management goals. Emphasis will be on using Microsoft Office tools and internet applications. *(Prerequisite: none)*

PT 342 Introduction to Clinical Medicine 3 C.H

The aim of this course is to give the students general knowledge about common diseases. This includes the major symptoms, signs, laboratory investigations, diseases enteritis and their basic management. *(Prerequisite: M 212)*

PT 458 Management in Allied Health Sciences 3 C.H

A course designed to provide on-site rotations with AHS administrative directors, instruction in budget preparation, personnel considerations, equipment purchasing and related maintenance, departmental design, and other duties and responsibilities of all types of AHS administrators. *(Prerequisite: none)*

RA 211 Radiologic Physics 3 C.H

This course is a comprehensive study of the physical principles that are related to radiation including structure of atoms, electricity, magnetism, motors, and transformers, electromagnetism, and semiconductors, interactions x-ray with matter, x-ray production, and x-ray circuit. *(Prerequisite: Phy 103)*

RA 222 Radiography of the Peripheral Osseous System 2 C.H

This course is designed to cover general radiographic positioning and technique of the upper and lower extremities, chest, abdomen, pelvis and thoracic regions. The structure shown, signs of excellence, and radiographic considerations of each procedure are demonstrated. *(Prerequisite M 218)*

RA 223 Principles of Diagnostic Imaging I 3 C.H

This course is a comprehensive study of the basic principles of Radiologic technology phenomena. It includes a review of radiation production, electromagnetic radiation properties, x-ray film and intensifying screen, film processing and chemistry, radiographic quality (detail, definition, and sharpness) and formulating x-ray techniques and technique chart. *(Prerequisite RA 211)*

RA 232 Introduction to Radiation Biology & Safety 3 C.H

This course is a comprehensive study of radiobiology and radiation protection measures. It includes radio sensitivity, short and long term radiation effects, responsive curves, lethal doses, interaction x-ray with matter, detection devices, monitoring devices, and fundamental radiation protection measures. *(Prerequisite: RA 211)*

RA 310 Radiographic & Topographic Anatomy 3 C.H

This course is an introduction to identification of basic anatomy of medical images produced by ultrasound, computerized tomography, and magnetic resonance. Application will include imaging of the sagittal, coronal, and transverse body planes. Pathological appearances of certain diseases are also demonstrated. *(Prerequisite: M 218)*

RA 311 Radiography of the Central Osseous System 2 C.H

This course is a continuation of the general radiographic Procedures I_ to include radiography of cranial and facial bones and vertebral column. *(Prerequisite: RA 310)*

RA 312 Clinical Radiography Practice I 2 C.H

This course is designed to introduce the student to the x-ray department, medical imaging systems, medical terms, patient records, policies and medical ethics. *(Prerequisite RA 222)*

RA 313 Clinical Radiography Practice II 3 C.H

This course is practical and clinical applications of the different general radiographic procedures, such as chest, upper extremities, lower extremities, skull, vertebral column, abdomen, and pelvis x-ray images. *(Prerequisite: RA 311, RA 312)*

RA 314 Clinical Radiography Practice III 3 C.H

The course is practical and clinical applications of different general and specialized radiographic procedures taught in the previous radiographic positioning and special procedure courses such as fluoroscopic procedures. *(Prerequisite: RA 313)*

RA 315 Clinical Radiography Practice IV 3 C.H

The course is practical and clinical applications of different general and specialized radiographic procedures taught in the previous radiographic positioning and special procedure courses, such as CT scan, MRI, Nuclear medicine and ultra sound. *(Prerequisite: RA 314)*

RA 321 Sectional Anatomy 3 C.H

This course covers the cross section appearances of various body parts as they projected by different modalities such as CT scan and MRI. *(Prerequisite: M 218)*

RA 323 Principles of Diagnostic Imaging II 3 C.H

It includes the principles of tomography, fluoroscopy, intensifying screen, scatter radiation elimination devices, magnification, and film critiques. *(Prerequisite RA 223)*

RA 351 Radiation and Diseases 3 C.H

The course is designed to expose the student to the basic pathogenic processes that cause certain diseases of various body systems that are most commonly demonstrated by radiographic imaging procedures. The effects of the pathological conditions upon exposure and resulting image quality and positioning protocol are also provided. *(Prerequisite: M212)*

RA 381 Radiographic Contrast Media Techniques 2 C.H

This course is designed to expose the student to special radiographic technique by contrast media administration. It includes contrast media radiography of upper gastrointestinal tract, urinary, nervous, respiratory, reproductive systems and surgical radiography. Review of contrast media's characteristics, contraindication and side effects, patient preparation, equipment preparation, radiographic consideration and post procedure care are also included. *(Prerequisite: RA 311)*

RA 382 Ultrasound 3 C.H

This course provides the student with a thorough knowledge of basic acoustic physics and its application in the field of diagnostic medical sonography. It includes an examination of the different types of equipment available for medical ultrasonic procedures, quality control, and safety features. Students will be given the opportunity to apply sonographic theory as presented in lecture. *(Prerequisite: RA 310)*

RA 411 Radiographic Pharmacology 3 C.H

This course is designed to introduce the student to the basic pharmacological properties of various types of radiographic contrast media and other medications used in radiology department. Side effects, route of administration, patient care prior and post administration of these medications are covered. *(Prerequisite: M 230A / M 230B)*

RA 412 Radiographic Equipment 2 C.H

This course is designed to cover the physical components and functions of different types of x-rays units used in radiology department including x-ray film processor, x-ray tube, scattered radiation devices, fluoro-intensification equipment, mammography, tomography. Trouble shooting processes are also included. *(Prerequisite: RA 211)*

RA 421 Computerized Tomography 3 C.H

This course provides descriptive information of the basic principles of physics and instrumentation relative to computerized tomography. Historical development, mathematical and physical concepts of operation, component and systems integration, and peripheral apparatus will be provided. Computerized Tomography procedures will also be explained. *(Prerequisite: RA 321)*

RA 441 Vascular Radiography 2 C.H

This course is a continuation of the radiographic Contrast Media Techniques_ course to include special procedure of the circulatory and the lymphatic systems. Procedures such as: cardiac catheterization, veinography and angiography of upper and lower extremities will be demonstrated. *(Prerequisite: RA 381)*

RA 442 Mammography 1 C.H

Advanced practice and in-depth study of breast imaging techniques and mammographic image interpretation. *(Prerequisite: RA 310)*

RA 451 Magnetic Resonance Imaging 3 C.H

This course provides an introduction to the physical principles of MRI. It includes a review of electricity and magnetism, image production, image weighting, pulse sequences, as well as safety procedures and bio-effects. It also includes clinical applications of patient positioning, coil selection and patient monitoring and assessment. *(Prerequisite: RA 321)*

RA 452 Introduction to Nuclear Medicine Technology 2 C.H

This course provides an introduction to the physical principles of radioactivity, radiometric analysis, methods of detection, and uses of radionuclide techniques in biological problems. Special emphasis is given to modern imaging systems and procedures used currently in clinical nuclear medicine. Clinical applications of patient positioning, dose measurements and patient safety will be covered. *(Prerequisite: RA 311)*

RA 471 Image Quality Control 3 C.H

This course is designed to cover all the technical and administrative processes to ensure that radiographic equipment performs according to the manufacturer standards. It includes quality control of film processors, radiographic, fluoroscopic, CT scan, and repeat film analysis. *(Prerequisite: RA 412)*

PT 491 Seminar 1 C.H

This course is designed to present the basics of research methodology including experimental design, human research, and critical analysis of medical literature. The student will develop a research project with the consultation of a faculty member. The student, with guidance from a faculty member, will utilize readings, texts, journal articles, practicum experience, or attendance at seminars or lectures, to identify and explore selected subject matter. *(Prerequisite: none)*