

COURSES OFFERED BY THE DEPARTMENT OF RADIOGRAPHY/RADIOTHERAPY

SECOND YEAR FIRST SEMESTER

RA2101 Principles of Nuclear Imaging (Credits-02)

Basic principles of nuclear imaging, Radiopharmaceuticals in nuclear imaging, Production of radiopharmaceuticals, Instrumentation in nuclear medicine imaging, Techniques of Nuclear Medicine Imaging, Quality assurance in nuclear imaging, Quality control of Nuclear Medicine Equipment

Mid semester -25% -T

End semesters -75% -T

RA 2102 Fluoroscopy & C arm: Principles & Equipment (Credits-02)

Basic Principles of fluoroscopy image formation, Fluoroscopic X-ray tube setup and cooling chart, Image intensifier, Camera system and Viewing of fluoroscopy image, Fluoroscopy Image recording, Fluoroscopy table assemblies and accessories, Patient preparation, Duties and responsibilities of radiographer, Image quality and quality assurance, Radiation protection, Introduction to C arm, Applications of C arm and Fluoroscopy.

Assessments/ Labs -20%

End semesters -60%- T, 20% - P

RA 2103 Computed Tomography- I (Credits-02)

Basic principles of CT, Evolution of CT, Generations of CT, Data processing and image formation in digital imaging, Hardware.

Mid semester -30%

End semesters -70% -T

RA 2104 Basics of Maintenance of Equipment (Credits-01)

Health and safety in maintenance work, Management of medical equipment, Preventive and corrective maintenance, Basic electricity and electronics, Instrumentation.

Mid semester -20%

End semesters -80% -T

RA 2105 Ethics in Medical Radiation Technology & Forensic Radiography (Credits-01)

Ethical Issues: Values, Ethical schools of thought, Principles of Beneficence and Non maleficence, Patient Autonomy and Informed Consent, Truthfulness and Confidentiality, Student Rights, Diversity and Caring, and Challenges, Forensic Radiography.

Assessments -20%

End semesters -80% - T

RD 2101 Mammography (Credits-01)

Anatomy and Physiology of the breast, Physics for mammography, Basic principles and terminology, Equipment and Accessories, Image recording system, Basic projections, positioning of the patient and exposure factors, Supplementary projections, Breast biopsy and localization, Radiation protection, Other methods of breast imaging, Quality Assurance, Epidemiology of Breast Cancer.

Mid semester -20% -P End semesters -80% -T

RD 2102 Special Techniques of Plain Radiography (Credits-02)

Special projections for Upper limb, Lower limb, Spine, Chest, Skull, PNS and Mandible.

Mid semester -20% -T End semesters -40%- T, 40% - P

RD 2103 Care of Patient II - Radiography (Credits-02)

Surgical asepsis and the role of Radiographer, Medical emergencies in diagnostic imaging, Trauma and mobile radiography, Care of patients during special contrast study examinations, CT, MRI, Nuclear Imaging, Pharmacology for radiographers, Psychology of illness, Vital Signs.

Mid semester -20% -T End semesters -80%- T

RD 2104 Radiation Protection – II for Diagnostic Radiographers (Credits-02)

Establishment of an occupational public and medical exposure control programme, Safe transport of radiation sources, Safe management of radioactive wastes, Factors affecting doses (in X-rays, CT, Fluoroscopy & Mammography), Methods of dose reduction (guidelines & recommendations with emphasis on patient protection), Patient dose estimation for exposure to X-ray, Protective Shielding and designing of diagnostic radiology & Nuclear Medicine facilities, Safety Aspects of MRI, Radiation protection through Quality Assurance of machines (QC testing of X-ray, dark room procedures), Radiation survey instruments, Instruments used for patient dose estimation.

Mid semester -20% - T End semesters -80%- T

SECOND YEAR SECOND SEMESTER

RA 2201 Computed Tomography-II (Credits-02)

Technique of CT, Brain, chest, abdomen and pelvis, spine, extremities, Respiratory system (HRCT) Lungs and mediastinum, Gastro Intestinal System (Larynx, Pharynx, Oesophagus), CT (enteroclysis, colonography), Urinary system (CTU stone and contrast CTU), Reproductive system, Cardiovascular system (Coronary CT, CTA), Endocrine System (Pituitary gland, adrenal glands & thyroid glands), Central Nervous System (orbits, cranial nerves, PNS), Vertebral column (3D reconstruction), Lymphatic System Paediatric CT.

Assignments-20% End semesters -80%- T

RD 2201 Techniques of Fluoroscopy and Contrast Studies (Credits-02)

Introduction to contrast media, Techniques used in investigating Gastrointestinal system Urinary system, Reproductive system, Vascular system and Hepato biliary system.

Assignments-20% End semesters -80%- T

RD 2202 Practice of Basic Techniques of Plain Radiography (Credits-04)

Basic Techniques of Upper limb, Lower limb, Vertebral column, Chest, Skull and Abdomen

Assignments-40% End semesters -60%- P

RD 2203 Applied Anatomy in Plain Radiography, Mammography & Contrast Studies (Credits-01)

Radiographic anatomy of Basic and special techniques of skull, spine, abdomen chest, upper limb and lower limb, Mammography projections, Contrast studies of, GIT, urinary, hepatobiliary, cardiovascular, respiratory and reproductive systems.

Mid semester -30% End semesters -70%- P

RD 2204 Practice of Imaging Principles (Credits-02)

Designing of a dark room, Dark room equipment/ Radiographic Processing Practice (Cycle time, capacity, feed section, Developer section, Fixer section Washing section / drying section, Replenishments, Auto processors for special film Care and maintenance of auto processor), Radiographic Image artifacts, Film Storage (Storage areas, Storage conditions, Stock control, Ordering).

Mid semester -25% End semesters -75%- P

RD 2205 Quality Assurance in Diagnostic Radiography (Credits-02)

Quality System, Quality Assurance and Quality Control Radiographic, Quality control reproducibility, Light beam diaphragm, Grid alignment, Image Recording, Processor Quality Control, Dark room safelight and light leakage test, Screen film contact testing, Screen cleaning, Quality control for Conventional Tomography, Quality control for Fluoroscopy System.

Assignments-25% End semesters -75%- T

RD 2207 Digital Radiography (Credits-01)

Digital Radiography and its components, Digital Image, Viewing the digital image, Digital display quality control and artifacts.

Mid semester -25% End semesters -75%- T

RD 2206 Magnetic Resonance Imaging-1 (Credits-02)

Basic Physics, Basic Principles of MRI, MR Instruments/Hardware, Safety Aspects of MRI, MR pulse sequences.

Mid semester -25% End semesters -75%- T