

## **COURSES OFFERED BY THE DEPARTMENT OF RADIOGRAPHY/RADIOTHERAPY**

### **FOURTH YEAR FIRST SEMESTER**

#### **RD 4101                      Practice of Quality Assurance in Radiography                      (Credits-02)**

Acceptance Testing, Routine performance, Error correction, X-ray tube Quality control (Filament, Collimation, Focal spot size, kVp correction, Light beam diaphragm alignment, Grid, alignment, Exposure timer accuracy, Exposure linearity & reproducibility), Image Recording system: Films and Cassettes (Screen contact testing, Screen cleaning etc), Processor Quality Control (Processor Sensitometer, Processor Cleaning, Processor Maintenance, Processor Quality control test, Dark room safelight and light leakage test), Quality control for Fluoroscopy (Exposure rate, Spot-film Exposure, Automatic Exposure System)

Assessment-20%      Assignment-20%      End semesters -60%- P

#### **RD4102                      Practice of Computed Tomography- II                      (Credits-02)**

CT examinations of :Head and brain, orbits, PNS, Temporomandibular joint neck, Chest, (Routine and HRCT), Abdomen (Plain & triple phase study), Cardiovascular system, Urinary system (CTU), Vertebral column (3D reconstruction), Extremities (shoulder joint, elbow joint, wrist joint, hip joint, knee joint, ankle), Paediatric CT.

Assessment-20%      End semesters -80%- P

#### **RD4103                      Applied Imaging in CT & MRI                      (Credits-02)**

CT (brain, pituitary, orbits, ENT, temporal bone), CT (spine), CT (chest), CT (abdomen and pelvis, including CT Urography, CT liver dual phase and CT enteroclysis), CT (musculo skeletal system), CT (cardiovascular system and CT Angiography), MRI (brain, orbits), MRI (spine), MRI (musculo skeletal system), MRI (thorax), MRI (abdomen and pelvis), Cardiac MRI and MR Angiography, MR Cholangio Pancreatography, MRI breast.

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

#### **RD4104                      Quality Assurance in CT & MRI                      (Credits-02)**

Quality Assurance in CT: (Noise and uniformity, Linearity, Spatial resolution, Contrast resolution, Slice thickness, Couch incrimination, Laser localizer, Patient dose, Processor quality control-processor cleaning, maintenance and monitoring), Quality assurance of MRI: (Magnetic field stability, Signal-to-noise ratio, Artifact inspection, Phase stability, Magnetic field homogeneity, Signal-to-noise ratio, orthogonal plane, Image uniformity, Processor sensitometry).

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

**RD4105 Principles of Radiation Dosimetry & Application in Radiography (Credits-02)**

Principles of radiation dosimetry (Interactions and energy deposition by ionizing radiation in matter; concepts, Quantities and units in radiological physics, Principles and methods of radiation dosimetry), Applications in radiography (calibration in diagnostic equipments, measurement of scattered radiation, measurement of dose to patient, dose to radiation workers, measurements in case of accident).

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

**FOURTH YEAR SECOND SEMESTER**

**RD 4201 C-Arm and Theatre Radiography (for male student) (Credits-02)**

Revision on principle of C-Arm and fluoroscopy unit, Preparation for theatre radiography, Procedures of Hepato biliary system (per operative cholangiogram), Urinary system (Nephrostomy, Retrograde pyelography, Nephrolithotomy, Lithotomy, lithotripsy), Orthopaedic surgeries, Cardiovascular surgeries.

Assignment-25% End semesters -50%- T, 25%- P

**RD 4202 Practice of Mammography (females only) (Credits-02)**

Demonstration of mammography unit, Image recording system, other accessories and processor, Basic mammographic projections, other specialised mammographic projections, Localization biopsies, processing the image, Evaluation criteria for various mammographic projections, Identify the processing and handling artifacts.

Assesment-20% End semesters -80%- P

**RD 4203 In-Service Training-II Radiography (Credits-05)**

Radionuclide imaging, CT, MRI, Mammography, Theatre radiography.

Assesment-50% End semesters -50%- P

**RD 4204 Practice of Magnetic Resonance Imaging - II (Credits-02)**

MRI scanning for: Skull, Spine, Thorax, Abdomen and pelvis, Paediatric MRI, MR Angiography and extremities.

Assesment-30% End semesters -70%- P

**RD 4205 Practice of Nuclear Imaging (Credits-02)**

Introduction to Clinical Nuclear Medicine imaging, Computers in Nuclear Medicine, Data acquisition, processing, and storage of data. Applied imaging in nuclear medicine – IMAGING OF: Musculo-skeletal system, Genito urinary tract, Respiratory tract, Cardio-vascular system, Gastrointestinal tract, Endocrine system, Lympho reticular system, Central nervous system, Special imaging techniques: Tumour imaging, Infection and inflammation imaging, PET Imaging.

Assesment-30% End semesters -70%- P

**RA 4201 Research Project and Presentation (Credits-06)**

Problem identification and project formulation, Search and retrieve information required such as conducting literature surveys, Identification and optimal utilization of available resources, Project execution, socio-economic, ethical and safety evaluation when applicable, Data analysis, Scientific report writing and presentation.

<b>Assessment</b>	<b>Percentage Mark/ Percentage Mark Range</b>
Project proposal	15%
Project Proposal Presentation	15%
Viva	20%
Dissertation evaluation	30%
Final presentation	20%