COURSES OFFERED BY THE DEPARTMENT OF RADIOGRAPHY/RADIOTHERAPY

FIRST YEAR FIRST SEMESTER

AH 1107 Basic Biochemistry (Credits-02)

Structure and function of cell organelles, structure and function of carbohydrates, lipids, amino acids, proteins and nucleic acids, biochemical tests for identification of carbohydrates, lipids & proteins, pH and buffers, enzyme properties and kinetics, chemistry & function of haemoglobin, chemistry and functions of vitamins, plasma protein and their functions, metabolism of carbohydrates, lipids, proteins and amino acids, integration and regulation of metabolic pathways.

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

RA 1101 General Physics (Credits-02)

Fundamentals of Physics, Electricity and Magnetic phenomena, Solid state Physics and Nuclear Physics.

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

RA 1102 Electronics & Instrumentation (Credits-01)

Introduction to Electricity and Electronics, Instrumentation, Concept of transducers, Operation of different transducers, Digital Electronics, Process automation concepts, Equipment maintenance and calibration.

Assignments – 25% End semester: 75% -T

RA 1103 Medical Imaging Equipment –I (Credits-02)

Assembly of the X-ray unit, Main electrics and circuits, Methods of scatter control.

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

RA 1104 Radiobiology (Credits-01)

Radiation interactions at cellular and tissue levels, Biological basis of radiation cell killing, Biological, Physical and Chemical factors affecting cellular radiosensitivity, Radiation effects on normal tissues, Radiation carcinogenesis, Genetic effects, Radiation effects on developing embryo.

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

FIRST YEAR SECOND SEMESTER

RA 1201 Radiation Physics (Credits-02)

Fundamentals of X-ray, X-ray production; Interaction of X-rays with matter: Principles of fluoroscopy, X-ray films, Principles of mammography and digital mammography.

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

RA 1202 Anatomy for Radiographers (Credits-02)

Anatomy of appendicular skeleton, Axial skeleton, Cross sectional anatomy of chest, abdomen and pelvis, brain, Surface anatomy of chest and abdomen, Identification of muscles and tendons in appendicular skeleton with cross sectional anatomy, Anatomy of vascular and lymphatic systems.

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

RA 1203 Medical Imaging Equipment – II (Credits-01)

Introduction to the module, Equipment ,Construction and operation of isocentric skull equipment, Tomography, OPG, Intraoral equipment and cephalostat , Mobile equipment, Digital equipment.

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

RA 1204 Basic Techniques of Plain Radiography (Credits-03)

Physical principles of radiography, Terminology, Technical evaluation and anatomy of the images of Upper limb, Lower limb, Spine, Pelvis AP, Single Hip AP, Skull, Chest and Abdomen.

Mid semester -30% -T End semesters -40% -T, 30%-P

RA 1205 Imaging Principles (Credits-02)

Film emulsion, Intensifying screens, Light spectrum, Matching spectral emission to spectral sensitivity, Preparing chemicals, Converting the latent image to a permanent image, Sensitometric curve, Applications of sensitometric measurements, Dark room and dark room equipment, Manual and automatic processing, Maintenance of an automatic processor, Radiographic image artefacts, Film storage conditions.

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

RA 1206 Radiation Protection-1 (Credits-01)

Quantities and units used in Radiation Protection, Background radiation, Biological effects of ionizing radiation, Introduction to external and internal hazards of radiation and methods of evaluation, Elements of a Radiation Protection Programme, National and International Regulations and Standards, Basic principles of Radiation Protection, Personal dosimetry and work place monitoring; visiting a radiation facility.

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

RA 1207 Care of Patient -1 (Credits-01)

Routine patient care in an X-ray Department/Radiotherapy unit, Effective communication and team work/handling adult patients, First Aid, Infection and cross infection, Introduction to care of patients with tubes and catheters (Urinary catheters ,Colostomy, NG tubes, IV drips, drainage bags), Care of paediatric and elderly patients, CPR.

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