**BMR 3111 – RADIOGRAPHIC PHOTOGRAPHY & IMAGING EQUIPMENT**

Course description**:**

This course covers the techniques of film processing and the darkroom, quality assurance as well as the various imaging equipment used in medical imaging.

Purpose**:**

To enable the student learn and appreciate the various film processing methods, darkroom procedures as well as the various equipment used in medical imaging.

Course Objectives**:** By the end of the 5 weeks, the student should be able to:

1. Describe the techniques of film processing

2. Discuss the dark room process

3. Identify film faults

4. Discuss quality assurance in film processing

5. Describe the principle of operation of the various imaging equipment

6. Carry out basic quality control tests on the various imaging equipment

Expected outcomes/competencies

1. A student with skills of identifying film faults/artifacts

2. Demonstration of ability to carry out basic QC tests on equipment

3. Demonstration of knowledge about film processing and imaging equipment

Content outline**:**

• Photographic materials and radiographic exposures.

• Dark room.

• Manual film processing.

• Automatic film processing.

• Daylight processing.

• Subtraction techniques, film sorting and viewing room, film faults.

• Quality assurance.

• The x-ray tube and housing.

• The x-ray generators.

• Control and stabilizing equipment.

• Image intensifications and TV monitoring.

• Accessory equipment.

• CT equipment; MRI equipment.

• Nuclear medicine equipment; Gamma camera, SPECT and PET: Ultra sound equipment: Brain echo machines: conventional B and M mode equipment, Doppler ultrasound equipment.

Methods Delivery:

Over-view lectures, Small group tutorials with a Tutor, Self-directed study, Wrap-up seminars, Question and answer sessions, Skills training, Assignments , practicals and Videos for watching.

Assessment strategies**:**

There shall be an assessment blue-print for each type of assessment tool chosen.

Formative and summative assessment shall be conducted through MCQs. Modified essays, short notes,Objective Structure Clinical Examination (OSCE), Objective Structure Practical Examination (OSPE) and logbook

Logbook/Portfolio**:**

A student shall be responsible for keeping a log book of her/his practical experiences for presentation to the Course coordinator before a Certificate of due Performance is issued. The number of cases for the logbook are indicated for each case. The Portfolio shall be used to show evidence of learning by the student as well as reflection which is not captured by the logbook.

There shall be an assessment and feedback session for every student and tutor at the end of every

tutorial session. This will include:

a) Continuous assessment during all the learning sessions. This permits immediate feedback. In addition to Logbooks. This will contribute 40% of the mark

b) An end of the block examination consist of:

• Individualized process assessment.

• Modified essay questions.

• Oral examination (OSCE & OSPE)

• MCQs.

Resources & Infrastructure available:

Library (both in the Radiology department and Sir Albert Cook library), Tutorial rooms, Computer services and internet, Content experts.

Course duration: 5 Weeks

Requirements**:** 75 CH, 5CU