

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY RAD 255 – RADIOGRAPHIC EQUIPMENT (3 CR.)

Course Description

Studies principles and operation of general and specialized X-ray equipment. Lecture 3 hours per week.

General Course Purpose

The purpose of this course is to familiarize the student with the physical construction and operation of radiographic and fluoroscopic x-ray units.

Course Prerequisites/Corequisites

Prerequisite: Admission into the Radiography Program, RAD 141, RAD142 or equivalent.

Course Objectives

Upon completing the course, the student will be able to:

1. Describe the electrical system associated with a standard radiographic unit.
2. Describe the construction and purpose of the high-tension generator(transformer).
3. Describe the construction and purpose of the rectification circuit.
4. Describe the components and purpose of the exposure timing system.
5. Diagram and identify the components of a standard rotating anode x-ray tube.
6. Describe the components and purpose of mobile x-ray units, to include
 - a. Portable radiographic unit
 - b. C-arm fluoroscopic unit
7. Describe the components and purpose of an image intensification tube.
8. Describe the theory and principles of body plane radiography (tomography).
9. Identify the principal components of a mammography unit.
10. Describe the theory and components of a digital radiographic system.

Major Topics to be Included

- A. The Electrical System and Mains Supply
- B. Components and Controls in X-ray Circuits
- C. High Tension Generators
- D. Fuses, Switches, and Interlocks
- E. Exposure Switches and Timers
- F. X-ray Tubes.
- G. Portable and Mobile X-ray Units
- H. Fluoroscopy and Image Intensifiers
- I. Tomographic Equipment
- J. Specialized Radiographic Equipment
- K. Digital Imaging Systems

Extra Topics to be Included

General care and testing of radiographic equipment.