

Minnesota State College Southeast

RADT 2620: Equipment Operation and Maintenance

A. COURSE DESCRIPTION

Credits: 2

Lecture Hours/Week: 2

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites:

This course requires either of these prerequisite categories

1. Both of these

RADT 2635 - Radiographic Pathology

RADT 2639 - Clinical Practicum 2

Or

2. Both of these

RADT 2635 - Radiographic Pathology

RADT 2642 - Clinical Practicum 2

Corequisites: None

MnTC Goals: None

This course introduces radiography students to the principles and application of x-ray technology. Students analyze x-ray machine circuitry, automatic exposure control and factors related to image formation. Specific topics to be covered include: electricity, electromagnetism, operation and maintenance of radiographic equipment that includes fluoroscopy, mobile, conventional and digital imaging systems. (Prerequisites: RADT2605, RADT2617, RADT2630, RADT2642) (Prerequisite or concurrent: RADT 2650, RADT 2653) (2 credits: 2 lecture/0 lab)

B. COURSE EFFECTIVE DATES: 06/16/2009 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Summarize the purpose and function of x-ray machine circuitry and equipment
2. Discuss radiographic equipment in terms of purpose, components, types, and applications

D. LEARNING OUTCOMES (General)

1. Explore electricity, magnetism and electromagnetism as they relate to the operation of the x-ray machine
2. Define potential difference, current and resistance
3. Summarize the purpose and function of x-ray machine circuitry
4. Identify function of solid state rectification
5. Compare generators in terms of radiation production and efficiency
6. Analyze the purpose, components and uses of diagnostic x-ray tubes
7. Explain protocols used to extend x-ray tube life
8. Summarize the purpose and function of traditional analog radiographic equipment as well as digital equipment
9. Analyze the purpose and function of automatic exposure control (AEC)
10. Summarize the purpose and function of mobile units
11. Identify common radiographic manifestations of equipment malfunctions
12. Discuss the importance of equipment maintenance
13. Indicate the purpose, construction and application of video camera tubes, TV monitors, and video recorders
14. Explain the purpose, principles and application of linear tomography
15. Summarize the purpose and performance of repeat rate

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted