Faculty are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Collegewide Curriculum Committee.

DEPT: Radiology                      COURSE NO: RDT1130

COURSE TITLE: Radiological Exposures I

CATALOG DESCRIPTION: This course provides the student with the knowledge of factors that govern and influence image quality. The course emphasis is on image quality through the discussion of factors that affect density, contrast, recorded detail, and distortion. Complex mathematical problems reflect the effect of change in exposure factors and radiographic devices on image quality. Topics include basic physics concepts, radiographic equipment, properties of x-rays, exposure factors, radiographic devices and the principles of automatic processing. The application of radiographic calculations is addressed during discussion of the course material.

AUDIENCE: Radiologic Technology Students

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)

Area : by meeting the following competencies:
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PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: Intro to Radiography and Patient Care & MATH1111

LENGTH OF COURSE: Five hours per week for 16 weeks.

THIS COURSE IS USUALLY OFFERED:
Every other year [ ] fall [ ] spring [x] summer [ ] undetermined [ ]

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT: The student will identify the factors necessary for quality image production. The student will also demonstrate manipulation of each factor and describe the result this manipulation has on image quality.

2) THINKING SKILLS: The student will be able to recognize a need for change in technical factors to produce a quality image.

3) COMMUNICATIONS SKILLS: The student will select and use the appropriate method of communication to interact with peers regarding image production.
4) HUMAN DIVERSITY: The student will explore cultural influences as it relates to interactions with various members of the health care team.

TOPICS TO BE COVERED:
See course goals and outcomes.

LIST OF EXPECTED COURSE OUTCOMES:
1. determine practical considerations in setting standards for acceptable image quality
2. assess radiographic density on radiographic images
3. analyze the relationships of factors that control and affect image density
4. assess radiographic contrast on radiographic images
5. analyze the relationships of factors that control and affect image contrast
6. critique recorded detail on various radiographic images
7. analyze the relationships of factors that control and affect recorded detail
8. assess degrees of distortion on radiographic images
9. analyze the relationships of factors that control and affect distortion
10. summarize the relationships of factors affecting exposure latitude
11. recognize the types, functions and application of beam limiting devices
12. recognize the composition and types of beam filtration devices as they relate to image quality and patient exposure
13. identify the factors that affect the production of scattered and secondary radiation
14. recognize the types, functions and limitations of grids
15. formulate radiographic techniques to achieve optimal radiographic images
16. recognize the impact relationships of factors have on radiographic technique selection
17. identify a variety of image receptors
18. describe the benefits, limitations and characteristics of a variety of image receptors
19. identify a variety of image receptor holders and intensifying screens
20. describe the construction, function and classification of intensifying screens

LEARNING/TEACHING TECHNIQUES used in the course are:
X Collaborative Learning  X Problem Solving
X Student Presentations    Interactive Lectures
X Creative Projects          Individual Coaching
X Lecture                   X Films/Videos/Slides
X Demonstrations
☐ Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:
X Reading          X Tests          Individual Projects
☐ Oral Presentations X Worksheets  X Collaborative Projects
X Textbook Problems  Papers  ☐ Portfolio
☐ Group Problems  ☐ Term Paper
☐ Other (describe below)

EXPECTED STUDENT LEARNING OUTCOMES: See Above.
"This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal."

The information in this course outline is subject to revision

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

Veteran Services: Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or Minnesota Relay Service at 800-627-3529 or by using your preferred relay service.

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