Faculty is 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 Academic Affairs and Standards Council.

DEPT. RADT COURSE NUMBER: 1140

NUMBER OF CREDITS: 3

COURSE TITLE: Radiologic Exposures II

CATALOG DESCRIPTION:

Implementation of radiological exposure compensations as well as the effects of each compensation on image quality and the knowledge and ability to process and evaluate radiographic images will be emphasized. Requirements will focus on x-ray film, intensifying screens, radiographic processing, processing systems, digital imaging, digital imaging system components and the ability to identify and recognize diagnostic quality. The principle and operation of automatic exposure control is also presented. Advancement in examination difficulty and complexity of mathematical applications will be reflected.

AUDIENCE: radiologic technology students

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

Area: by meeting the following competencies:
Area: by meeting the following competencies:
Area: by meeting the following competencies:

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE:
RADT 1130

LENGTH OF COURSE : 3 credits

THIS COURSE IS USUALLY OFFERED:
Every other year ☐ fall X☐ spring ☐ summer ☐ undetermined ☐

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

1) ACADEMIC CONTENT: The academic objectives of this course are:
   a. Identify components of film and digital image processing
   b. Describe how radiographic quality is affected by changes in technical factors, processing, and other radiographic accessories.
c. Application of mathematical formulas to solve for changes in technical factors.

2) THINKING SKILLS: This course will help students improve the effectiveness of their thinking skills through:
   a. Manipulate and recognize a need for change in technical factors to process a quality image.
   b. Identify radiographic quality issues on radiographic images.

3) COMMUNICATIONS SKILLS: This course will help students improve their oral and written communication skills through:
   a. Select and utilize the appropriate method of communication to interact with peers while producing quality radiographs.

4) HUMAN DIVERSITY: This course will help students recognize, understand, and appreciate human diversity through:
   a. Explore cultural influences as it relates to interactions with various members of the health care team.

TOPICS TO BE COVERED:

See below.

LIST OF EXPECTED COURSE OUTCOMES:

1. demonstrate practical considerations in setting standards for acceptable image quality
2. analyze radiographic quality as it relates to technical factors
3. formulate radiographic techniques to achieve optimal radiographic images
4. recognize the impact relationships of factors have on radiographic technique selection
5. critique radiographic images
6. perform corrective actions to improve image quality
7. identify the structural components necessary for film processing
8. sequence the events associated with film processing
9. identify the quality control procedures required for film processing and radiographic imaging
10. demonstrate quality control procedures for film processing and radiographic imaging
11. describe the characteristics of digital processing
12. determine the types, causes and effects of artifacts on a radiographic image
13. outline the methods of silver recovery
14. describe the concept and components of automatic exposure control (AEC)
15. describe all aspects of digital imaging
16. compare and contrast digital imaging to film screen imaging
17. describe components associated with picture archive communication systems (PACS) and radiology information systems (RIS)
18. define Digital Imaging and Communications in Medicine (DICOM).
19. compare and contrast DR and CR
20. discuss the impact teleradiology has on health care

**LEARNING/TEACHING TECHNIQUES** used in the course are:
- [x] Collaborative Learning
- [x] Problem Solving
- [ ] Student Presentations
- [ ] Interactive Lectures
- [ ] Creative Projects
- [ ] Individual Coaching
- [x] Lecture
- [x] Films/Videos/Slides
- [ ] Demonstrations
- [ ] Other (describe below)
- [x] Lab

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

**EXPECTED STUDENT LEARNING OUTCOMES:**
See above.

The information in this course outline is subject to revision

**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.

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.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or via your preferred Telecommunications Relay Service.

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**An Affirmative Action Equal Opportunity Educator/Employer**

7/30/13