MASTER COURSE OUTLINE

A. RADT 2261 Radiographic Equipment and Exposures II

B. COURSE DESCRIPTION:

This course focuses on image quality by considering factors that affect brightness, contrast, recorded detail, and distortion. Digital image processing, image storage, and management are discussed, as well as x-ray interactions with matter are discussed. Mathematical problems that reflect the effect of change in exposure factors and radiographic devices on image quality will be calculated. Prerequisites: RADT 1260, RADT 1235, RADT 2283. This course is part of the Radiography program which is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT).
(3 Cr – 3 lect, 0 lab)

C. *Core Theme: Critical Thinking

D. RIVERLAND INSTITUTIONAL LEARNING OUTCOMES:

This course addresses the following Riverland Institutional Learning Outcome(s):
☒ ILO 1: critical thinking *(Core Theme Goal 2)*
☐ ILO 2: awareness of the larger global community *(Core Theme Goal 7 or Goal 8)*
☐ ILO 3: ethical, engaged citizenship *(Core Theme Goal 9 or Goal 10)*
☐ ILO 4: communication and collaboration *(Discipline Goal 1 and by any learning outcome(s) involving communication or collaboration)*

E. MAJOR CONTENT AREAS:

- Digital imaging
- Quality control
- Beam restriction/scatter
- Fluoroscopy
- Radiographic exposure
- Radiographic quality
- Radiographic technique
- X-ray interactions with matter
- Radiation protection

F. GOAL TYPE, OBJECTIVES, AND OUTCOMES:

GOAL TYPE	OBJECTIVES Students will be able to	OUTCOMES The student will successfully
*Critical Thinking	gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected.	1. express how body habitus and the chemical make-up of a body part affects the production of radiation and the final radiographic image.
CS	apply math problems to exposure principles.	1. demonstrate knowledge of mathematical formulas used when adjusting radiographic exposure factors.
CS	describe scatter radiation and its effect on radiographic images.	1. explain the effect of the scatter radiation on an image.
CS	identify factors that affect the overall recorded detail on a radiographic image.	1. articulate the geometric factors that affect recorded detail and distortion.
CS	apply knowledge of x-ray interactions with matter to produce a quality radiographic image.	1. describe the five different x-ray photon interactions with matter.

F. SPECIAL INFORMATION:

This course may require use of the Internet, the submission of electronically prepared documents and the use of a course management software program. Students who have a disability and need accommodations should contact Accessibility Services at the beginning of the semester. This information will be made available in alternative format, such as Braille, large print, or current media, upon request.

G. COURSE CODING INFORMATION:

Course Code X/Class Maximum 20; Letter Grade

Revision date: 12/15/10; 05/07/13; 11/29/17; 03/27/22; 10/01/24
AASC Approval date: 12/12/17; 05/03/22; 11/19/24

***Riverland Community College Disciplines**	**MnTC Goal Number**
Communication (CM)	**1**
Natural Sciences (NS)	**3**
Mathematics/Logical Reasoning (MA)	**4**
History and the Social & Behavioral Sciences (SS)	**5**
Humanities and Fine Arts (HU)	**6**

**Riverland Community College Core Themes	MnTC Goal Number
Critical Thinking (CT)	**2**
Human Diversity (HD)	**7**
Global Perspective (GP)	**8**
Ethical and Civic Responsibility (EC)	**9**
People and the Environment (PE)	**10**

*These five MnTC Goals have been identified as Riverland Community College Disciplines.
** These five MnTC Goals have been identified as Riverland Community College Core Themes.
NOTE: The Minnesota Transfer Curriculum "10 Goal Areas of Emphasis" are reflected in the five required discipline areas and five core themes noted in the Riverland Community College program of study guide and/or college catalog.