Course Information Form (CIF)

Course Code: XRA 112

Course Title: Radiologic Technology II

Department: Allied Health
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 51.0907
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 2-3-3
Credit Hour Distribution:

Lecture: 2	Lab: 3	Clinical: 0	**Total: 3**

General Course Information

Catalog Description

X-ray imaging characteristics, factors affecting radiographic exposure, and digital imaging. Radiographic positioning of skull and facial bones.

General Course Objectives

Practice employing methods and procedures learned in lecture and apply those techniques during lab to manipulate factors that affect the radiographic image.

Minimum Placement Levels

English	Reading	Math
Placement out of ENG 099	Placement out of CCS 099	Placement out of MAT 072

Prerequisites

Credit in XRA 111, XRA 114, XRA 131, and BIO 121
Credit or concurrent enrollment in XRA 132, BIO 122, and PHY 112
Admission into the Radiologic Technology program

Methods of Evaluation

5-8 objective examinations and 2-4 practical examinations.

Instructional Materials and Additional Supplies

Merrill's Atlas of Radiographic Positions and Procedures Volume I, current edition, Frank, E., Long, B. and Smith, B. Elsevier, 9780323833318
Merrill's Atlas of Radiographic Positions and Procedures Volume II, current edition, Frank, E., Long, B. and Smith, B. Elsevier, 9780323832816
Principles of Radiographic Imaging, Carlton & Adler, current edition, Thompson Delmar, 9781337711067

Course Content

General Learning Outcomes (GLOs)

- Communication: Students will demonstrate the ability to read, write, listen, and speak effectively.
- Critical Thinking and Information Literacy: Students will demonstrate the ability to evaluate perspectives, evidence, and implications, and to locate, assess, and use information effectively.
- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Essential Characteristics of Imaging	1. Determine how to manipulate kVp, mAs, grids, and SID to affect image quality. 2. Assess non-diagnostic images and calculate changes to adjust image brightness, contrast, SID/OID changes, and minimize image fog.	6	12	0
Factors Influencing Choice of Exposure	1. Calculate changes in exposure factors to modify image quality. 2. Manipulate and determine which factors have the greatest effect on image brightness, image contrast, spatial resolution, and distortion.	6	12	0
Manual Factors and Automatic Exposure Devices	1. Determine the difference between setting a manual technique (kVp and mAs) versus utilizing the AEC device, and compare the exposure index.	4	3	0
Digital Imaging and Image Artifacts	1. Establish critical elements used in digital imaging systems and compare the dangers to radiation safety versus the improved image quality. 2. Evaluate digital imaging artifacts and manipulate technical factors that control/reduce image artifacts.	4	3	0
Beam Restriction and Image Quality	1. Determine the effect of beam restriction on image quality (exposure and contrast). 2. Critique non-diagnostic images and determine what factors should be adjusted to produce diagnostic quality images.	4	3	0
Headwork Positioning	1. Manipulate skull phantom to obtain diagnostic images of the skull, sinuses, facial, nasal, orbits, and mandible. 2. Assess images to determine diagnostic quality, accurate positioning, and modifications if needed.	6	12	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	45	0