**RADT 60 Course Outline as of Fall 2026**

# CATALOG INFORMATION

Dept and Nbr: RADT 60 Title: INTRO TO RADIOLOGIC TECH
Full Title: Introduction to Radiologic Technology
Last Reviewed: 9/8/2025

| Units | | Course Hours per Week | | Nbr of Weeks | Course Hours Total | |
|---|---|---|---|---|---|---|
| Maximum | 2.00 | Lecture Scheduled | 2.00 | 17.5 | Lecture Scheduled | 35.00 |
| Minimum | 2.00 | Lab Scheduled | 0 | 17.5 | Lab Scheduled | 0 |
| | | Contact DHR | 0 | | Contact DHR | 0 |
| | | Contact Total | 2.00 | | Contact Total | 35.00 |
| | | Non-contact DHR | 0 | | Non-contact DHR | 0 |

Total Out of Class Hours: 70.00 Total Student Learning Hours: 105.00

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|---|---|
| Title 5 Category: | AA Degree Applicable |
| Grading: | Grade Only |
| Repeatability: | 00 - Two Repeats if Grade was D, F, NC, or NP |
| Also Listed As: | |
| Formerly: | |

**Catalog Description:**
In this course, students will be introduced to the field of radiologic technology, equipment, digital technologies, radiologic and health care practices, and regulatory requirements.

**Prerequisites/Corequisites:**
Concurrent Enrollment in RADT 61A, RADT 71A (or formerly RADT 61.1AL), RADT 64 and RADT 64L

**Recommended Preparation:**

**Limits on Enrollment:**
Acceptance in program

**Schedule of Classes Information:**
Description: In this course, students will be introduced to the field of radiologic technology, equipment, digital technologies, radiologic and health care practices, and regulatory requirements. (Grade Only)
Prerequisites/Corequisites: Concurrent Enrollment in RADT 61A, RADT 71A (or formerly RADT 61.1AL), RADT 64 and RADT 64L
Recommended:

Limits on Enrollment: Acceptance in program
Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

## ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

| | | | | | |
|---|---|---|---|---|---|
| **AS Degree:** | **Area** | | | Effective: | Inactive: |
| **CSU GE:** | **Transfer Area** | | | Effective: | Inactive: |
| **IGETC:** | **Transfer Area** | | | Effective: | Inactive: |
| **CSU Transfer:** | Transferable | Effective: | Fall 1981 | Inactive: | |
| **UC Transfer:** | | Effective: | | Inactive: | |

**CID:**

**Certificate/Major Applicable:**
Both Certificate and Major Applicable

## COURSE CONTENT

**Student Learning Outcomes:**
At the conclusion of this course, the student should be able to:
1. Label the main functions of the x-ray tube on a diagram.
2. Summarize the personal traits and characteristics necessary for a radiologic technologist in a multicultural health care setting.

**Objectives:**
At the conclusion of this course, the student should be able to:
1. Describe the general use of ionizing radiation for medical purposes.
2. Identify the major equipment and accessories used in a radiology department and image processing.
3. Identify the major equipment and components of a digital radiography system.
4. Demonstrate an understanding of the operation of the major equipment and components of a digital radiography system.
5. Explain and demonstrate the understanding of the process of x-ray production.
6. Describe and apply basic rules of practicing conscientious radiation safety and protection.
7. Identify and describe the function of the x-ray tube and its components.
8. Compare and contrast basic interactions of radiation on matter.
9. Identify the personal traits and characteristics necessary for a radiologic technologist in a multicultural health care setting.
10. Define and discuss professionalism and ethics as applied to radiologic technologists when dealing with patients and staff of diverse backgrounds.
11. Examine and integrate the values, technological themes, scientific and research methods used in radiology.
12. Identify and determine realistic career objectives as related to radiology.
13. Conduct research specific to credentialing requirements in radiology.

**Topics and Scope:**

I. History of Radiology and Its Scientists
   A. Discovery of vacuum tubes and X-ray radiation
   B. Major developments in the field of radiology
II. Principles of X-ray Production and Its Medical Use
   A. Electricity and generator
   B. X-ray tube construction
   C. X-ray use in medicine
   D. Digital radiology
III. Equipment used in Radiology and Image Processing
   A. Description of equipment
   B. Image formation
IV. Radiographic Accessories
   A. Grids
   B. Collimators
   C. Filters
V. Introduction to Radiation Physics
   A. Atomic structure
   B. Identify properties necessary for X-ray production
   C. Interactions with matter
VI. Image Analysis
   A. Brightness
   B. Grayscale
   C. Spatial resolution
   D. Distortion
VII. Digital Technology
   A. Direct digital radiography
   B. Computed radiography
   C. Digital Imaging and Communications in Medicine (DICOM)
   D. Medical Image Management and Processing System (MIMPS)
   E. Electronic Medical Record (EMR) / Electronic Health Record (EHR)
VIII. Hospital, Department, National, State, and Professional Organizations.
   A. Organizational charts
   B. Professional associations
IX. Professionalism
   A. American Registry of Radiologic Technologists (ARRT) Code of Ethics
   B. Health Insurance Portability and Accountability Act (HIPAA)
X. National and State Regulatory Agencies
   A. California Department of Health Care Services. California Code of Regulations Title 17 (Title 17. Public Health Division 1. State Department of Health Services-Radiologic Health Branch. Chapter 5. Sanitation (Environmental) Subchapter 4.5 Radiologic Technology. Sections 30100 - 30500)
   B. National Council on Radiation Protection (NCRP)
   C. California Department of Health Care Services. California Code of Regulations Title 22 (Title 22. Social Security Division 5. Licensing and Certification of Health Facilities, Home Health Agencies, Clinics, and Referral Agencies, Chapter 1. General Acute Care Hospitals. Article 3. Basic Services, Sections 70251 - 70259. Radiological Service)
   D. Food and Drug Administration (FDA) guidelines
XI. Credentialing
   A. State certifications
   B. National certifications
XII. Radiation Safety and Protective Measures
   A. Self

B. Patient
C. Other personnel
D. As Low As Reasonably Achievable (ALARA)
E. Shielding
F. Precautions for pregnant patients and personnel

XIII. Patient Diversity in Radiology
A. Age
B. Race
C. Ethnicity
D. Gender

**Assignment:**

1. Reading Assignments (one chapter per week)
2. Research and present a 15-minute oral presentation on a major issue related to radiology or patient/staff relations
3. Complete chapter worksheets (10-12)
4. Quizzes (5-8)
5. Midterm examination
6. Final examination

**Methods of Evaluation/Basis of Grade:**

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

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| Chapter worksheets | Writing<br>30 - 30% |

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

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| None | Problem solving<br>0 - 0% |

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

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|---|---|
| None | Skill Demonstrations<br>0 - 0% |

**Exams:** All forms of formal testing, other than skill performance exams.

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| Quizzes; midterm; final | Exams<br>50 - 55% |

**Other:** Includes any assessment tools that do not logically fit into the above categories.

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| Oral presentation | Other Category<br>15 - 20% |

**Representative Textbooks and Materials:**
Introduction To Radiologic and Imaging Sciences and Patient Care. 8th ed. Adler, Arlene and Carlton, Richard. Elsevier. 2023.
Radiographic Imaging and Exposure. 6th ed. Fauber, Terri L. Elsevier 2021.
Patient Care in Radiography with an Introduction to Medical Imaging. 10th ed. Ehrlich, Ruth Ann and Coakes, Dawn M. Elsevier 2021.
Instructor prepared materials