



100 RAD: Intro to Radiography

Course Outcome Summary

Course Information

Description	This course introduces learners to Radiography. Explores clinical applications of radiography, safety, and the role of a technologist in a healthcare facility.
Instructional Level	A.A.S. - Associate in Applied Science
Total Credits	2.00
Total Hours	36.00

Types of Instruction

Instruction Type	Credits/Hours
Lecture	2

Pre/Corequisites

Prerequisite Acceptance into the Radiography Technician program.

Core Abilities

- 1 Act responsibly
- 2 Communicate clearly
- 3 Demonstrate integrity
- 4 Think critically and creatively
- 5 Work cooperatively

Program Outcomes

- 1 Practice radiation protection for the patient, self and others
- 2 Provide safe, efficient, and supportive patient care
- 3 Model professional and ethical behavior consistent with the A.R.R.T. Code of Ethics

External Standards

Title	ASRT Radiography
Sponsoring Organization	American Society of Radiologic Technologists

Target Standards

- C. Digital Image Acquisition and Display:
- J.I. Radiographer and Health Care Team

Course Competencies

1 Examine the clinical applications of radiography

Assessment Strategies

Summary Paper

Criteria

summarize includes the general overview of radiography (purpose and rationale)
summary includes the history and development of radiography
summary includes imaging options that are available (types and purpose)
summary includes the equipment used
summary includes how data is collected
summary includes rewards/challenges encountered in radiography
work evidences correct spelling, grammar and punctuation

Learning Objectives

Trace the history and development of radiography
Identify the purpose of radiography
Differentiate between types of radiography
Determine how data is collected in by radiography Distinguish among types of radiography equipment

2 Differentiate among the various imaging modalities in healthcare

Assessment Strategies

Chart
Report

Criteria

chart includes the applications and uses of each modality
chart includes the abnormalities detected for each modality
chart includes the advantages of each modality
chart information includes significant information
information shows differences between the modalities
chart is neat and well organized
report includes the applications and uses of each modality

Learning Objectives

Identify the various imaging modalities in health care
Explain the applications of various modalities
Describe the advantages of one modality over another

3 Examine the role and responsibilities of the radiography technician

Assessment Strategies

Written job description

Criteria

job description include a list of tasks performed by the technologist
job description includes registry requirements for a technologist
job description includes professional organizations related to radiography
job description includes the relationship of the technologist to the interpreting physician and medical physicist
job description includes proper spelling, grammar and punctuation
job description is presented neatly in appearance

Learning Objectives

Outline the technologist's scope of practice
Differentiate the role of the technologist with other members of the healthcare team
Detail the importance of accreditation, registry, and professional organizations related to radiography

4 Apply basic radiation safety and protection principles

Assessment Strategies

Simulation

Criteria

- you recognize safe radiation practices of the radiographer
- you determine safe radiation protection practices on behalf of the patient
- you distinguish between radiation units of measurement
- you illustrate the effect of time on radiographer exposure
- you illustrate the effect of distance on radiographer exposure
- you illustrate the effect of shielding on radiographer and patient exposure
- you summarize the ALARA principle
- you summarize the risks vs. benefits concept of radiographic procedures

Learning Objectives

- Identify specific objects of concern for radiation scanning (pacemakers, monitors, implants, etc.)
- Outline general safety guidelines for patients, technologists, and other personnel
- Identifies specific objects of danger for use in an MR scanning room (O2 tanks, carts, wheelchairs, scissors, pens, etc.)
- Outline specific absorption rate requirements (SAR)
- Describe the use of monitoring equipment and sedation procedures

5 Analyze legal and ethical issues in healthcare

Assessment Strategies

Case Study

Criteria

- you explore, social, and cultural basis of ethics
- you apply concepts of personal honesty, integrity, accountability, competence, and compassion, as ethical imperatives in health care
- you evaluate specific situations and conditions that give rise to ethical dilemmas in health care
- you practice correct methods of documentation with respect to legal and ethical imperatives
- you interpret the implications of legal liability, malpractice, and negligence
- you comply with the principles of patient rights including the doctrine of informed patient consent

Learning Objectives

- Define moral and professional ethics
- Describe accepted (ethical) standards of conduct for the radiographer when interacting with the following patients, peers and attending radiologists
- Differentiate between confidential and nonconfidential information relative to a patient's medical care.
- Discuss the American Society of Radiologic Technologists Scope of Practice for the Radiographer
- Discuss how ASRT Code of ethics relates to professional ethical values and principles/standards
- Examine how the Patient Bill of Rights relates to proper ethical conduct on the part of the medical institution
- Explain institutional and professional liability protection available to the radiographer

6 Apply standard procedures for infection control

Assessment Strategies

Simulation

Criteria

- you perform handwashing technique
- you use gown, gloves, masks, etc. as needed
- you apply isolation precautions
- you follow the recommendations from the Center's for Disease Control and Prevention and OSHA
- you dispose of sharps
- you follow mechanical and electrical safety procedures
- you interpret Material Safety Data Sheets
- you dispose of medical wastes appropriately

Learning Objectives

- Identify links in the chain of infection
- Explain specific ways a radiographer while providing patient care, can decrease the incidence of contamination by

an infectious agent

Describe aseptic techniques a radiographer practices

Describe how the components of standard precautions must be incorporated while providing patient care

7 Respond to emergencies in the scanning area

Assessment Strategies

Emergency Response Checklist

Criteria

checklist identifies emergencies specific to the scanning area (metallic, cryogen leak, quench, and medical emergency)

checklist lists patient related emergencies (breathing, cardiac, adverse reactions to contrast, equipment failure, etc.)

checklist details standard protocols for dealing with the emergencies

checklist explains how to call for a fire and the special considerations in the radiography department

checklist explains how to call for a code and the special considerations in the radiography department

Learning Objectives

Identify emergencies specific to the scanning area (metallic, cryogen leak, quench, and medical emergency)

Recognize patient related emergencies (breathing, cardiac, adverse reactions to contrast, equipment failure, etc.)

Determine standard protocols for dealing with the emergencies

Explain how to call for a fire and the special considerations in the radiography department

Explain how to call for a code and the special considerations in the radiography department

8 Illustrate the layout of a radiography suite

Assessment Strategies

Illustration or Graphic

Criteria

illustration includes the radiography equipment in the suite

illustration includes the layout of the suite with items in the appropriate place

illustration includes an explanation for why items should be placed accordingly

illustration notes accessory equipment available

Learning Objectives

Explain how each piece of the radiography equipment in the suite works

Explain the importance of the suite layout

Identify the type of accessory equipment available in a suite

Identify types of operating rooms, monitoring equipment, and medical infusion pumps that are compatible