

R T 50: ORIENTATION TO RADIATION SCIENCE TECHNOLOGIES

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2024
Units:	2
Hours:	2 lecture per week (24 total per quarter)
Prerequisite:	AHS 52; BIOL 40A, 40B and 40C or equivalent; R T 200L.
Corequisite:	R T 53.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- Describe radiation science terms, program policies, accreditation, credentialing, certification, licensure, regulations, and various specialties and imaging modalities.
- Explain the use of medical radiation, patient care techniques, anatomy identification and positioning of the abdomen.

Description

Overview of Radiologic Technology as a career. Radiographic terminology, positioning for abdomen, vital sign assessment, introduction to x-ray protection and production, radiographic image formation, patient care, and radiation protection. Overview of program structure and student services. Intended for students in the Radiologic Technology Program; enrollment is limited to students accepted in the program.

Course Objectives

The student will be able to:

- Define radiation science terms.
- Identify radiographic anatomy and positioning for routine abdomen.
- Explain simple radiation protection procedures.
- Identify and explain various components of the x-ray room.
- Describe the basic terms of image formation.
- Explain the radiographer's role in patient care during radiographic examinations.
- Identify the program structure and the policy guidelines.
- Define program accreditation, certification, licensure, and regulations.
- Explain the professional credentialing process in radiologic technology.
- List the various professional organizations in radiology.
- Differentiate MRI zones related to patient safety.
- Discuss how to adhere to HIPAA rules relating to patient records while in and outside of the clinical setting.

- Identify, compare, and contrast different specialties and imaging modalities.
- Recognize various student services available.
- Compose a professional portfolio that outlines the student's educational process.

Course Content

- Terminology of radiation science
 - Positioning and procedures
 - Movement and direction
 - Anatomical terms
- Abdomen positioning
 - Position of patient
 - IR size and placement
 - Direction central ray and distance
 - Centering criteria
 - Technique used
 - Breathing instructions
 - Protection measures
- Radiation protection measures
 - Protection to personnel
 - Time
 - Distance
 - Shielding
 - Radiation monitoring
 - Aprons and gloves
 - Protection to patient
 - General shielding when appropriate
 - Collimation
- Components of a basic x-ray room
 - X-ray tube
 - Locks
 - Movement
 - Control panel
 - Exposure rotor
 - MA
 - Time
 - Kv
 - Positioning table
 - Movement
 - Bucky
 - Locks
- Basic terms of image formation
 - Image receptor size
 - CR
 - DR
- Patient care
 - Working with diverse cultures
 - Body mechanics and patient assistance
 - Transfer of patient
 - Wheelchair
 - Gurney
 - Turning of patient
 - Proper stance

- vi. Proper lifting
- vii. Injury prevention
- c. Vital signs
 - i. Temperature
 - ii. Pulse
 - iii. Respiration
 - iv. Blood pressure
 - v. Normal/abnormal ranges
- d. Infection control
 - i. Handwashing
 - ii. Surgical asepsis
 - iii. Medical asepsis
- 7. Educational program structure and polices
 - a. Educational/program director
 - b. Clinical coordinator
 - c. Didactic instructor
 - d. Clinical instructor
 - e. Students
 - f. Program manuals
- 8. Accreditation
 - a. Definition
 - b. Programmatic accreditation
 - c. Institution accreditation
- 9. Professional credentialing
 - a. Definition
 - b. Agencies
 - c. National
 - d. State
- 10. Professional organizations
 - a. Purpose/function
 - b. State organizations
 - c. National
 - d. International
 - e. Related associations
- 11. MRI
 - a. Basic function
 - b. Safety issues
 - c. Zone identification
- 12. HIPAA
 - a. Patient rights
 - b. Ethical obligation
 - c. Access to information
 - d. Security of patient information
- 13. Imaging modalities
 - a. Diagnostic
 - b. CT
 - c. MRI
 - d. Sonography
 - e. Mammography
 - f. Nuclear medicine
 - g. Radiation therapy
- 14. Student services

- a. Purpose/function
- b. Location
- c. Contact
- 15. Professional portfolio
 - a. Outline
 - b. Content
 - c. Create

Lab Content

Not applicable.

Special Facilities and/or Equipment

Classroom with multimedia equipment and internet access.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Written midterm
Written final examination

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture
Discussion
Cooperative learning exercises
Demonstration
Role play

Representative Text(s) and Other Materials

Foothill College (RT Program). [Student Handbook](#). 2023.

Foothill College (RT Program). [Clinical Education Manual - Orientation](#). 2023.

Foothill College (RT Program). [Clinical Education Manual - First & Second Year](#). 2023.

Foothill College (RT Program). [Student Clinical Competency Handbook](#). 2023.

The above texts are updated each year, and the current edition will be used.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

- 1. Daily reading assignments from course syllabus and clinical manuals
- 2. Daily lecture covering subject matter from course syllabus with extended topic information

Discipline(s)

Radiological Technology