

# R T 50: ORIENTATION TO RADIATION SCIENCE TECHNOLOGIES

## Foothill College Course Outline of Record

Heading	Value
<b>Units:</b>	2
<b>Hours:</b>	2 lecture per week (24 total per quarter)
<b>Prerequisite:</b>	AHS 52; BIOL 40A, 40B and 40C or equivalent; R T 200L.
<b>Corequisite:</b>	R T 53.
<b>Degree &amp; Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade Only
<b>Repeatability:</b>	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, basic computer operation and Internet application. 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.
- perform basic computer functions.
- discuss the impact the Internet has on the radiation sciences.
- identify, compare, and contrast different specialties and imaging modalities.
- recognize various student services available.
- assemble 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
    - 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
  - Cassette sizes/image receptors
  - CR
  - DR
- Patient care
  - Working with diverse cultures
  - Body mechanics and patient assistance
    - Transfer of patient
    - Wheelchair
    - Gurney
    - Turning of patient
    - Proper stance
    - Proper lifting
    - Prevention
  - Vital signs
    - Temperature
    - Pulse
    - Respiration
    - Blood pressure
    - Normal/abnormal ranges
- Infection control
  - Handwashing
  - Surgical asepsis
  - Medical asepsis
- Educational program structure and polices

1. Educational/program director
2. Clinical coordinator
3. Didactic instructor
4. Clinical instructor
5. Students
6. Program manuals
- H. Accreditation
  1. Definition
  2. Programmatic accreditation
  3. Institution accreditation
- I. Professional credentialing
  1. Definition
  2. Agencies
  3. National
  4. State
- J. Professional organizations
  1. Purpose/function
  2. Local organizations
  3. State organizations
  4. National
  5. International
  6. Related associations
- K. Computer technology
  1. Basic function
  2. Application in radiology
  3. Patient confidentiality
  4. Email
- L. Internet
  1. History
  2. Internet vs. intranet
  3. Access to information
  4. Security of patient information
  5. Enhancer to customer service
- M. Imaging modalities
  1. Diagnostic
  2. CT
  3. MRI
  4. Sonography
  5. Mammography
  6. Nuclear medicine
  7. Radiation therapy
- N. Student services
  1. Purpose/function
  2. Location
  3. Contact
- O. Professional portfolio
  1. Outline
  2. Content
  3. Assemble

## Lab Content

Not applicable.

## Special Facilities and/or Equipment

Classroom with multimedia equipment and internet access.

## Method(s) of Evaluation

- A. Written midterm.
- B. Written final examination.

## Method(s) of Instruction

Lecture, discussion, cooperative learning exercises, demonstration.

## Representative Text(s) and Other Materials

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

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

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

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

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

A. Daily reading assignments from course syllabus and clinical manuals.

B. Daily lecture covering subject matter from course syllabus with extended topic information.

## Discipline(s)

Radiological Technology