

# R T 51A: FUNDAMENTALS OF RADIOLOGIC TECHNOLOGY I

## Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2024
Units:	4
Hours:	4 lecture per week (48 total per quarter)
Prerequisite:	R T 50.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

## Student Learning Outcomes

- Assess proper patient positioning of the chest, abdomen, upper and lower extremities, in order to apply positioning skills in the clinical setting resulting in a diagnostic image.
- Evaluate chest, abdomen, upper and lower extremity radiographs for anatomical structures for proper positioning which will aid in the diagnosis of disease.

## Description

Medical and radiographic terms. Basic positioning and anatomy, related to chest, abdomen, upper and lower extremities. 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 medical terminology, related to radiographic positioning and procedures.
- Identify the anatomy of the chest, abdomen, and upper and lower extremity in a radiograph.
- Describe the positioning used to visualize anatomic structures of the chest, abdomen, and upper and lower extremity.
- Evaluate radiographic images and explain rationale for each projection/procedure.

## Course Content

- Medical terminology
  - General radiographic terms
  - Body planes, sections, and lines
  - Body surfaces and parts
  - Radiographic projections
  - Body positions
  - Special projection terms
  - Relationship terms
  - Terms related to movements
  - Misused positioning terms

- Anatomy
  - Chest
  - Abdomen
  - Upper extremities
    - Finger/thumb
    - Hand
    - Wrist
    - Forearm
    - Elbow
    - Humerus
  - Lower extremities
    - Toes
    - Calcaneus
    - Foot
    - Ankle
    - Tibia-fibula
    - Knee
- Positioning
  - Chest
  - Abdomen
  - Upper extremities
    - Finger/thumb
    - Hand
    - Wrist
    - Forearm
    - Elbow
    - Humerus
  - Lower extremities
    - Toes
    - Calcaneus
    - Foot
    - Ankle
    - Tibia-fibula
    - Knee
- Image evaluation
  - Anatomic structures shown
  - Positioning and patient instructions
    - Positioning errors
    - Corrective action
  - Collimation and central ray
  - Technical and exposure criteria
    - Quantum mottle
    - Saturation
    - Exposure index
    - SID
    - Grid utilization
  - Image markers
    - Lead marker placement
    - Annotations for body position
  - Artifacts
  - Related pathology

## Lab Content

Not applicable.

## Special Facilities and/or Equipment

1. Multimedia classroom
2. Anatomical phantoms and models
3. Illuminators (viewboxes)
4. Positioning aids
5. 3-D virtual anatomy applications
6. Access to the digital image teaching file
7. Computer/internet access for online component

## Method(s) of Evaluation

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

Quizzes, midterms, and a comprehensive final examination, for content, terminology, and knowledge of subject matter  
Evaluation of written image analysis, for content, form, and application of critique methodology

## Method(s) of Instruction

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

Lecture  
Discussion  
Cooperative learning exercises  
Demonstration

## Representative Text(s) and Other Materials

Bontranger, Kenneth L.. [Textbook of Radiographic Positioning and Related Anatomy](#). 2021.

Bontranger, Kenneth L.. [Workbook and Laboratory Manual Radiographic Positioning and Related Anatomy](#). 2021.

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

1. Weekly reading assignments from text, one chapter per week, and syllabus, for integration into clinical practice
2. Weekly written image analysis assignments. Students will evaluate assigned images using a prescribed methodology in order to apply critical thinking skills to material provided in lecture

## Discipline(s)

Radiological Technology