

R T 53D: APPLIED RADIOLOGIC TECHNOLOGY IV

Foothill College Course Outline of Record

Heading	Value
Units:	9
Hours:	27 laboratory per week (324 total per quarter) This is a clinical laboratory course.
Prerequisite:	R T 53C.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- The student will demonstrate the proper positioning criteria for selected radiographic procedures in the clinical setting.
- The student will demonstrate knowledge of image evaluation, which includes anatomy, positioning, and technical factor usage for various radiographic procedures.

Description

Fourth of four courses that includes clinical participation and application of basic positioning, patient care, equipment manipulation, radiation protection and image analysis. Emphasis is placed on pediatric radiography, venipuncture and fluoroscopy. A clinical presentation is also required with the emphasis on pathology. 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:

- Demonstrate accuracy in radiation protection for the patient, personnel, and self.
- Exhibit knowledge, understanding, and dexterity in the proper use of radiographic equipment.
- Adhere to the Program's standards of attendance, punctuality, and dependability.
- Conduct themselves in a professional manner with co-workers, the public, and other hospital staff.
- Apply theory to practice by exhibiting ongoing, satisfactory job performance skills.
- Select proper technical factors for radiographic procedures on an average patient.
- Exhibit proper positioning skills as outlined by department protocol.
- Demonstrate knowledge and understanding of various nursing procedures and basic patient care.
- Develop and deliver an oral presentation as outlined in the Clinical Education Manual.
- Demonstrate competence on radiographic procedures, with an emphasis on pediatric radiography, venipuncture and fluoroscopy as outlined in the Clinical Education Manual.

K. Critique images of radiographic procedures, with an emphasis on pediatric radiography, venipuncture and fluoroscopy for radiographic quality.

Course Content

- Radiation protection
 - Closing doors during procedures and exposures.
 - Shielding all patients.
 - Collimating to image receptor size and/or part size.
 - Protecting self and others from irradiation by wearing aprons, gloves, and dosimeter.
 - Keeping repeats to a minimum.
 - Patient pregnancy status.
- Equipment
 - Competency and proficiency with equipment.
 - Safety precautions.
 - Effective manipulation of control panel.
- Punctuality and dependability
 - Punctuality in reporting to the room at the start of a shift; being in assigned room and ready for patient at least five minutes before start of shift.
 - Minimum loss of time due to absenteeism.
 - Taking proper length of time for breaks according to department policy.
 - Properly notifying the department in case of absence or tardiness.
 - Communicating whereabouts appropriately.
- Co-worker, hospital relationships
 - Being tactful and courteous with staff and others.
 - Taking the initiative and helping other staff members.
 - Working as a team with the technologist.
 - Accepting constructive criticism.
 - Conducting oneself in a professional manner.
 - Adhering to dress code.
 - Communicating effectively and following instructions.
 - Contributing to a pleasant work environment.
- Job performance
 - Marking all radiographs according to department protocol.
 - Planning and organizing work efficiently.
 - Being alert and interested in what is happening in the room and asking pertinent questions.
 - Reading and understanding the requisition and properly identifying the patient.
 - Maintaining a neat, clean, and well-stocked room.
 - Communicating effectively.
 - Following verbal instructions with multiple steps.
 - Making effective use of free time.
 - Completing the exam in a reasonable amount of time.
 - Demonstrating proper ethical behavior.
- Technical factors
 - Setting the control panel accurately for an exposure.
 - Understanding how various mA, kV, time, and distance factors affect the radiographic image.
 - Being able to differentiate between AEC and manual technique.
 - Checking control panel before exposure.
- Positioning
 - Knowing department routines for exams stated in objectives.
 - Knowing specific centering for each part radiographed, including angulation of the x-ray tube and body part.
 - Positioning the patient carefully and accurately; using proper immobilization.
 - Identifying basic anatomy and critiquing images.

5. Handling patients gently when positioning, using concise instructions, and watching patient during breathing instructions.

H. Patient care and nursing procedures

1. Communicating effectively with the patient.
2. Explaining exam to the patient.
3. Using a safe approach when transferring patients.
4. Knowing the location of emergency equipment and supplies.
5. Proper handling of a patient with IV's and catheters.
6. Applying surgical and medical asepsis when drawing up syringes and working around a sterile field.
7. Completing the exam in a reasonable amount of time.

I. Student presentation

1. Protocol and procedure.
 2. Anatomy.
 3. Positioning.
 4. Technique.
 5. Image analysis.
- J. Competency in performing radiographic procedures, with an emphasis on pediatric radiography, venipuncture and fluoroscopy

1. Radiation protection significance.
2. Equipment utilization.
3. Technical factor selection.
4. Positioning landmarks and skills.
5. Image receptor and marker use.
6. Patient management and care.
7. Image quality and anatomy.

K. Image evaluation

1. Anatomic structures shown.
2. Positioning and patient instructions.
3. Collimation and central ray.
4. Technical and exposure criteria.
5. Image markers and identifiers.
6. Related pathology.

Lab Content

A. Radiologic technology clinical practice

1. Radiation protection
2. Equipment operation
3. Image production
4. Image evaluation
5. Radiographic procedures
6. Patient care in a clinical setting

Special Facilities and/or Equipment

- A. Rotation to clinical affiliate with energized x-ray equipment.
- B. Laptop for viewing digital teaching file in the clinical setting.

Method(s) of Evaluation

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

- A. Clinical performance evaluation.

Method(s) of Instruction

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

- A. Discussion
- B. Cooperative learning exercises
- C. Field work

D. Oral presentations

E. Demonstration

Representative Text(s) and Other Materials

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

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

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

Bontrager, Kenneth. [Textbook of Radiographic Positioning and Related Anatomy](#). 9th ed. St. Louis, MO: C. V. Mosby, 2018. ISBN-978-0-323-39966-1

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

This is a clinical rotation in a radiology department. Students use their knowledge learned in their didactic courses to perform radiologic procedures on real patients. One oral presentation on a radiologic case study is required at the end of the quarter. The student will need to research their topic, create and deliver their presentation.

Discipline(s)

Radiological Technology