

RADT-1401: RADIOGRAPHIC POSITIONING

Cuyahoga Community College

Viewing: RADT-1401 : Radiographic Positioning

Board of Trustees:

January 2026

Academic Term:

Fall 2026

Subject Code

RADT - Radiography

Course Number:

1401

Title:

Radiographic Positioning

Catalog Description:

Introduction to and application of radiographic positioning for upper and lower extremities, chest, pelvis, abdomen, gastrointestinal and urinary systems including use of contrast media. Techniques and positioning variations for pediatrics age specific patients. Basic concepts of patient care and the role of the radiographer as a member of the health care team. Specific radiological patient care skills used in radiology practices. Discussion of legal issues and doctrines with introduction of medico-legal terminology. Special emphasis on the American Registry of Radiologic Technologists' Standards of Ethics.

Credit Hour(s):

4

Lecture Hour(s):

2.5

Lab Hour(s):

4.5

Other Hour(s):

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Requisites

Prerequisite and Corequisite

Departmental approval: admission to program

Outcomes

Course Outcome(s):

1. Provide basic patient care for individuals having radiographic examinations including communication, exam preparation and responding to medical emergencies.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Demonstrate appropriate verbal and non-verbal communication techniques to use when interacting with patients and the health care team.
 2. Discuss various medical interventions and appropriate procedures to follow for medical emergencies.
 3. List and define the most frequently used terminology and acronyms in radiology.
 4. Discuss appropriate patient preparations and care during contrast studies.
 5. Demonstrate patient positioning and equipment placement techniques used for mobile radiography.
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Course Outcome(s):

2. Perform basic radiographic examinations using various image receptors in accordance with safety protocols.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Describe the patient preparation, equipment preparation, contrast media used and routine projections necessary for radiographic examinations.
 2. Demonstrate competency in performing common radiographic procedures of the upper extremities, chest, abdomen, gastrointestinal systems, urinary systems, and lower extremities simulated in the radiography laboratory under direct supervision of qualified personnel.
 3. Apply general radiation safety and protection practices associated with radiologic examinations in an appropriate manner.
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Course Outcome(s):

3. Critically evaluate radiographic images for positioning errors, correct centering, and overall image quality.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Correctly hang radiographic images for both film/screen and digital imaging.
 2. Recognize and correct basic positioning errors.
 3. Recognize and label basic anatomy in any imaging system.
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Course Outcome(s):

4. Apply knowledge of professional standards for radiographers.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Summarize the responsibilities of the radiographer as a member of the healthcare team.
 2. Describe the practice standards for the radiographer as defined by the American Registry of Radiologic Technologists (ARRT), American Society of Radiologic Technologists (ASRT) and state licensure.
 3. Appreciate the ARRT Standards of Ethics for radiographers.
 4. Discuss common legal terminology (e.g. battery, negligence, malpractice, etc.).
 5. Explain legal doctrines (e.g. respondeat superior, res ipsa loquitur, Good Samaritan Law, etc.).
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Course Outcome(s):

5. Adapt to special technical and positioning variations for the pediatric age specific patients.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Demonstrate proper and safe immobilization techniques.
 2. Establish effective communication and interaction skills with both the patient and the parents.
 3. Demonstrate knowledge of basic imaging routines.
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Methods of Evaluation:

- a. Examinations

- b. Quizzes
- c. Positioning lab pretests/competencies
- d. Specific radiography patient care skills checklist
- e. Class participation/attendance

Course Content Outline:

1. Standard Terminology for Radiographic Positioning
 - a. Standard terms
 - i. Position
 - ii. Projection
 - iii. View
 - b. Positioning Terminology
 - i. Recumbent
 - ii. Supine
 - iii. Prone
 - iv. Trendelenburg
 - v. Fowler's
 - vi. Decubitus
 - vii. Erect, upright
 - viii. Anterior position
 - ix. Posterior position
 - x. Lateral position
 - xi. Oblique position
 - c. General Planes
 - i. Sagittal or mid-sagittal
 - ii. Coronal or mid-coronal/midaxillary
 - iii. Transverse/axial
 - d. Room Preparation and clean-up
 - i. Cleanliness, organization and appearance
 - ii. Necessary supplies and accessory equipment
 - iii. I.D. image receptor
 - iv. Check accession number
 - e. Patient Preparation
 - i. Communication guidelines
 - ii. Identification of self (radiographer)
 - iii. Patient identification
 1. Interviewing/questioning
 2. Chart/requisition evaluation
 3. Terminology and acronyms specific to radiology
 4. Wrist band
 - iv. Patient instructions
 - v. Determination of pregnancy status
 - vi. Removal of items that may cause artifacts
 - vii. Patient assistance
2. Considerations for Routine Radiographic Procedures
 - a. Patient positioning
 - b. Part placement
 - c. Image receptor selection and placement
 - d. Beam-part-receptor alignment
 - e. Beam restriction and shielding
 - f. Image evaluation
3. Basic Radiographic Projections for the following, including the anatomical structures.
 - a. Upper Extremity
 - i. Finger
 1. Posteroanterior (PA) entire hand
 2. PA finger only
 3. Lateral
 4. Oblique
 5. Anteroposterior (AP) Thumb

- 6. Oblique thumb
- 7. Lateral thumb
- ii. Hand
 - 1. PA
 - 2. Lateral
 - 3. Oblique
- iii. Wrist
 - 1. PA
 - 2. Lateral
 - 3. Oblique 45 degrees
 - 4. PA for scaphoid
 - 5. Scaphoid (Stecher)
 - 6. Carpal canal
- iv. Forearm
 - 1. AP
 - 2. Lateral
- v. Elbow
 - 1. AP
 - 2. Lateral
 - 3. External oblique
 - 4. Internal oblique
 - 5. AP partial flexion
 - 6. Axial trauma (Coyle)
- vi. Humerus
 - 1. AP non-trauma
 - 2. Lateral non-trauma
 - 3. AP neutral trauma
 - 4. Scapular Y trauma
 - 5. Transthoracic lateral trauma
 - 6. Lateral, mid and distal, trauma
- vii. Shoulder
 - 1. AP internal and external rotation
 - 2. Inferosuperior axial, non-trauma
 - 3. Posterior oblique (Grashey)
 - 4. Transthoracic lateral trauma
 - 5. Scapular Y trauma
 - 6. Tangential non-trauma
 - 7. AP neutral trauma
- 4. Basic Radiographic Projections for the following, including the anatomical structures
 - a. Thorax/chest
 - i. PA upright
 - ii. Lateral upright
 - iii. Posterior oblique
 - iv. Anterior oblique
 - v. AP lordotic
 - vi. AP supine/cart chest
 - vii. Lateral decubitus
 - b. Abdomen
 - i. AP supine
 - ii. AP upright
 - iii. Lateral decubitus
 - iv. Dorsal decubitus
 - c. Gastrointestinal
 - i. Esophagus
 - 1. Right anterior oblique (RAO)
 - 2. Left lateral
 - 3. AP

- 4. PA
 - 5. PA oblique (LAO)
 - ii. Swallowing Dysfunction Study
 - iii. Upper GI Series (single or double contrast)
 - 1. AP scout
 - 2. RAO
 - 3. PA
 - 4. Right lateral
 - 5. Left posterior oblique (LPO)
 - 6. AP
 - iv. Small Bowel Series
 - 1. PA scout
 - 2. PA (follow through)
 - 3. Ileocecal spots
 - 4. Enteroclysis
 - v. Large Bowel
 - 1. Left lateral rectum
 - 2. Left lateral decubitus
 - 3. Right lateral decubitus
 - 4. Left and right posterior obliques (LPO and RPO)
 - 5. PA
 - 6. Left and right anterior obliques (LAO and RAO)
 - 7. AP and PA axial
 - 8. PA post-evacuation
 - d. Urinary System
 - i. Intravenous urography
 - 1. AP scout and series
 - 2. RPO and LPO 30 degrees
 - 3. PA or AP post-void
 - 4. AP ureteric compression
 - 5. CT urogram
 - 5. Explanation of contrast media used for gastrointestinal and urinary procedures
 - a. Contrast Media
 - i. Purpose
 - ii. Types
 - 1. Digestive System
 - a. Single and double contrast
 - i. Upper gastrointestinal system
 - ii. Lower gastrointestinal system
 - b. Swallowing dysfunction study
 - c. Small bowel
 - 2. Urinary System
 - a. Intravenous urography
6. Contrast Studies
 - a. Standard precautions
 - b. Medications and their administration
 - c. I.V.s and needle types
 - i. Solution withdrawal from vial
 - d. Barium instillation
 - e. Bed pan/urinal administration and gown changing procedures
 - f. Patient preparation, instruction and care
7. Basic Radiographic Projections for the following, including the anatomical structures
 - a. Lower Extremity
 - i. Toe
 - 1. AP, entire foot
 - 2. Oblique toe
 - 3. Lateral toe
 - ii. Foot

1. AP angle toward heel
2. Medial oblique
3. Lateral oblique
4. Mediolateral
5. Lateromedial
6. Lateral weight bearing
7. AP weight bearing
8. Sesmoids, tangential
- iii. Ankle
 1. AP
 2. AP mortise
 3. Mediolateral
 4. Oblique, 45 degrees internal
 5. Lateromedial
 6. AP stress views
- iv. Calcaneus
 1. Lateral
 2. Plantodorsal axial
 3. Dorsoplantar axial
- v. Tibia/fibula
 1. AP
 2. Lateral
 3. Oblique
- vi. Knee
 1. AP
 2. Lateral
 3. AP weight bearing
 4. Lateral oblique, 45 degrees
 5. Medial oblique, 45 degrees
 6. PA
 7. PA axial - intercondylar fossa (tunnel view)
- vii. Patella
 1. Lateral
 2. Supine flexion 45 degrees (Merchant)
 3. PA
 4. Prone flexion, 90 degrees (Settegast)
 5. Prone flexion, 55 degrees (Hughston)
- viii. Femur
 1. AP
 2. Mediolateral
- ix. Pelvis and Hip
 1. AP hip only
 2. Cross-table lateral hip
 3. Unilateral frog-leg, non-trauma
 4. Axiolateral inferosuperior trauma
 5. AP Pelvis
 6. AP Pelvis, bilateral frog-leg
 7. AP Pelvis, inlet/outlet
 8. Anterior oblique pelvis, acetabulum (Judet)
8. Medical Interventions and Emergencies
 - a. Nasogastric/nasoenteric tubes
 - b. Tracheostomy patients/endotracheal tube
 - c. Dobhoff/Enteroflex feeding tubes
 - d. Thoracostomy tube/chest tube
 - e. Central Venous Lines/PICC lines
 - f. Urinary Catheters
 - g. Mobile radiography
 - h. Portable equipment

9. Radiographer as a Health Care Team Member
 - a. Professionalism
 - b. Professional Societies
10. Legal Issues
 - a. Legal terminology (e.g. battery, negligence, etc.)
 - b. Legal doctrines (e.g. *respondeat superior*, *res ipsa loquitur*, Good Samaritan Law, etc.)
 - c. Patient rights/responsibilities
 - d. Patient education
 - e. Advanced directives
 - f. Informed consent
- K. Radiographic positioning for pediatric radiography
 1. Immobilization techniques
 2. Patient interaction/communication skills
 3. Basic imaging routines

Religious Accommodation

Before reviewing the course schedule, students should carefully review the following religious accommodation policy and other required instructional policies:

Religious Accommodation:

Students seeking an accommodation for absences permitted under Ohio's Testing Your Faith Act must provide the instructor with written notice of the specific dates for which the student requires an accommodation and must do so not later than fourteen (14) days after the first day of instruction. Please submit requests for accommodations at this link: <https://portal2.tri-c.edu/ReligiousAccommodation/ReligiousAccommodationForm>. Students with questions about their religious accommodations under Ohio's Testing Your Faith Act may contact the College's Office of General Counsel and Legal Services by phone at 216.987.4856 or via email at legal@tri-c.edu.

Other Required Instructional Policies:

<https://www.tri-c.edu/student-resources/curriculum/documents/syllabus-part-b.pdf>

Weekly Schedule

	Topics
Week 1	Introduction/Syllabus Review Positioning Nomenclature
Week 2	Hand/Fingers
Week 3	Wrist/Forearm/Elbow
Week 4	Humerus/Shoulder/Clavicle
Week 5	Pediatric Radiography/Medical Abbreviations
Week 6	Exam 1/Body Habitus
Week 7	Chest/Abdomen/IVP
Week 8	Gastrointestinal System: Esophagus/Modified Barium Swallow/UGI/Small Bowel Series/Colon Studies
Week 9	Diagnostic Procedures
Week 10	Exam 2 /Toes/Foot/Ankle
Week 11	Heel/Tibia-Fibula/Knee/Patella
Week 12	Femur/Hip/Pelvis
Week 13	Medical Emergencies/Mobiles and Trauma/Tubes and Lines
Week 14	Ethical and Legal issues
Week 15	Final Review
Week 16	Final Exam

The Course Schedule is subject to change due to pedagogical needs, instructor discretion, parts of term, and unexpected events.

Required/Recommended Readings

Reading will be from one of the below recommended textbooks, as selected by the individual instructors.

1. Rollins, JH; Long, BW; Curtis, Tammy. *Merrill's Atlas of Radiographic Positions & Radiologic Procedures*. 16th ed. St. Louis, MO: Elsevier, 2025.
2. Rollins, JH; Long, BW; Curtis, Tammy. *Workbook for Merrill's Atlas of Radiographic Positions & Radiologic Procedures*. 16th ed. St. Louis, MO: Elsevier, 2025.
3. Adler, A; Carlton, R; & Stewart K. *Introduction to Radiologic & Imaging Sciences & Patient Care*. 8th ed. St. Louis, Mo, Elsevier, 2022.
4. Bontrager, K. *Radiographic Positioning and Related Anatomy*. 10th ed. St. Louis, MO: Elsevier 2020.
 - <http://www.getbodysmart.com> (<http://www.getbodysmart.com/>)
 - Clover Learning (<https://cloverlearning.com/>) Diagnostic Imaging Training and Exam Prep
 - <http://www.asrt.org> (<http://www.asrt.org/>) American Society of Radiologic Technologists Radiography Curriculum
 - <http://www.arrt.org> (<http://www.arrt.org/>) American Registry of Radiologic Technologists Examination Content Specifications

Resources for the Instructor

Rollins, Jeannean Hall, et al. *Merrill's Atlas of Radiographic Positions & Procedures*. 16th ed.,. Elsevier, 2025.

Rollins, Jeannean Hall, et al. *Workbook for Merrill's Atlas of Radiographic Positions & Procedures*. 16th ed.,. Elsevier, 2025.

Adler, Arlene, et al., . *Introduction to Radiologic & Imaging Sciences & Patient Care*. 8th Ed.,. Elsevier, 2022.

Lampignano, John P., et al. *Textbook of Radiographic Positioning and Related Anatomy*. 11th Ed., . Elsevier, 2025.

Additional Resources for the Instructor

- <http://www.getbodysmart.com> (<http://www.getbodysmart.com/>)
- Clover Learning (<https://catalog.tri-c.edu/www.cloverlearning.com>) Diagnostic Imaging Training and Exam Prep
- <http://www.asrt.org> (<http://www.asrt.org/>) American Society of Radiologic Technologists Radiography Curriculum
- <http://www.arrt.org> (<http://www.arrt.org/>) American Registry of Radiologic Technologists Examination Content Specifications

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