

# Clinical Objectives for Special Rotation Areas

The student must complete all assigned diagnostic procedure categories prior to special area rotations. The student radiographer should exhibit professional traits and reach the defined objectives in special rotation areas.

Special Procedures	Nuclear Medicine
Radiation Oncology	Ultrasound
Computerized Tomography	Cardiac Catheterization
Magnetic Resonance Imaging	

These special rotation areas are to introduce the student technologists to different imaging modalities. Rotation objectives must be completed during each selected rotation period.

The Clinical Coordinator will assign the rotation length and rotation hours. The student radiographer will select three areas and locations to accomplish special rotation objectives.

Rules and regulations for clinical education are still in effect for special area rotations.

## Special Procedures

Upon completion of this rotation, the student radiographer will be able to demonstrate knowledge and understand the rationale for using contrast media to delineate pathology in the circulatory system. An acceptable level of competence has been attained when the student is able to complete the following:

1. Identify the different examinations performed.
2. Recognize all equipment utilized in specials.
3. Identify aseptic techniques utilized.
4. Identify items included on sterile trays.
5. Identify catheter types, sizes, and lengths. Also be able to identify them with particular exams.
6. Load and unload image receptor/film changer.
7. Load pressure injector with correct type and volume of contrast media and prepare for injection.
8. Program serial timer and set control factors on generator panel for exam.
9. Demonstrate professional behavior and patient care.
10. Select controls for fluoroscopy and diagnostic radiographs.
11. Differentiate the arterial and venous system of the human body.
12. Review textbooks relating to special procedures (Merrill's, etc.).
13. Identify pathology demonstrated on radiographic images.
14. Recognize and identify patient positioning and the normal anatomy demonstrated.
15. Identify contrast media(s) utilized.
16. Identify digital imaging systems utilized.
17. Identify location and implementation of crash cart and emergency equipment.

## Radiation Oncology

Upon completion of this rotation, the student radiographer will be able to demonstrate knowledge and understand the rationale for using radiation in the treatment of malignant and selected benign pathology. An acceptable level of competence has been obtained when the student is able to complete the following:

1. Describe the process of radiation production from different energy level therapy units.
2. Assist in positioning of patients for therapy treatment.
3. Recognize mold room and distinguish how lead blocks are formed for each treatment port and patient.
4. Identify the dosimetry room and how treatment plans are created.
5. Identify all equipment utilized in radiation therapy.
6. Demonstrate professional behavior and patient care.
7. Interpret the patient's chart and how to correctly record treatments.
8. Recite terminology utilized in the therapy department.
9. Identify the simulation room and why/how patients are simulated.
10. Be able to duplicate operations of linear accelerators.
11. Identify how different energy level accelerators play a role in therapy.
12. Position and prepare for patient's port film.
13. Assist in the preparation of physical examinations.
14. Assist in storing, filing, and retrieving patient data.
15. Assist in attaching cones and filters as prescribed.

16. Identify with linear accelerators warm-ups.
17. Recognize the emergency equipment in the department.

### **Computed Tomography**

Upon completion of this rotation, the radiography student will be able to demonstrate knowledge and understand the rationale for using computed tomography to determine the presence of pathology. An acceptable level of competence has been obtained when the student is able to complete the following:

1. Turn on and warm up CT scanner.
2. Demonstrate an adequate knowledge of patient positioning for specific examinations.
3. Demonstrate ability to correlate patient information from the chart to the scan area.
4. Review cross sectional anatomy of the human body.
5. Demonstrate professional behavior and patient care.
6. Identify computer parts and operations.
7. Identify memory storage and permanent image formation.
8. Identify emergency equipment in CT department.
9. Identify contrast media(s) utilized in CT imaging.
10. Identify procedures to initiate the scan (obtain correct patient information, breathing instructions; prepare syringes for injection of media, etc.)
11. Identify pathology determined from CT scan.
12. Assist technologist in preparing and initiating scan.
13. Identify operations and type(s) of CT scanners.

### **Nuclear Medicine**

Upon completion of this rotation, the radiography student will be able to demonstrate knowledge and understand the rationale for using radiopharmaceuticals to demonstrate various normal and pathological anatomical areas. An acceptance level of competence has been obtained when the student is able to complete the following:

1. Describe the history and principles of nuclear medicine.
2. Describe and recognize the equipment utilized in nuclear medicine.
3. Identify the operations of each type of equipment in nuclear medicine.
4. Identify the basic computer operations of each type of equipment.
5. Identify with the digital equipment utilized.
6. Identify radioactive material used in nuclear medicine.
7. Identify the hot lab and its components (no radioactive materials are to be handled by the student in the hot lab).
8. Distinguish the radiation protection practices utilized in nuclear medicine.
9. Assist with patient positioning in various examinations.
10. Identify the basic camera operations and parts.
11. Identify emergency equipment and emergency plans.
12. Demonstrate professional behavior and patient care.
13. Identify the methods of organ localization by radiopharmaceutical injection or inhalation.
14. Assist with storage, filing, and retrieval of patient records.
15. Demonstrate a working knowledge of pathology and normal anatomy visualized in nuclear medicine.

### **Ultrasound**

Upon completion of this rotation, the radiography student will be able to demonstrate knowledge and understand the rationale for using ultrasound to demonstrate various anatomical areas and pathology. An acceptable level of competence has been obtained when the student is able to complete the following:

1. Describe ultrasound and the history behind it.
2. Describe the different types of transducers in relationship to design and specific exams.
3. Explain film type utilized.
4. Describe Real Time imaging.
5. Describe the B scanner and list exams where it is employed.
6. List the exams which ultrasound is employed.
7. Explain why oil or jelly is utilized.
8. Identify equipment utilized in ultrasound.
9. Identify emergency equipment in the ultrasound department.
10. Demonstrate professional behavior and patient care.
11. Identify obvious pathology determined by ultrasound.
12. Identify patient directions given prior to a procedure being performed.
13. Assist with patient care and positioning.
14. Identify portable ultrasound equipment and its capabilities.

15. Correlate the patient's chart in regard to the examination performed.
16. Assist in storage, filing, and retrieval of patient data.

**Cardiac Catheterization**

Upon completion of this rotation, the radiography student will be able to demonstrate knowledge and understand the rationale for using catheters and contrast medias to demonstrate the heart and great vessels. An acceptable level of competence has been attained when the student is able to complete the following:

1. Explain the different procedures performed.
2. Identify all equipment utilized in the Cardiac Cath. Lab.
3. Identify aseptic techniques utilized.
4. Identify items included on a sterile tray.
5. Identify catheter types, sizes, lengths, and identify each with a particular exam.
6. Load the high pressure injector with correct type and volume of contrast media and prepare for injection.
7. Set control panel for fluoroscopy and cine runs.
8. Identify the heart and great vessel anatomy.
9. Load and unload image receptors/cine film.
10. Identify angioplasty principles.
11. Identify contrast medias utilized in cardiac catheterization.
12. Recognize and identify patient positioning and the normal anatomy demonstrated.
13. Identify pathology demonstrated on cine film.
14. Demonstrate professional behavior and good patient care.
15. Identify all emergency equipment available in the Cardiac Cath. Lab.
16. Identify run times for cine exposures.
17. Identify digital imaging capabilities in the Cardiac Cath. Lab.

**Magnetic Resonance Imaging**

Upon completion of this rotation, the radiography student will be able to demonstrate knowledge and rationale of MRI scanning. An acceptable level of competence has been reached when the student is able to complete the following:

1. Understand the principles and history behind MRI.
2. Demonstrate an adequate knowledge of patient positioning for specific exams.
3. Demonstrate an ability to correlate patient information from the chart to the area to be scanned.
4. Review cross-sectional anatomy of the human body.
5. Operate tape drive and archive patient information.
6. Demonstrate professional behavior and good patient care.
7. Identify the memory storage and permanent image formation.
8. Distinguish between T1 and T2 weighted scans.
9. Identify contrast medias utilized in MRI.
10. Identify emergency equipment available in MRI.
11. Identify procedures to initiate the scan (obtain the correct patient information, breathing instructions, prepare syringe for injection of media, etc.).
12. Recognize normal anatomy and pathology demonstrated on MRI scan.
13. Assist the technologists in preparing and scanning the patient.
14. Identify the operations and types of MRI scanners.

**Magnetic Resonance training and screening is required for all students!**

**REPEAT RADIOGRAPH POLICY FOR CLINICAL EDUCATION CENTERS "NO REPEAT RADIOGRAPHS ARE TO BE MADE BY RADIOGRAPHY STUDENTS EXCEPT IN THE PRESENCE OF A QUALIFIED PRACTITIONER. "**

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Any student attempting or performing a repeat radiograph on a patient without the presence of a qualified radiographer may risk violating the American Registry of Radiologic Technologist's Code of Ethics section VII, stating "The radiologic technologist uses equipment and accessories, employs techniques and procedures, perform services in accordance with an accepted standard of practice, and demonstrates expertise in minimizing radiation exposure to the patient, self and other members of the health care team." Additional violations of the ARRT Rules of Ethics may also be applicable. For additional information, visit either [www.arrt.org](http://www.arrt.org) or [www.asrt.org](http://www.asrt.org). All students are required to follow these principles during their tenure in the program, and are encouraged to utilize these standards throughout their professional career.

Students violating the "REPEAT" policy will:

- 1st Offense Clinical Probation (6 weeks) for failure to comply with clinical policy
- 2nd Offense Dismissal from the Radiologic Technology Program

This policy exists for all levels of clinical education training while in the Wallace College Radiologic Technology Program.