



## **Radiographic Practicum V (RADR 2367)**

**Credit:** 3 semester credit hours (24 hours lab)

**Prerequisite/Co-requisite:** RADR2366

### **Course Description**

Radiologic Technology Course covering practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Students make standard radiographs under close supervision by a qualified radiologic technologist. Course requires 24 hours /week in clinical participation.

### **Required Textbook and Materials**

No textbook is required for this clinical course.

### **Course Objectives**

Upon completion of this course, the student will be able to...

- Use their creative thinking, problem solving, and decision making skills to properly serve the patient by:
  - a. visualizing the exam
  - b. selecting all necessary equipment
  - c. acquiring a complete history
  - d. adjusting technical factors for the specific patient
  - e. organizing the exam to minimize steps and patient movement
  - f. using proper radiation protection practices
- 1. Demonstrate positioning skills, knowledge of protocols, exposure factors, body systems, communication skills and radiation protection while performing procedures on atypical patients.
- 2. Demonstrate the cognitive and psychomotor skill necessary to perform the terminal competencies.
- 3. Demonstrate the proper use of annotations, flipping and analyze digital images for diagnostic quality.
- 4. Understand exposure index ranges by calculating correct technique when exposure index is out of range.
- 5. Employ problem solving skills by selecting and adjusting technical factors while understanding their effects on data acquisition and dynamic range.
- 6. Demonstrate the ability to perform radiographic examinations on trauma, difficult, or uncooperative patients. They will demonstrate creative thinking ability, proper decision making and problem solving skills by:
  - a. appropriately evaluating the patient
  - b. properly using immobilization devices and positioning aids when needed.

- c. accurately manipulating the technical factors to eliminate involuntary motion or to compensate for pathological conditions or injury.
  - d. correctly adjusting the radiographic equipment when employing alternate positioning methods due to restrictions such as movement of patient, anatomical part, or space limitations.
  - e. properly using safety techniques and radiation safety principles despite the difficulties encountered with such patients.
7. Perform portable and surgical radiography. They will demonstrate creative thinking ability, proper decision making and problem solving skills by
  - a. appropriate patient evaluation
  - b. demonstration of knowledge and expertise in adapting positioning skills for bedside and surgical radiography.
  - c. adjustment of technical factors within the limitations of the mobile equipment for body habitues, pathology, presence of a wet or dry cast, etc.
  - d. demonstration of knowledge in radiation protection by using proper collimation, distance, and protective shielding for both patient and technologist
  - e. demonstrating proper aseptic technique when preparing mobile equipment for a sterile surgical procedure or performing an examination on an isolation patient.
8. Demonstrate with **indirect supervision** the following skills while on off hour rotations:
  - a. successfully performing radiographs on difficult patients, ie. E.R., trauma, uncooperative patients, etc.
  - b. make independent judgments in the areas of technique, positioning, restraining devices, and film quality using reasoning skills.
  - c. build self-esteem and self-management skills.
  - d. visualize the exam, organize information, and pre-set the examination room by selecting proper equipment and materials that may be needed prior to admitting the patient to the examination room.
9. Work as a team with first year radiology students on Fridays. They should demonstrate leadership skills and assist in orienting the new students into the field of radiology.
10. Serve a diverse population.
11. Trouble-shoot errors, correct problems, and maintain equipment.
12. Produce diagnostic examinations.
13. Show professional judgment and initiative.

### **Course Outline**

1. Creative thinking, problem solving, and decision making skills
  - a. visualizing the exam
  - b. selecting all necessary equipment
  - c. acquiring a complete history
  - d. adjusting technical factors for the specific patient

- e. organizing the exam to minimize steps and patient movement
- f. using proper radiation protection methods
2. Atypical patients
  - a. positioning skills
  - b. protocols
  - c. exposure factors
  - d. body systems
  - e. communication skills
  - f. radiation protection
3. Examination of trauma, difficult, or uncooperative patients.
4. Patient evaluation
  - a. Immobilization devices and positioning aids
  - b. Adjustment of technical factors.
  - c. Alternate positioning methods
  - d. Proper safety techniques and radiation principles
5. Portable and surgical radiography
  - a. Adapting positioning skills for bedside and surgical radiography.
  - b. Adjustment of technical
  - c. Radiation protection
  - d. Aseptic technique
6. Special assignments
  - a. Attendance
  - b. Professional appearance
  - c. The imaging process
  - d. Communication/intertaction with others
  - e. Examinations performed in the specialty area
7. Off-hour rotations
  - a. Performing radiographs on difficult patients
  - b. Technique, positioning, restraining devices, and film quality
  - c. Self-esteem and self-management skills.
8. Teamwork
  - a. leadership skills
  - b. orientation of the first year students
9. Working with a diverse population.
10. Film critique lessons
  - a. Anatomy
  - b. Common pathologic or abnormal conditions
11. Troubleshooting errors, correcting problems, and maintaining equipment.

**TERMINAL COMPETENCIES:**

Students successfully completing the Radiologic Technology Program at Lamar Institute of Technology will have mastered the following terminal competencies before graduation.

1. Communicate effectively with patients and healthcare professions verbally, nonverbally and in written medical communication.
2. Demonstrate the ability to perform life support procedures such as CPR.

3. Demonstrate knowledge of infection control and practice standard precautions.
4. Apply knowledge of basic nursing procedures and body mechanics when interacting with diverse populations.
5. Demonstrate an understanding of human anatomy and physiology and the way in which each system is affected by pathological processes.
6. Demonstrate knowledge of technical factors and equipment manipulation necessary to produce diagnostically acceptable radiographs.
7. Exhibit proper operation of medical imaging equipment and utilization of accessory devices.
8. Position patients using acceptable positioning principles and techniques.
9. Recognize emergency patient conditions and adapt positioning and technical factors to accommodate those conditions.
10. Understand the principles of radiation biology and the effects produced by ionizing radiation.
11. Practice radiation protection for oneself and the patient.
12. Possess basic understanding of contrast media administration and adverse reactions occurring with administration.
13. Recognize safe limits of equipment operation and troubleshoot equipment malfunctions.
14. Utilize basic knowledge of darkroom chemistry to develop radiographs, analyze radiographs, and take necessary steps to correct errors.
15. Demonstrate basic knowledge of quality control techniques.
16. Evaluate medical radiographs for technical qualities. Take necessary steps needed to correct performance.
17. Demonstrate an understanding of exposure index range by calculating correct technique when exposure index is out of range.
18. Demonstrate competence in analyzing digital images for diagnostic quality.
19. Exhibit the ability to retrieve images from PACS and print them to hard copy or other media (CD, DVD etc.)
20. Competently performs operations of a digital image plate reader and/or direct digital equipment.
21. Show proper use of annotations, image rotation and flipping.
22. Demonstrate empathy for the patient.
23. Demonstrate independent judgement in the performance of work assignments.
24. Support the professional code of ethics and comply with the professional scope of practice.
25. Competently perform a full range of radiographic procedures on children and adults.
26. Demonstrate the ability to adequately perform radiographs on difficult patients using both fixed and portable equipment.
27. The student will demonstrate during off-hour rotations the following:
  - a. Successfully performing radiographs on difficult patients, i.e., trauma uncooperative patients, etc.
  - b. Make independent judgements in the areas of technique, positioning and film quality
  - c. Demonstrate speed and accuracy from start to finish when radiographing

patients.

### Grading System

- 95 – 100 = A
- 87 – 94 = B
- 80 – 86 = C
- 70 – 79 = D
- 00 – 69 = F

### Course Evaluation

- 1. Task Analysis (6) 43%
- 2. Clinical Behavior Report(2) 43%
- 3. Written Tests(3-6) & Special Assignment Evaluation 14%

### Course Requirements

- 1. Successfully complete six (6) **Task Analysis**; a minimum of one from each of the below listed categories.
  - a. Trauma or difficult patient
  - b. Contrast examinations
  - c. Headwork
  - d. Spines

Part of the task analysis process is to monitor and correct their performance if repeat radiographs are required. These task analysis are at the discretion of your instructor and they may choose the examinations you are to perform. **A student may be given the opportunity to repeat 1 task analysis during a long semester under the following conditions**

- Repeating the task analysis will change the student's letter grade for the semester
- Repeating the task analysis will not prohibit another student from completing the required Task Analysis.

No task analysis may be repeated after the date assigned by the instructor or after the last clinical behavior report.

- 2. Receive at least 2 **Clinical Behavior Reports**. They will demonstrate affective skills needed by a professional like: integrity, time management, sociability, and responsibility.
- 3. Demonstrate critical thinking, problem solving and cognitive skills on **written tests**. Students will have at least three film critique assignments which may be assigned through Blackboard.
- 4. Students will rotate through evening and weekend shifts. This will be evaluated using the **Special Assignment Evaluation**.

Special Assignment Evaluations must be turned in by the assigned date or a grade of zero will be given for that evaluation.

Failure to successfully complete the course requirements will result in an "I" (Incomplete) in the clinical course. An incomplete must be removed by the next long semester or the (I) will be recorded as an (F) and the student will be required to repeat the clinical course.

**\*\*\*a minimum of 80% is required for successful completion of this course\*\*\***

### **Course Schedule**

This course requires 24 hours per week in the assigned clinical facility. Weekly rotations can be found on the clinic schedule distributed by the instructor.

### **Individual Instructor Requirements**

<b>Instructor Name</b>	<b>Office</b>	<b>Phone</b>	<b>E-mail</b>
Brenda Barrow	232 MPC	880-8848	brenda.barrow@lit.edu
Lisa Bland	230MPC	839-2040	lisa.bland@lit.edu
Gina McMahon	234 MPC	839-2936	gina.mcmahon@lit.edu
Sheryl Nance	229 MPC	880-8864	<a href="mailto:sheryl.nance@lit.edu">sheryl.nance@lit.edu</a>
Samantha Robinson	233 MPC	880-1851	samantha.robinson@lit.edu
April Smith	234 MPC	839-2936	alsmith1@lit.edu

### **Office hours**

Clinical instructors are available to assist students at the clinical affiliates from 7:00 – 3:00.

### **BlackBoard**

This course is Web Enhanced. All students will be required to login to **Blackboard at least once a week** to check e-mail and complete assignments. Assignments will be posted throughout the semester. It is your responsibility to meet the deadlines.

**Late work will not be accepted. If you are unable to meet a deadline in this course send an e-mail and we will discuss your options.**

### **ATTENDANCE POLICY:**

1. For students in the radiology program to acquire the necessary clinical competency outlined in our curriculum, it is necessary that students complete all assigned clinical hours. Therefore, students missing **any** clinical hours will be required to make up hours missed at the end of the semester. Time will be made up after the **last scheduled** clinic day. Students not completing make up time before the grades are due for the semester, will receive an incomplete (I) in the clinical course.
2. Any absence while assigned to a specialty area or off-hour rotation will require the clinical instructor to adjust the clinical schedule to assure all students meet the accreditation guidelines. For example, a student missing a day when assigned to an evening shift will have one of the future clinical days changed to an evening shift. The schedule adjustments will be made by the clinical instructor at their discretion.
3. Students who have tardy time totaling at least one (1) hour will be required to

make up all the missed time at the end of the semester. When a student is tardy he/she will not be allowed to make up the time that day. If a student leaves clinic early for any reason, it will be added to the total tardy time.

4. Students who miss a total of 24 hours during a Fall or Spring semester or 21 hours in the Summer semester\* **will receive a warning with the Disciplinary Action Form (DAF). When a fourth day is missed a DAF will be filled out and the Student's clinical grade will be lowered one full letter grade. Each subsequent absence may result in dropping of a letter grade pending a review by department committee.**
5. Students who exhibit excessive tardiness will receive a warning with the DAF. Further tardies will result in disciplinary action which may include an attendance contract and/or lowering of the student's clinical grade.
6. Extenuating circumstances will be taken into account. Extenuating circumstances include funeral of immediate family, maternity, hospitalizations etc.
7. Students who fail to follow proper call in procedures when unable to attend clinic will have their clinic grade lowered one full letter grade for **EACH** day they fail to follow proper call in procedure.

#### **Disabilities Statement**

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator, Jamie Fox, at (409) 880-1737 or visit her office located in the Cecil Beeson Building, room 116B.