

COURSE OUTLINE

RAD-121

Radiographic Procedures II

3 Credit Hours

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Description

Continued studies of radiographic procedures in greater depth with the addition of radiographic examinations focusing on the mobile radiography, vertebral column, bony thorax, digestive, urinary systems, biliary and pediatric radiography. Continued emphasis on exposure parameters and image receptors will be given throughout the course. An introduction to contrast media types, and reactions will be covered. Basic skull positioning will also be covered focusing on routine procedures. Focus will be placed on automatic processing, exposure charts, and a review of sensitometry. Additional emphasis will be placed on patient management and education with the introduction of journal writing in an effort to build strong oral and written communication skills. Journal writing should enhance the student's self-confidence and self-esteem in their patient interactions.. Prerequisites: RAD-111/112. Corequisites: RAD-122/123.

Overall Course Objectives

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

1. List and define terminology used in patient and part position to perform radiographic examinations of the bony thorax, the spine, biliary system, gastrointestinal system, urinary system, cranium, and mobile radiography.
2. Name and identify, from illustrations and radiographs, the radiographically significant anatomy of the bony thorax, the spine, abdomen and biliary system, gastrointestinal system, urinary system, and cranium.
3. Name and describe the routine positions required to perform radiographic examinations of the bony thorax, the spine, abdomen and biliary system, gastrointestinal system, urinary system, and cranium.
4. Demonstrate the routine positions required to perform radiographic examinations of the bony thorax, the pelvis and hips, the spine, abdomen and biliary system, gastrointestinal system, urinary system, and cranium in the lab with 80% accuracy.
5. Evaluate and suggest corrections to radiographs of the routine positions of the bony thorax, the pelvis and hips, the spine, abdomen and biliary system, gastrointestinal system, urinary system and cranium with reference to positioning, anatomy demonstrated, and image quality.
6. Identify and manipulate appropriate devices and locks on radiographic equipment necessary to perform procedures of the bony thorax, the spine, abdomen and biliary system, gastrointestinal system, urinary system, and cranium.
7. List types, names, and uses of contrast media used in radiography of the digestive and urinary systems.
8. Describe methods and techniques for the administration of various types of contrast media.
9. Describe the basic steps in venipuncture.
10. Correctly identify the different types of body habitus and describe variations in technique and positioning for each relative to the gastrointestinal, urinary and biliary systems.
11. Demonstrate in lab and clinic safe radiation practices for the patient, self, and others.
12. Describe an effective film critique method.
13. Use an effective film critique method.
14. Explain the process of film development.
15. Identify the primary chemicals and their function for the developer and fixer agents.
16. Describe the functions of the subsystems of an automatic processor.
17. Discuss the design of a radiograph darkroom as it relates to the affect of image receptors on image quality and automatic processing.

18. Recognize and identify various radiographic artifacts.
19. Design a computer generated exposure chart for contrast related exams.
20. Differentiate and demonstrate applications of pediatric radiographic examinations using appropriate techniques and restraining devices.
21. Define tomography body section radiography.
22. Give the relationship between and amplitude rate of tube travel and determine time of exposure.
23. List the directional movements of the tomographic unit.
24. Explain tomographic motion blur.
25. Discuss the relationship between tomographic angle and section thickness.
26. Describe the various types of mobile radiographic systems.
27. Describe radiation protection as it relates to mobile radiography.
28. Describe means of adapting various radiography exams to the trauma or bedside patient.
29. Describe the use of grids as they relate to mobile radiography.
30. Define and use appropriately medical terminology as it relates to the course content.
31. Describe in journal writing format patient care scenarios on a daily clinical basis (1 per clinical day).

Major Topics

- I. Anatomy and Positioning
 - Esophagus, Stomach, Small Intestine
 - Small Intestine/Large Intestine
 - Urinary System
 - Biliary System
 - Bony Thorax
 - Cervical and Thoracic Spine
 - Lumbar Spine, Sacrum and Coccyx
- II. Tomography
- III. Automatic Processing
- IV. Artifacts

Course Requirements

A combination of Lecture and Energized Lab experiences will be utilized to enable the student to comprehend the materials presented. All positioning learned in lecture will be practiced by students on each other during the lab period. Students will take appropriate radiographs on the phantom (when feasible), develop the radiographs, and critique each projection. In addition, the student will demonstrate proficient use of the laboratory energized X-ray equipment.

Attendance:

1. All students are required to attend all lecture and college laboratory assignments.
2. Lateness is considered unacceptable. In case of illness or unavoidable absences, it is the student's responsibility to get the missed material from the instructor or another student.

Other Course Information

Students will be given a computer project to be completed in the computer lab (Room 325) or on your own computer. This project will be to design an exposure chart for contrast media related studies. Students will be assigned on a rotating basis to provide a case study from their respective clinical site that correlates to the positioning studies being covered at the time in college lab/lecture. Students will be expected to perform clinical competency lab practical multiple times throughout the semester at their respective clinical sites (room selection to be determined to college faculty). Students will be expected to present samples of journal writings for peer discussion 5 times/semester during scheduled lecture classes.

This is a Radiologic Technology Core course.