

University of Arkansas – Fort Smith

5210 Grand Avenue

P. O. Box 3649

Fort Smith, AR 72913-3649

479-788-7000

General Syllabus

RADT 1112 Radiographic Procedures I

Credit Hours: 2 **Lecture Hours:** 1 **Laboratory Hours:** 2

Prerequisites: ENGL 1203 Composition I, MATH 1403 College Algebra or MATH 1404 College Algebra (Extended Format), CPR Certification (American Heart Association “CPR for Healthcare Providers” or American Red Cross “CPR for the Professional Rescuer”) CHEM 1303 Chemical Principles, and BIOL 2203/2201 Human Anatomy/Laboratory

Prerequisite or corequisite: BIOL 2213/2211 Human Physiology/Laboratory

Corequisites: RADT 1104 Introduction to Radiography and RADT 1124 Clinical Education I

Effective Semester: Fall 2015

I. Course Information

A. Catalog Description

Presents the principles of radiographic anatomy, positioning, and terminology necessary to perform standard radiographic procedures. Emphasis given to routine and specialty views of the chest and abdomen along with procedures of the wrist, hand and fingers.

B. Additional Information

II. Student Learning Outcomes

A. Subject Matter

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

1. List the three primary principles of radiation protection.
2. List specific methods of reducing patient, radiographer, and others' radiation exposure.
3. Explain the 10 day rule.
4. Discuss the As Low As Reasonably Achievable (ALARA) Principle
5. Define and demonstrate the anatomical position.
6. Define terms relating to body planes.
7. Given diagrams, identify body planes.
8. Given topographic landmarks, list the corresponding vertebrae.
9. List and describe the characteristics of each of the major body types.
10. Given diagrams, identify the body type illustrated.
11. Define and demonstrate terms related to general positioning.
12. List three general terms of positioning.
13. List and discuss the six primary elements in radiographic positioning.
14. Explain radiographic equipment manipulation
15. List the generic components of a radiographic system.

16. Describe the purpose of the collimator and its controls.
17. Describe the various types of radiographic tables and how they operate.
18. Identify major controls on the radiographic system control console.
19. Describe the various types of tube stands and how they can be manipulated.
20. Describe the various planes of x-ray tube movement and how they are controlled.
21. Explain the purpose of the upright wall Bucky system and cassette holder.
22. Discuss the concept of alignment of various radiographic system components.
23. Describe the types of mobile x-ray systems.
24. List and describe the anatomy of the **chest, upper airway, and bony thorax**
 - a) given drawings and radiographs, locate anatomic structures and landmarks.
 - b) explain the rationale for each projection.
 - c) explain the patient preparation required for each examination.
 - d) describe the positioning used to visualize anatomic structures.
25. List and identify the central ray location, film size, marker placement, and film placement.
26. Explain the protective measures that should be taken during each examination.
27. Recommend the technical factors for producing an acceptable radiograph for each projection.
28. State patient instructions for each projection.
29. Given radiographs, evaluate positioning for atypical or impaired patient to better demonstrate the anatomic area of interest.
30. List and describe the soft tissue and bony anatomy of the **abdomen**.
 - a) given drawings and radiographs, locate anatomic structures and landmarks.
 - b) explain the rationale for each projection.
 - c) explain the patient preparation required for each examination.
 - d) describe the positioning used to visualize anatomic structures.
31. Identify the quadrant in which abdominal organs are located.
32. Differentiate between the positioning and centering factors for an acute abdomen series and a routine supine and upright of the abdomen
33. Given radiographs, evaluate positioning and technical factors.
34. List and describe the bony anatomy of the **finger, thumb, hand, and wrist**.
 - a) given drawings and radiographs, locate anatomic structures and landmarks.
 - b) describe the positioning used to visualize the anatomic structures.
 - c) explain the rationale for each projection
35. List and identify central ray location for each projection.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills

Students will use analytical/critical thinking skills to draw conclusions and/or solve problems associated with positioning the patient for the chest, rib and abdominal radiographs.

Technological Skills

Students will use appropriate technology to efficiently access, communicate, analyze, and evaluate radiographic images of the chest, ribs, and abdomen.

Ethics

Student will apply ethical standards in relation to patient information.

III. Major Course Topics

- A. Radiation Protection
- B. Positioning Terminology
- C. Principles of Radiographic Positioning
- D. Radiation and Fluoroscopic Equipment
- E. Radiography of the Chest
- F. Radiography of the Abdomen
- G. Radiography of the Upper Extremities