



Basic Radiographic Procedures (RADR 1411)

Credit: 3 semester credit hours (3 hours lecture, 2 hours lab)

Pre-requisite: RADR 1309 Introduction to Radiography and Patient Care

Course Description

An introduction to radiographic positioning terminology, the proper manipulation of equipment, positioning and alignment of the anatomical structure and equipment, and evaluation of images for proper demonstration of basic anatomy.

Textbook and Materials

- Bontrager, Kenneth: *Radiographic Positioning and Related Anatomy* 8th edition, C.V. Mosby, 2010, ISBN# 979-0-323-08388-1
- #882 Scan-trons and pencils

Course Objectives

1. By the end of the semester of instruction the student will be able to:
2. Define radiographic positioning terms
3. Manipulate equipment
4. Perform basic level procedures in positioning
5. Align anatomical structures and equipment
6. Evaluate images
7. Have a basic understanding of radiation therapy
8. Demonstrate a basic understanding of pediatric radiography

Course Outline

By the end of the semester the student will be able to:

I. SKELETAL ANATOMY, POSITIONING NOMENCLATURE & BODY PLANES

- A. Understand general, systemic, and skeletal anatomy and physiology
- B. Identify the name and number of bones associated with the human body
 1. axial skeleton
 2. appendicular skeleton
- C. Identify specified bones by classification
 1. long bones
 2. short bones
 3. flat bones
 4. irregular bones
 5. sesamoid bones
- D. Identify the layers of bone
- E. Identify and explain bone development
- F. Identify and give examples of the classification of joints
 1. synarthrodial

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- 2. amphiarthrodial
- 3. diarthrodial
- G. Identify and demonstrate the common principles, rules of positioning, and various body positions
- H. Define and demonstrate relationship terms
- I. Define terms used to describe the human body
 - 1. body planes
 - 2. four body habitus types
 - 3. body cavities
 - 4. four quadrants
 - 5. nine regions

II. CHEST AND ABDOMEN ANATOMY AND POSITIONING

- A. Identify the anatomy landmarks of the chest and abdomen
- B. Identify the anatomical structure and function of the respiratory system
- C. Identify and explain the radiographic positions of the chest
 - 1. PA
 - 2. AP
 - 3. lateral
 - 4. Apical Lordotic
 - 5. Decubitus
- D. Identify and explain the radiographic positions of the abdomen
 - 1. AP
 - 2. Upright
 - 3. Decubitus
- E. Demonstrate the specific knowledge and skills associated with positioning of the chest and abdomen in a lab simulation

III. UPPER EXTREMITIES AND SHOULDER GIRDLE

- A. Identify the anatomical landmarks of the upper extremities and shoulder girdle
- B. Identify and explain the radiographic positions of the upper extremities and shoulder girdle
 - 1. hand
 - 2. wrist
 - 3. forearm
 - 4. humerus
 - 5. shoulder
 - 6. clavicle
 - 7. scapula
- C. Demonstrate the specific knowledge and skills associated with positioning of the upper extremities and shoulder girdle in a lab simulation

IV. LOWER EXTREMITIES AND PELVIC GIRDLE

- A. Identify the anatomical landmarks of the lower extremities and pelvis
- B. Identify and explain the radiographic positions of the lower extremities and pelvis
 - 1. foot
 - 2. calcaneus
 - 3. ankle

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4. lower leg
5. knee
6. femur
7. hip
8. pelvis
9. SI Joints

C. Demonstrate the specific knowledge and skills associated with positioning of the lower extremities and pelvis in a lab simulation

V. BONY THORAX

- A. Identify the anatomical landmarks of the bony thorax
- B. Identify and explain the radiographic positions of the bony thorax
 1. ribs
 2. sternum

C. Demonstrate the specific knowledge and skills associated with positioning of the bony thorax in a lab simulation

VI. VERTEBRAL COLUMN

- A. Identify the anatomical landmarks of the vertebral column
- B. Identify and explain the radiographic positions of the vertebral column
 1. cervical
 2. thoracic
 3. lumbar
 4. sacrum
 5. coccyx

C. Demonstrate the specific knowledge and skills associated with positioning of the vertebral column in a lab simulation

VII. PEDIATRICS

- A. Discuss the differences between adult and pediatric imaging
- B. Discuss the importance of identifying and reporting child abuse

VIII. RADIATION THERAPY

- A. Discuss the history of radiation therapy
- B. Identify different types of cancer treatment
 - a. Curative
 - b. Palliative
- C. Discuss the types of radiation therapy
 - a. External beam therapy
 - b. Brachytherapy
 - c. Chemotherapy

IX. TRAUMA

- A. List the types of trauma centers
- B. Describe special equipment used for trauma patients
- C. Discuss manipulation of equipment and positions for trauma patients

IX. FILM CRITIQUE

- A. Utilize critical thinking skills to critique radiograph for proper technique, patient positioning, and image appearance
- B. Utilize reasoning and problem solving skills to determine what must be done to the patient, tube, or film to correct certain errors demonstrated on radiographs

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Grading Scale

Numeric to letter grade conversion:

A = 93 - 100

B = 84 - 92

C = 77 - 83

D = 60 - 76

F = 0 - 59

*** A minimum of 77% is required for successful completion of this course!**

Course Evaluation

Written Exams (3) & Quizzes 60%

Laboratory Performance 15%

Comprehensive Final 25%

Students not completing all required laboratory assignments and practical evaluations with 80% will receive an incomplete in the course.

Course Requirements

- There will be three (3) major tests and a comprehensive final exam
- The numerical grade for the lab will be determined by averaging the three (3) lab practicals
- Quizzes will be utilized in this course. If a student misses a quiz **it may not** be made up. Quiz grades will be averaged for one (1) test grade. Students will be allowed to drop their **lowest** quiz grade at the end of the semester. If more than one quiz is missed a zero (0) will be given.
- Ten (10) points will be deducted from homework for each class it is late.

Course Policies

1. No food, drinks, or use of tobacco products in class.
2. Phones, headphones, and any other electronic devices must be turned off while in class.
3. Do not bring children to class.
4. Recording devices may be used except during test reviews and when otherwise stated by the instructor.
5. Lap top computers, I-pad...may be used to take notes during class but may not be used to "surf" the internet, look-up answers, nor anything not specifically related to note taking.
6. **Attendance policy:**

Each student is responsible for attending every class session. When it becomes necessary to miss a session, it is the responsibility of the **student** to contact the instructor and to inquire about assignments.

When the student has missed sufficient hours to cause a drop in grade points by missing class discussions, participation, quizzes, major test and or assignments, he/she will be notified in writing by the instructor concerning the possibility of failure in the course. The student should respond and meet the instructor for counseling.

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If a major test is missed, the student must request a make-up examination from the instructor. This test will be administered at the first day the student returns to class or at a time designated by the instructor. There will be an automatic **10 point reduction** on the make-up exam.

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 at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

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Course Schedule 12:30- 1:45 TUES/THURS

20 Aug	Introduction, General Anatomy & Terminology
25 Aug	CH 1: Introduction to Positioning
27 Aug	CH 2: Radiographic Anatomy & Positioning of the Chest
1 Sept	CH 3: Radiographic Anatomy & Positioning of the Abdomen
3 Sept	Film Critique Chest & Abdomen
8 Sept	CH 4: Radiographic Anatomy of the Upper Limb
10 Sept	CH 4: Radiographic Positioning of the Upper Limb
15 Sept	CH 5: Radiographic Anatomy & Positioning of the Proximal Humerus & Shoulder
17 Sept	Film Critique Upper Limb
22 Sept	Test I Chapters 1-5
24 Sep	Test Review
29 Sep	CH 6: Radiographic Anatomy of the Lower Limb
1 Oct	CH 6: Positioning of the Lower Limb
6 Oct	CH 7: Radiographic Anatomy & Positioning of the Pelvic Girdle & Femur
8 Oct	Film Critique Lower Limb
13 Oct	CH 10: Anatomy & Positioning of the Bony Thorax
15 Oct	Film Critique Bony Thorax & Test Review
20 Oct	Test II Chapters 6,7, & 10
22 Oct	Test Review
27 Oct	CH 8: Radiographic Anatomy & Positioning of the Cervical
29 Oct	CH 8: Radiographic Anatomy & Positioning of the Thoracic
3 Nov	CH 9: Radiographic Anatomy of the Lumbar, Sacrum & Coccyx
5 Nov	CH 9: Positioning of the Lumbar, Sacrum & Coccyx
10 Nov	Film Critique Spines & Test Review
12 Nov	Test III Chapters 8 & 9
17 Nov	Test Review
19 Nov	Trauma
24 Nov	Pediatrics
26 Nov	Thanksgiving
1 Dec	Radiation Therapy
3 Dec	Review
8 Dec	11:30-1:00 Comprehensive Final Exam