JEFFERSON COLLEGE

COURSE SYLLABUS

RAD115

Radiographic Positioning I

3 Credit Hours

Revised by: Janet E. Akers BS RT (R)(M)
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Kenny Wilson, Director, Health Occupation Programs
Dena McCaffrey, Dean, Career & Technical Education
RAD115 Radiographic Positioning I

I. CATALOGUE DESCRIPTION

A. Prerequisites: Acceptance to Radiologic Technology Program, Reading Proficiency

B. Credit hour award: 3

C. Description: This course consists of lecture and practicum in routine radiographic procedures for the chest, abdomen and extremity studies using relevant structural relationships, landmarks in radiographic positioning, types and sizes of image receptors used for each study, routine positioning and techniques of the region, medical terms, definitions, abbreviations and symbols. Radiographic anatomy, radiation protection and patient care skills are reinforced. This course is a portion of the five steps to clinical competency and must be completed with an 86% or better in both the lecture and practicum sections. (F)

II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURES

<table>
<thead>
<tr>
<th>Expected Learning Outcomes</th>
<th>Assessment Measures</th>
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<tbody>
<tr>
<td>Identify the major anatomical structures and positioning terms related to the chest, abdomen, upper &amp; lower extremities.</td>
<td>Written Assignments&lt;br&gt;Class Discussion/Activity&lt;br&gt;Written Examinations&lt;br&gt;Competency Testing</td>
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<tr>
<td>Compare traditional and non-traditional projections used for chest, abdomen, upper &amp; lower extremities.</td>
<td>Class Discussion/Activity&lt;br&gt;Written Examinations&lt;br&gt;Written Assignments&lt;br&gt;Competency Testing</td>
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<tr>
<td>Determine film size, exposure factors, central ray direction and/or angulation for radiographic procedures.</td>
<td>Class Discussion/Activity&lt;br&gt;Written Examinations&lt;br&gt;Written Assignments&lt;br&gt;Competency Testing</td>
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<tr>
<td>Demonstrate, in the lab, an understanding of pre-examination patient criteria practices for chest, abdomen, upper &amp; lower extremities.</td>
<td>Class Discussion/Activity&lt;br&gt;Written Examinations&lt;br&gt;Written Assignments&lt;br&gt;Competency Testing</td>
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<tr>
<td>Demonstrate, in the lab, radiation safety protection practices utilized in radiographic procedures.</td>
<td>Class Discussion/Activity&lt;br&gt;Written Examinations&lt;br&gt;Written Assignments&lt;br&gt;Competency Testing</td>
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Identify basic positioning terms and body movements.

Identify the anatomical structures visible on radiographs of the chest, abdomen, upper & lower extremities.

Class Discussion/Activity
Written Examinations
Written Assignments
Competency Testing

III. OUTLINE OF TOPICS

A. Preliminary Steps in Radiography
   1. Image Receptors (IR)
   2. Radiographic Quality Factors
   3. Image Display
   4. Basic Patient Care
   5. Care of Examination Room
   6. Motion
      i. Involuntary
      ii. Voluntary
   7. Image Identification (ID)
   8. IR placement
   9. Central Ray Direction
   10. Source to Image Distance (SID)
   11. Basic Radiation Protection
   12. Introduction to Digital Imaging
      i. Computerized Radiography (CR)
      ii. Digital Radiography (DR)
   13. Introduction to Exposure Technique
   14. Pre-Exposure Instructions

B. General Anatomy and Radiographic Positioning Terminology
   1. Introduction
   2. General Anatomy
   3. Definition of Terms
   4. Body Planes
   5. Body Cavities
   6. Divisions of Abdomen
      i. Quadrants
      ii. Regions
   7. Body Habitus
   8. Osteology
      i. Bone Function
      ii. Skeletal Divisions
      iii. General Bone Features
      iv. Bone Development
      v. Classifications of Bones
9. Bone Markings & Features
   i. Processes & Projections
   ii. Depressions

10. Anatomic Relationship Terms

11. Radiographic Positioning Terminology

12. Essential Projections

13. Positions

14. Body Movement Terminology

15. Medical Terminology

C. Thoracic Viscera

1. Anatomy Review
   i. Body Habitus
   ii. Thoracic Cavity
   iii. Respiratory System
       1. Trachea
       2. Bronchi
       3. Alveoli
   iv. Lungs
   v. Mediastinum

2. General Procedural Guidelines
   i. Patient preparation
   ii. General patient position
   iii. IR size
   iv. SID
   v. ID markers
   vi. Radiation protection
   vii. Patient instructions

3. Essential Projections: Chest, Lungs & Pleurae

D. Digestive System: Abdomen, Biliary Tract

1. Anatomy Review
   i. Digestive System
   ii. Abdominopelvic cavity
   iii. Liver and Biliary System
   iv. Gallbladder

2. General Procedural Guidelines
   i. Patient preparation
   ii. General patient position
   iii. IR size
   iv. SID
   v. ID markers
   vi. Radiation protection
   vii. Patient instructions

3. Essential Projections: Abdomen
   i. Three-way abdomen or acute abdominal / Obstruction series
   ii. Two-way abdomen series / AP, supine and upright positions
1. Positioning Considerations
   iii. AP, left lateral decubitus position

1. Positioning Considerations

E. Upper Extremity:
   1. Anatomy Review
      i. Hand & Fingers
         1. Divisions
            a. Phalanges
            b. Metacarpals
            c. Carpals
      2. Articulations

2. General Procedural Guidelines
   i. Patient preparation
   ii. General patient position
   iii. IR size
   iv. SID
   v. ID markers
   vi. Radiation protection
   vii. Patient instructions

3. Essential Projections: Digits 2-5
   i. PA
      1. Positioning Considerations
   ii. Lateral
      1. Positioning Considerations
   iii. PA oblique
      1. Positioning Considerations

4. Essential Projections: Thumb
   i. AP
      1. Positioning Considerations
   ii. Lateral
      1. Positioning Considerations
   iii. PA oblique
      1. Positioning Considerations

5. Essential Projections: Hand
   i. PA
      1. Positioning Considerations
   ii. Lateral
      1. Lateral in extension position
         a. Positioning Considerations
      2. Fan lateral position
         a. Positioning Considerations
   iii. PA oblique
      1. Positioning Considerations

6. Essential Projections: Wrist
   i. PA
      1. Positioning Considerations
ii. Lateral
   1. Positioning Considerations

iii. PA oblique
   1. Positioning Considerations

iv. PA projection in ulnar deviation position
   1. Positioning Considerations

7. Anatomy Review
   i. Forearm, Elbow, and Humerus
      1. Forearm
         a. Ulna
         b. Radius
      2. Elbow
      3. Humerus

8. General Procedural Guidelines
   i. Patient preparation
   ii. General patient position
   iii. IR size
   iv. SID
   v. ID markers
   vi. Radiation protection
   vii. Patient instructions

9. Essential Projections: Forearm
   i. AP
      1. Positioning Considerations
   ii. Lateral
      1. Positioning Considerations

10. Essential Projections: Elbow
    i. AP
       1. Positioning Considerations
    ii. Lateral
       1. Positioning Considerations
    iii. AP oblique
       1. Medial rotation position
          a. Positioning Considerations
       2. Lateral rotation position
          a. Positioning Considerations

11. Essential Projections: Humerus
    i. AP
       1. Positioning Considerations
    ii. Lateral
       1. Positioning Considerations

F. Shoulder Girdle:
   1. Anatomy Review
      i. Shoulder Girdle
      ii. Shoulder
      iii. Clavicle
iv. Scapula

2. General Procedural Guidelines
   i. Patient preparation
   ii. General patient position
   iii. IR size
   iv. SID
   v. ID markers
   vi. Radiation protection
   vii. Patient instructions

3. Essential Projections: Shoulder
   i. AP projections
      1. Internal rotation
         a. Positioning Considerations
      2. External rotation
         a. Positioning Considerations
      3. Neutral position
         a. Positioning Considerations

G. Lower Extremity:
   1. Anatomy Review
      i. Toes, Foot, Calcaneus, and Ankle
         1. Foot & Ankle
            a. Phalanges
            b. Metatarsals
            c. Tarsals
            d. Calcaneus
            e. Talus
            f. Cuboid
            g. Cuneiforms
      2. Toes & Foot
      3. Ankle Joint

2. General Procedural Guidelines
   i. Patient preparation
   ii. General patient position
   iii. IR size
   iv. SID
   v. ID markers
   vi. Radiation protection
   vii. Patient instructions

3. Essential Projections: Toes
   i. AP or AP axial
      1. Positioning Considerations
   ii. AP oblique
      1. Positioning Considerations
   iii. Lateral (mediolateral or lateromedial)
      1. Positioning Considerations
4. Essential Projections: Foot  
   i. AP or AP axial  
      1. Positioning Considerations  
   ii. AP oblique  
      1. Positioning Considerations  
   iii. Lateral (mediolateral)  
      1. Positioning Considerations  
5. Essential Projections: Calcaneus  
   i. Axial (plantodorsal)  
      1. Positioning Considerations  
   ii. Lateral (mediolateral)  
      1. Positioning Considerations  
6. Essential Projections: Ankle  
   i. AP  
      1. Positioning Considerations  
   ii. Lateral (mediolateral)  
      1. Positioning Considerations  
   iii. AP oblique  
      1. Ankle  
         a. Positioning Considerations  
      2. Mortise joint  
         a. Positioning Considerations  
   iv. Lateral  
      1. Positioning Considerations  

IV. METHOD(S) OF INSTRUCTION  

This course is taught using a variety of instructional methods, which include but are not limited to interactive lectures, computer presentations, group activities and exercises, videos, supplemental handouts and student presentations. Students are expected to be ACTIVE participants in the learning process. Students are expected to read the assigned readings prior to scheduled class meetings and come to class prepared to actively participate in all activities.  

V. REQUIRED TEXTBOOK(S)  


VI. REQUIRED MATERIALS
A. A computer with internet access and basic software to include Word and Power Point (available through Jefferson College labs)
B. Course homepage available through Blackboard
C. Index card holder/binder, Binder, paper, pens, pencils with erasers and highlighters

VII. SUPPLEMENTAL REFERENCES
A. Class Handouts
B. Library Resources
   1. Textbooks
   2. Periodicals
   3. Films On Demand Videos
C. Internet Resources
   1. On-line references
   2. Textbook companion website

VIII. METHOD OF EVALUATION (basis for determining course grade)

Assignments will consist of worksheets, textbook reading, review questions and other activities to enhance the learning experience.

Evaluation tools will include written and oral communication projects, class attendance/participation, homework assignments, and exams.

GRADES—Grades will be based on the percentage of total points earned out of total points possible for this semester. The assignments will vary in the number of possible points based upon amount of work involved and complexity of material.

A final semester grade of 86% or above must be achieved in both the classroom and lab sections of this course to successfully complete this course.

EXAMS—All exams with scores less than 86% must be retaken until a score of 86% or above is achieved to complete course requirements. The original score will be used to figure the semester grade. The student will be allowed to retake an exam a maximum of two times. If the student has not passed an exam within the three designated attempts, the student will present to the review board and may be dismissed from the program. The student must contact the instructor prior to any absence to make arrangements for retesting. Until course requirements are met, the final grade will be an incomplete.

If an exam is not taken at the scheduled time and arrangements for a make-up exam have not been made prior to the designated exam time, the grade for that exam will be zero. No make-up exam will be considered unless the instructor is personally notified prior to the absence. If a student arranges to take the exam at other than the scheduled time, 5% will be deducted from the grade on that exam. Make-up exams are scheduled at the convenience of the instructor.
Student’s grade will also be based on participation in class and attendance.

ASSIGNMENTS - In order to be prepared for each class meeting, the student should complete each homework assignment prior to the following class meeting.

Grading Scale: *(Jefferson College Radiologic Technology Program’s)*
- A= 100-92%
- B= 91.9-86%
- C= 85.9-80%
- D= 79.9 -70%
- F= 69.9 and below
- I= Incomplete
- W= Excused withdrawal from course

IX. ADA AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Library; phone 636-481-3169).

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook (see College website, http://www.jeffco.edu).

XI. ATTENDANCE STATEMENT

Students earn their financial aid by regularly attending and actively participating in their coursework. If a student does not actively participate, he/she may have to return financial aid funds. Consult the College Catalog or a Student Financial Services representative for more details. Student’s grade will also be based on participation in class and attendance.

XII. OUTSIDE OF CLASS ACADEMICALLY-RELATED ACTIVITIES

The US Department of Education mandates that students be made aware of expectations regarding coursework to be completed outside the classroom. Students are expected to spend substantial time outside of class meetings engaging in academically-related activities such as reading, studying, and completing assignments. Specifically, time spent on academically-related activities outside of class combined with time spent in class meetings is expected to be a minimum of 37.5 hours over the duration of the term for each credit hour.