JEFFERSON COLLEGE
COURSE SYLLABUS

RAD145
Radiographic Positioning IV
3 Credit Hours

Revised by: Janet E. Akers BS RT (R)(M)
Date: September 26, 2013

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Dena McCaffrey, Dean, Career & Technical Education
RAD145 Radiographic Positioning IV

I. CATALOGUE DESCRIPTION

A. Prerequisites: Acceptance to Radiologic Technology Program, and reading proficiency.

B. Credit hour award: 3

C. Description: This course consists of lecture and practicum in advanced imaging techniques and approaches for imaging adult, pediatric and geriatric trauma/emergency radiography, routine pediatric studies, angiographic and interventional procedures, digital imaging and computer tomography as well as mobile and operating room equipment and procedures using relevant structural relationships, anatomical landmarks in radiographic positioning, types and sizes of image receptors used for each study, routine and non-routine positioning and techniques of the region, body planes and lines, medical terms, definitions, abbreviations and symbols. Radiographic anatomy, radiation protection and patient care skills are reinforced. The student will evaluate radiographic image quality in simulated clinical conditions. 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. (S)

II. EXPECTED LEARNING OUTCOMES/CORRESPONDING ASSESSMENT MEASURES

<table>
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<tr>
<th>Expected Learning Outcomes</th>
<th>Assessment Measures</th>
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<tr>
<td>Determine bony anatomy and landmarks for positioning trauma, pediatric and Operating Room (OR) procedures.</td>
<td>Written Assignments</td>
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<td>Class Discussion/Activity</td>
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<td>Written Examinations</td>
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<td>Competency Testing</td>
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<td>Differentiate positioning strategies for trauma, pediatric and OR studies.</td>
<td>Class Discussion/Activity</td>
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<tr>
<td>Determine film size, exposure factors, central ray direction and/or angulations for radiographic procedures.</td>
<td>Class Discussion/Activity</td>
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<td>Define the proper use of immobilization methods relevant for all exams.</td>
<td>Class Discussion/Activity</td>
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<td>Demonstrate, in the lab, radiation safety protection practices utilized in radiographic procedures.</td>
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Define radiographic equipment and supplies for angiographic and interventional studies.

Class Discussion/Activity
Written Examinations
Written Assignments
Competency Testing

III. OUTLINE OF TOPICS
A. Medical Emergencies
   1. Terminology
   2. Emergency equipment
   3. Patient Considerations
      i. Patient Assessment
         1. Continuity of patient care during imaging procedures
         2. Risk Reduction
         3. Guidelines to follow before attempting imaging procedures
            a. Enlist patient’s help and cooperation
            b. C-Spine clearance
            c. Removal of bandages, splints or cervical collars
      ii. Trauma Guidelines, Comfort/Immobilization of Body Part
         1. Communication
      2. Immobilization techniques
      iii. Universal Precautions
      iv. Radiation Safety
B. Room & Equipment Considerations
   1. Mobile Radiography
      i. Transmission-Based Precautions
      ii. Radiation Safety & Protection
      iii. Change of SID (source-to-image distance)
      iv. Tube angulation
      v. Horizontal Beam
      vi. Grids
   2. Emergency Department
      i. Equipment
      ii. Exposure Factors
      iii. Radiation Safety & Protection
      iv. Pt. Care Considerations
      v. Grids
   3. Operating Room
      i. OR Team
      ii. Attire
      iii. Equipment Use & Cleaning
         1. Image Intensifier
         2. Locks
      iv. Radiation Safety & Protection
C. Trauma
   1. Head injuries
   2. Spinal injuries
   3. Extremity fractures
   4. Pediatric Trauma
D. Specialty views
   1. Thorax
      i. Wheelchair Chest
         1. Patient Considerations
            a. Patient Position
            b. Part Position
            c. CR (Computed Radiography)
            d. Respiration
            e. Film Critique
      ii. Stretcher Chest
         1. Patient Considerations
         2. Positioning Considerations
   2. Upper Extremity
      i. Shoulder/ Acromial Clavicular (AC) Joints/Clavicle/Scapula
         1. Patient Considerations
         2. Positioning Considerations
   3. Lower Extremity
      i. Knee/Patella/ Weight Bearing Exams
         1. Patient Considerations
         2. Positioning Considerations
   4. Spine & Pelvis
      i. Cervical Spine/ Soft Tissue Neck/ Scoliosis Series
         1. Patient Considerations
         2. Positioning Considerations
      ii. Hip
         1. Patient Considerations
         2. Positioning Considerations
      iii. Bone Survey/ Long Bone measurements/ Bone Age
         1. Patient Considerations
         2. Positioning Considerations
   5. Operating Room
      i. Non-orthopedic
         1. Operative Cholangiography
         2. Myelography
         3. Arthrography
      ii. Orthopedic
         1. Joint Replacement
iii. Post-op/Recovery room protocols
   1. Patient Considerations
   2. Positioning Considerations

iv. Mobile
   1. Chest – Adult & Pediatric
      a. Patient Considerations
      b. Positioning Considerations
   2. Abdomen – Adult & Pediatric
      a. Patient Considerations
      b. Positioning Considerations
   3. Orthopedic – Adult & Pediatric
      a. Patient Considerations
      b. Positioning Considerations

E. Basic Principles and Techniques of Angiographic and Interventional Procedures
   1. Angiographic Accessories
      i. Catheterization techniques
      ii. Vascular access
         1. Seldinger technique
   2. Non-Vascular Interventional Radiography
   3. Myelography
      i. Anatomy
         1. Vertebral column
         2. Spinal cord
         3. Meninges
         4. Ventrices
      ii. Indications
   iii. Procedure
      1. Equipment
      2. Contrast
      3. Positioning/filming
      4. Patient care
      5. Complications
   iv. Sialography
      1. Anatomy
      2. Indications
      3. Supplies
      4. Contrast
   v. Arthrography
      1. Indications
      2. Anatomy demonstrated
         a. Knee
         b. Shoulder
         c. Wrist
         d. Hip
         e. TMJ (Tempromandibular joints)
      3. Contrast
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, ½” Binder, paper, pens, pencils with erasers, 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 may include research projects, 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.

All assignments must be typewritten and are due at the beginning of class on the assigned due dates. Late assignments will not be accepted. In-class quizzes and assignments cannot be made up.

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/jeffco/index.php?option=com_weblinks&catid=26&Itemid=84).

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.