JEFFERSON COLLEGE

COURSE SYLLABUS

RAD182

Introduction to Advanced Imaging Modalities

1 Credit Hour

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RAD182 Introduction to Advanced Imaging Modalities

I. CATALOGUE DESCRIPTION

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

B. Credit hour award: 1

C. Description: Introduction to Advanced Imaging Modalities provides an overview of the basic understanding and operation of various imaging modalities. Advanced imaging modalities including computed tomography, digital radiography, ultrasound, magnetic resonance imaging, mammography, special procedures, interventional, nuclear medicine, radiation therapy, and bone densitometry will be discussed. (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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<tbody>
<tr>
<td>Discuss the instrumentation and application of advanced imaging modalities</td>
<td>Class Discussion/Activity</td>
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<td>Written Assignments</td>
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<td>Written Examinations</td>
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<tr>
<td>Identify the benefits and risks of each of the advanced imaging modalities</td>
<td>Class Discussion/Activity</td>
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<td>Written Examinations</td>
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<tr>
<td>Discuss the career opportunities and advancement for the radiographer</td>
<td>Class Discussion/Activity</td>
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<td>Written Examinations</td>
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<td>Written Assignments</td>
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III. OUTLINE OF TOPICS

A. Advanced Imaging Modalities
   1. Cardiac Catheterization
      i. Basic Principles
      ii. Applications
   2. Computed Tomography (CT) & Tomography
      i. Basic Principles
      ii. Applications
   3. Bone Densitometry
      i. Basic Principles
      ii. Applications
   4. Nuclear Medicine
      i. Basic Principles
ii. Applications
5. Positron Emission Tomography (PET)
   i. Basic Principles
   ii. Applications
6. Contrast Arthrography
   i. Basic Principles
   ii. Applications
7. Magnetic Resonance Imaging (MRI)
   i. Basic Principles
   ii. Applications
8. Mammography
   i. Basic Principles
   ii. Applications
9. Diagnostic Ultrasound
   i. Basic Principles
   ii. Applications
10. Radiation Oncology
    i. Basic Principles
    ii. Applications
11. Medical Dosimetry
    i. Basic Principles
    ii. Applications
12. Bone Densitometry
    i. Basic Principles
    ii. Applications

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 PowerPoint (available through Jefferson College labs)
B. Course homepage available through Blackboard
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)

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. The student should be aware that proofreading and revision are extremely important when preparing homework. All writing assignments submitted for grading should be final drafts.

EXAMS All exams with scores less than 75% must be retaken until a score of 75% 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.

ASSIGNMENTS—In order to be prepared for each class meeting, the student should complete each homework assignment prior to the following class meeting. Assignments will consist of worksheets, textbook reading, review questions and other activities to enhance the learning experience. Evaluation tools will include research projects, written and oral communication projects, class attendance/participation, homework assignments, and exams.

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](http://www.jeffco.edu)).

**XI. ATTENDANCE STATEMENT**

Regular and punctual attendance is expected of all students. Any one of these four options may result in the student being removed from the class and an administrative withdrawal being processed: (1) Student fails to begin class; (2) Student ceases participation for at least two consecutive weeks; (3) Student misses 15 percent or more of the coursework; and/or (4) Student misses 15 percent or more of the course as defined by the instructor. 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 U.S. 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.