

## **RADT 207**

### **Advanced Imaging Procedures**

3 Credits

## Community College of Baltimore County Common Course Outline

### **Description**

**RADT 207 – Advanced Imaging Procedures:** a course in which students receive an overview of the advanced medical imaging areas of Computed Tomography (CT), Ultrasound, Nuclear Medicine, Bone Densitometry, MRI, Mammography, Forensic Imaging, Interventional Radiography, and Radiation Therapy. Additionally, students discuss and demonstrate venipuncture competency. Topics also include sectional anatomy, pediatric and geriatric patient populations, and trauma, mobile, and operating room imaging. Guest lecturers, who are experts in their respective modalities, present topics. Students present posters on timely medical imaging topics during National Radiologic Technology Week. 3 credit hours: 3 lecture hours per week; 15 weeks. Offered fall semester.

**Pre-requisites:** RADT 204, RADT 205

**Co-requisites:** RADT 206, RADT 208

### **Overall Course Objectives**

Upon completion of this course, students will be able to:

1. compare the major advantages and disadvantages of each medical imaging modality;
2. explain the operation of the equipment and basic imaging principles used in each imaging modality;
3. describe the three-dimensional relationship of anatomical structures and their relevance in medical imaging;
4. identify major anatomical structures on CT and MRI images of the head, thorax, abdomen, and pelvis;
5. identify the equipment and supplies used to obtain a routine venous specimen;
6. perform venipuncture using standard precautions;
7. demonstrate the ability to obtain radiographic images in a trauma setting, in an operating room suite, and on age-specific populations, such as pediatric and geriatric patients;
8. describe communication methods and care for age-specific populations in the imaging setting;
9. employ alternate techniques and equipment for positioning pediatric and geriatric patients for imaging studies;
10. summarize various types of surgical procedures and how to obtain images for the surgeons;
11. manipulate a C-arm machine and its locks in an operating room setting;
12. operate a portable radiographic machine by positioning it into place, manipulating the tube and locks, and setting techniques on the control panel;
13. demonstrate positioning patients for portable radiographic exams;
14. manipulate radiographic equipment around a immobile trauma patient; and

15. design a poster display on a professional topic for National Radiologic Technology Week.

### **Major Topics**

- I. Sectional Anatomy
  - a. Appearance of normal sectional anatomy
  - b. Gross anatomy
  - c. Three anatomical planes
  - d. Major structures on images
- II. Trauma Radiography
  - a. Trauma radiographic exams
  - b. Manipulating radiographic equipment
  - c. Immobile patients
- III. Mobile Radiography
  - a. Manipulating portable machine and equipment
  - b. Mobile exposure techniques
  - c. Isolation techniques
- IV. Surgical Radiography
  - a. C-arm movements, locks, and functions
  - b. Surgical procedures
  - c. Aseptic techniques
- V. Age-specific Populations
  - a. Pediatrics
  - b. Adolescents
  - c. Geriatrics
- VI. Advanced Medical Imaging
  - a. Ultrasound
  - b. CT
  - c. MRI
  - d. Mammography
  - e. Nuclear medicine
  - f. Densitometry
  - g. Radiation therapy
  - h. Venipuncture
  - i. Forensic imaging

### **Course Requirements**

Grading will be determined by the individual faculty member, but shall include the following, at minimum:

- 3 Homework Assignments
- 5 Discussion Board Assignments
- 1 Group Project
- 1 Professional Poster Project
- 6 Quizzes
- 3 Tests
- 1 Cumulative Final Exam

The Common Course Outline (CCO) determines the essential nature of each course.

For more information, see your professor's syllabus.

Written assignments and research projects: Students are required to use appropriate academic resources in their research and cite sources according to the style selected by their professor.

### **Other Course Information**

The American Registry of Radiologic Technologists (ARRT) has established a minimum scaled passing score of 75%. The Radiography program has developed standards of grading that are consistent with grading systems of other programs. Letter grades will be distributed according to the following standards:

92 -100 A

83 -91 B

75 -82 C

65 -74 D

Below 65 F

This course is a required course in the AAS Radiography program within the Medical Imaging Department. All RADT courses must be passed with a grade of C or better.

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