

# Common Course Outline

RADT 202

Radiography IV

8 credits

## The Community College of Baltimore County

### Description

Four (4) lecture hours, twenty-five (25) laboratory hours a week, fifteen weeks.

(Offered Fall)

Prerequisite: RADT 201

Radiography IV is the sixth course in the sequence of nine courses that comprise the professional portion of the radiography curriculum. The course consists of both classroom and clinical sessions. Classes cover positioning of the patient and equipment to produce routine radiographs of the skull and face. Special positioning views and techniques for trauma, pediatric and geriatric populations are included. Topographic/radiographic anatomy is correlated with medical images. An introduction to cardiovascular imaging is presented. During the clinical sessions, students continue to participate in actual radiographic procedures as they assist staff at the clinical sites.

### Overall Course Objectives

Upon completion of the Positioning modules, the student will be able to:

1. Describe the anatomy of the skull and face that can be demonstrated on radiographs.
2. Identify skull and face anatomy on diagrams and radiographs.
3. Describe the patient preparation, patient position, part placement, film selection/placement, beam alignment/angulation, collimation/shielding, and any special considerations for examinations of the skull and face.
4. Describe alternate methods for producing routine diagnostic radiographs on trauma patients.
5. Identify additional views that will demonstrate questionable anatomical findings.
6. Given various special or non-routine views, identify the procedures being done, and the anatomical structures being visualized.
7. Discuss effective means of communicating with pediatric patients and their families.
8. Describe variations in patient preparation/instructions, patient position, part placement, film selection/placement, beam alignment angulation, collimation/shielding, exposure selection, and any special considerations for the pediatric and geriatric populations.
9. Discuss radiographic/medical imaging procedures that are specific to the pediatric population.

Upon completion of the Topographic/Radiographic Anatomy module, the student will be able to:

1. Discuss the normal appearance of anatomy on radiographs.
2. Identify gross anatomical structures on radiographs and diagrams.
3. Describe the location of anatomical structures in relation to each other and discuss their relevance in medical imaging.

Upon completion of the Angiography/Interventional Radiology module, the student will be able to:

1. Discuss indications for radiology and cardiology angiographic/interventional procedures.
2. Describe the primary pieces of equipment found in an angiographic/interventional suite.

**Overall Course Objectives, continued**

3. Describe patient care procedures relating to angiographic/interventional procedures.
4. Describe the equipment/supplies including contrast media, patient preparation/instructions, patient position, imaging receptor selection/placement, beam alignment/angulation, and general procedure for common angiographic/cardiovascular imaging procedures.
5. Given various angiographic images, identify the specific procedure being done, and the structures visualized.
6. Discuss the purpose of the most commonly performed vascular and non-vascular interventional procedures.

Upon completion of Clinical Education, the student shall be able to:

1. Complete demonstration/practice sessions for category VI (skull and face).
2. Complete laboratory evaluations (simulations) for category V (contrast studies, digestive and urinary), and category VI (skull and face).
3. Present films for image evaluation in category IV (spine and bony thorax), category V (contrast studies, digestive and urinary), and category VI (skull and face).
4. Complete competency tests for category II (upper extremity), category III (lower extremity), category IV (spine and bony thorax), and category V (contrast studies, digestive and urinary). A minimum of 12 successful competency tests is required during RADT 202.
6. Perform radiographs on the whole-body phantom to include two assigned examinations from category VI (skull and face). Identify and label all major anatomical structures on the radiographs.
7. Complete research on the clinical topic and submit completed scientific exhibit or essay.
8. Apply principles of film critique in evaluating radiographic images performed during laboratory and clinical assignments.
9. Complete area-specific performance objectives for scheduled RADT 202 clinical areas.
10. Demonstrate appropriate professional behavior while on clinical duty.

**Major Topics**

Positioning modules.

- I. Anatomy and Positioning for the routine views of the:
  - A. cranium
  - B. facial bones
  - C. orbits
  - D. nasal bones
  - E. sinuses
  - F. mandible
  - G. zygomatic arches
  - H. temporomandibular joints
  - I. mastoids
- II. Special or Non-Routine Positioning Views
  - A. Upper and Lower Extremities
  - B. Spine, Skull and Face

**Major Topics, continued**

- III. Modifications for Trauma
- IV. Pediatric Radiography
  - A. Psychosocial and legal issues
  - B. Chest and Abdomen
  - C. Orthopedic radiographs
  - D. Battered child survey
  - E. Radiation Protection
- V. Geriatric Radiography
  - A. Psychosocial and legal issues
  - B. Physiological changes
  - C. Modifications for radiographic procedures

Topographic/Radiographic Anatomy module.

- I. Skeletal Radiography
- II. Radiography of the Respiratory System
- III. Radiography of the Digestive System
- IV. Radiography of the GenitoUrinary System
- V. CNS Imaging

Angiography/Interventional Radiology module.

- I. Intro to Interventional Radiology
  - A. Imaging Equipment
  - B. Catheters, Guidewires, Needles
  - C. Contrast Media
- II. Digital Subtraction Angiography
- III. Aortography
  - A. Abdominal aortography
  - B. thoracic aortography
  - C. pulmonary angiography
  - C. renal angiography
- IV. Splenoportography
- V. Peripheral Arteriography & Venography
- VI. Cerebral Angiography
- VII. Cardiac Catheterization
- VIII. Electrophysiology
- IX. Interventional/Therapeutic Procedures

**Course Requirements**

Grades for RADT 202 will be determined by the following:

- |      |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                               |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| I.   | Attendance, Dress Code & Ethics<br>minus 0.5 points for each absence or late<br>Absence from three (3) or more classes or three(3) or more absences from clinical will lower the course grade one letter unless a physician's written reason is provided.<br>minus 0.5 for each infraction of uniform policy , minus 1.0 for each infraction after 1st notice<br>Students must be appropriately attired to be in the clinical sites. | 2.5 points<br>minus 1.0 point for a "NO-CALL" |
| II.  | Clinical Performance Objectives and Exam Record Sheets                                                                                                                                                                                                                                                                                                                                                                               | 2.5 points                                    |
| III. | Clinical Evaluations<br>Evaluations of students' performance are completed weekly by supervising clinical; staff.                                                                                                                                                                                                                                                                                                                    | 7.5 points                                    |
| IV.  | Laboratory Evaluations, Image Evaluations, and<br>Clinical Competencies<br>A minimum of 12 successful competency tests is required during RADT 202.                                                                                                                                                                                                                                                                                  | 10 points                                     |
| V.   | Film Critique/Experiments<br>Students are responsible for preparing and presenting a film critique report and a clinical experiment report.                                                                                                                                                                                                                                                                                          | 5 points                                      |
| VI.  | Essay/Exhibit<br>Students must complete the scientific exhibit or essay.                                                                                                                                                                                                                                                                                                                                                             | 7.5 points                                    |
| VII. | QUIZZES* and units                                                                                                                                                                                                                                                                                                                                                                                                                   | 10 points                                     |
| VIII | WRITTEN TESTS(completed at the end of each module)*                                                                                                                                                                                                                                                                                                                                                                                  | 20 points                                     |
| IX.  | FINAL*                                                                                                                                                                                                                                                                                                                                                                                                                               | <u>35 points</u><br>100 points                |

\* points may be deducted for tests that are missed and made up a later date

The ARRT has established a minimum passing score of 75%. The radiography program has established standards that are consistent with grading systems of other radiography programs. Letter grades for RADT 202 will be determined according to the following guidelines:

92	-	100	A
83	-	91	B
75	-	82	C
65	-	74	D
Below 65			F

**Other Course Information**

Formal admission into the Radiography Program is required prior to registration.

RADT 202 is the sixth course in the sequence of nine courses that comprise the professional portion of the curriculum and must be taken after successful completion of RADT 201.

Date revised: 01/07/04