



**MERCER**  
COUNTY COMMUNITY COLLEGE

## **COURSE OUTLINE**

<b>Course Number</b> <b>RAD228</b>	<b>Course Title</b> <b>Radiographic Procedures III</b>	<b>Credits</b> <b>6</b>
<b>Hours:</b> <b>Lecture/Lab/Other</b> <b>2/3/340 clinical</b> <b>hours</b>	<b>Co- or Pre-requisite</b> <b>Pre-requisites: RAD117, RAD207</b> <b>Co-requisites: RAD 217</b>	<b>Implementation</b> <b>Semester &amp; Year</b> <b>Fall 2025</b>

**Catalog description:**

Focuses on standard radiographic positioning and related medical terminology of the urinary system, alimentary canal, biliary system and cranium with laboratory simulation and evaluation. Students acquire correlated clinical experience and continue the clinical competency evaluation process at a clinical affiliate.

**General Education Category:**  
Not GenEd

**Course coordinator:**  
Sandra L. Kerr, 609-570-3337, [kerrs@mccc.edu](mailto:kerrs@mccc.edu)

**Required texts/Supplements:**

**REQUIRED:**

Title: Textbook of Radiographic Positioning and Related Anatomy  
Author: K.L. Bontrager; J.P. Lampignano  
Publisher: Elsevier  
Edition: 11<sup>th</sup>

Title: Radiographic Positioning and Related Anatomy  
Workbook, Volume I  
Author: K.L. Bontrager; J.P. Lampignano  
Publisher: Elsevier  
Edition: 11<sup>th</sup>

Title: Radiographic Image Analysis  
Author: Kathy McQuillen Martensen  
Publisher: Elsevier  
Edition: 6<sup>h</sup>

Title: Bontrager's Handbook of Radiographic Positioning & Techniques  
Author: K.L. Bontrager; J.P. Lamignano  
Publisher: Elsevier Mosby  
Edition: 11<sup>th</sup>

AliMed personal ruleanglemeter Item # 5047

<https://www.alimed.com/alimed-personal-rulanglemeter-goniometer.html?pid=56563>

**OR**

Prestige goniometer

<https://www.prestigemedical.com/ProductDetail.aspx?sku=47>

Didactic human skull color coded

<https://www.hbarsci.com/products/hbarcolorskull>

### **Course Student Learning Outcomes (SLO):**

**Upon completion of this course the student will be able to:**

1. Interpret anatomical and medical terms of the cranium, urinary system, alimentary canal and biliary system and apply to radiographic procedures. [Supports ILG # 3]
2. Compare contrast agents used for routine radiographic procedures of the urinary system, alimentary canal and biliary system. [Supports ILG # 3]
3. Describe and perform routine radiographic procedures to demonstrate the urinary system, alimentary canal, biliary system and cranium during laboratory simulation [Supports ILG # 1-5, 8-11]
4. Develop effective communication skills when performing the routine radiographic positions of the urinary system, alimentary canal, biliary system and cranium during laboratory and clinical education. [Supports ILG # 1]
5. Analyze radiographic images to determine optimal quality in accordance with imaging standards and radiation safety. [Supports ILG # 3, 9, 11]
6. Correlate other imaging modalities and exam sequencing utilized to demonstrate anatomy and pathology of the urinary system, alimentary canal, biliary system and cranium. [Supports ILG # 3, 11]
7. Develop the technical competence to perform all types of diagnostic imaging procedures on a variety of patient types using various imaging equipment and processing modes with the appropriate level of supervision. [Supports ILG # 1-5, 8-11]

### **Course-specific Institutional Learning Goals (ILG):**

**Institutional Learning Goal 1. Written and Oral Communication in English.** Students will communicate effectively in both speech and writing.

**Institutional Learning Goal 2. Mathematics.** Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.

**Institutional Learning Goal 3. Science.** Students will use the scientific method of inquiry, through the acquisition of scientific knowledge.

**Institutional Learning Goal 4. Technology.** Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

**Institutional Learning Goal 5. Social Science.** Students will use social science theories and concepts to analyze human behavior and social and political institutions and to act as responsible citizens.

**Institutional Learning Goal 8. Diversity and Global Perspective:** Students will understand the importance of a global perspective and culturally diverse peoples

**Institutional Learning Goal 9. Ethical Reasoning and Action.** Students will understand ethical frameworks, issues, and situations.

**Institutional Learning Goal 10. Information Literacy:** Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.

**Institutional Learning Goal 11. Critical Thinking:** Students will use critical thinking skills understand, analyze, or apply information or solve problems.

### Units of study in detail – Unit Student Learning Outcomes

Unit I-VI: Contrast Media Procedures [Supports Course SLOs #1,- 7]

Unit VII – XIV: Cranium Radiography [Supports Course SLOs #1 - 7]

### **Learning Objectives:**

At the completion of each weekly three-component activity (lecture, laboratory, and clinical education the student will be able to: [Supports Course SLOs #1 - 7]

- Identify the anatomical parts of the urinary, gastrointestinal, biliary systems and cranium on diagrams and radiographic images.
- Describe routine positions of the urinary system, alimentary canal, biliary systems and cranium; identify structures demonstrated.
- Discuss equipment and supplies necessary to complete radiographic and fluoroscopic procedures of the urinary system, alimentary canal, biliary system and cranium.
- Explain the pharmacology of barium and iodine compounds.
- Describe methods and techniques for administering various types of contrast agents.
- In the laboratory-simulated environment, perform routine radiographic procedures of the urinary system, alimentary canal, biliary system, and cranium.
- In the laboratory simulated environment, perform trauma radiographic procedures of the cranium.
- Given radiographs of various anatomical structures, evaluate positioning accuracy and image quality.
- Discuss ethics and the characteristics of professional behavior.
- Apply professional communication techniques.
- List the radiography practice standards.
- Demonstrate positive values and a commitment to diversity, equity, and inclusion.
- Explain the elements of procedural performance and radiation protection.
- Recognize the requirements for clinical competency.
- Discuss radiographic technique using anatomic, positioning, and projection terminology.
- Evaluate radiographic orders and preparation for procedures.

- Describe patient communication techniques and planning.
- Apply patient positioning techniques for common exams.
- Conduct contrast and cranium radiographic procedures in accordance with department protocol.
- Recognize special concerns and techniques for mobile and surgical radiography.

### **Evaluation of student learning:**

A grade of "C+" (77%) or higher must be achieved in the lecture, laboratory, and clinical components of the course to progress to RAD240, RAD224, and RAD232. A grade of "P" (pass) must be earned in the laboratory and clinical components. The following grading policy will be utilized:

#### **Course Grade**

Lecture:	100%
Laboratory:	Pass/Fail (P/F)
Clinical:	Pass/Fail (P/F)

#### **Lecture Grade**

Exams:	40%
Mid-Term Exam:	20%
Final Exam:	30%
RT Bootcamp:	5%
Lab Assignments:	5%

#### **Clinical Grade**

Clinical Evaluations:	50%
Clinical Competency Evaluations:	25%
Image Evaluation:	25%

#### **Lab Grade**

Lab Tests/Assignments:	100%
------------------------	------