

Montgomery County Community College
 RAD 221
 Radiographic Procedures III
 3-2-2

COURSE DESCRIPTION:

As a continuation of Radiographic Procedures, this course will provide the student with the knowledge to perform standard radiographic procedures of the skull, sinuses and contrast media studies. Special studies including venography, angiography, mammography, CT, MRI and vascular imaging will be included. Coursework will also include pharmacology and cross sectional anatomy. Laboratory simulations as well as student practice will be emphasized in this course. This course is subject to a course fee. Refer to <http://mc3.edu/adm-fin-aid/paying/tuition/course-fees> for current rates.

REQUISITES:*Previous Course Requirements*

- RAD 124 Clinical Education III

Concurrent Course Requirements

- RAD 214 Clinical Education IV
- RAD 103 Radiation Protection and Biology

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
1. Cite the anatomical structures demonstrated on routine radiographic/fluoroscopic and vascular imaging procedures.	Interactive Discussion Audiovisual Materials Computer-Based Activities Assigned Readings and Written Assignments Field Trip	Exam Questions Image Critique Form Oral Presentations
2. Simulate radiographic/fluoroscopic procedures in a laboratory setting.	Lecture/Discussion Demonstration/Practice Field Trip	Skills Competency Exam Questions Image Critique Form Oral Presentations
3. Evaluate radiographic/fluoroscopic images for positioning, centering, appropriate anatomy and overall quality.	Interactive Discussion Audiovisual Materials Computer-Based Activities Assigned Readings and Written Assignments	Exam Questions Image Critique Form Oral Presentations

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
4. Distinguish between the types, dosage and route of contrast medias administration used to perform radiographic, gastrointestinal studies, basic CT and special studies.	Interactive Discussion Audiovisual Materials Computer-Based Activities Assigned Readings and Written Assignments	Exam Questions Image Critique Form Oral Presentations
5. Compare and contrast the production of MRI and CT images.	Interactive Discussion Audiovisual Materials Computer-Based Activities Assigned Readings and Written Assignments	Exam Questions Image Critique Form Oral Presentations
6. Locate anatomical structures on MRI, CT, and Mammography images.	Interactive Discussion Audiovisual Materials Computer-Based Activities Assigned Readings and Written Assignments	Exam Questions Image Critique Form Oral Presentations
7. Discuss the role of MQSA in mammography.	Lecture/Discussion Computer Technology Assigned Readings Videotapes/DVD's	Exam Questions Image Critique Form Oral Presentations
8. Explain basic CT acquisition protocol for head, thorax and abdomen procedures.	Lecture/Discussion Computer Based Activities Assigned readings Videotapes/DVD's	Exam Questions Image Critique Form Oral Presentations
9. Summarize radiation safety and protection practices associated with basic CT.	Lecture/Discussion Demonstration/Practice Student Presentation Computer Based Activities Assigned Readings Videotapes/DVD's	Exam Questions Image Critique Form Oral Presentations
10. Distinguish between chemical, generic and trade drug names.	Interactive Discussion Assigned Readings and Written Assignments	Exam Questions Image Critique Form Oral Presentations

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria.*

SEQUENCE OF TOPICS:

1. Procedural Considerations for Cranial Positioning
2. Positioning Considerations

- a. Skull
- b. Facial Bones and Para Nasal Sinuses
- c. Orbits and Optic Foramina
- d. Zygomatic Arches
- e. Mandible
- f. Temporomandibular Arches
3. Procedural Considerations for Contrast Studies
4. Positioning for Contrast Media Studies
 - a. Esophagus
 - b. Stomach
 - c. Small Bowel
 - d. Colon/Rectum
 - e. Gallbladder
 - f. Biliary Ducts
 - g. Endoscopic Retrograde Cholangiographic Pancreatography (ERCP)
 - h. Operative Cholangiography
 - i. Intravenous Urography
 - j. Retrograde Urography
 - k. Cystography/Cystourography
 - l. Hysterosalpingography
5. Procedural Considerations for Special Studies
 - a. Arthrography
 - b. Myelography
 - c. Venography
 - d. Mammography
 - e. Vascular Imaging
 - f. CT
 - g. MRI
6. Pharmacology

LEARNING MATERIALS:

Texts:

Frank, E. (2016). *Merrill's Atlas of Radiographic Positions and Radiologic Procedures* (13th ed.). St. Louis, MO: C.V. Mosby.

Frank, E. (2016). *Workbook for Merrill's Atlas* (13th ed.). St. Louis, MO: C.V. Mosby.

Other learning materials may be required and made available directly to the student and/or via the College's Libraries and/or course management system.

COURSE APPROVAL:

Prepared by: Debra J. Poelhuis, R.T., M.S.	Date: 5/2004
Revised by: Debra Poelhuis, R.T., M.S.	Date: 1/2009
VPAA/Provost Compliance Verification: Dr. John C. Flynn, Jr.	Date: 9/11/2009
Revised by: Debra Poelhuis, R.T., M.S.	Date: 10/26/2012
VPAA/Provost or designee Compliance Verification: Victoria L. Bastecki-Perez, Ed.D.	Date: 10/26/2012
Revised by: Cheryl L. DiLanzo, M.S., R.T.	Date: 10/28/2016
VPAA/Provost or designee Compliance Verification: Victoria L. Bastecki-Perez, Ed.D.	Date: 11/5/2016
Revised by: Debbie Dalrymple and Cheryl L. DiLanzo, M.S., R.T	Date: 1/9/2018
VPAA/Provost or designee Compliance Verification:	Date: 1/9/2018



This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.