

MONTGOMERY COLLEGE
RADIOLOGIC TECHNOLOGY PROGRAM
RADT 207 SYLLABUS

Course Title: Radiologic Technology IV Course #:31487

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Prepared: Spring, 2018

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Office Hours: T 8:00am-8:30am and 10:30-3:00pm

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Prerequisite: RT 102 Radiologic Technology II,
RT 206 Radiologic Technology III

Course Schedule: Tuesday 8:30am -10:30am

Credits: 2

Textbook: Textbook of Radiographic Positioning and Related Anatomy, Bontrager, Kenneth (required) 9ed.

*References:

Patient Care in Radiography: With an Introduction to Medical Imaging, Ehrlich, 9th ed.
Radiologic Science for Technologists, Bushong, Stewart.

*Please note that these references may be referred to in class throughout the semester

Course Description:

This course is a continuation of RT101 and RT206. Advanced radiographic modalities, procedures and equipment. Advanced contrast studies including angiography, interventional studies, arthrography, myelography, venography, genitourinary system studies, and biliary system studied are covered. Identification of pathologies commonly diagnoses by various imaging modalities (computed tomography, MRI, mammography, sonography, nuclear medicine, PET CT, DEXA) is presented. Instruction in cross sectional anatomy and the components of computed tomography imaging are presented. Basic pharmacology concepts as required by

ASRT are discussed. Review of the anatomical structures of the major body systems is included. Review of medicolegal considerations for imaging.

Course Outcomes:

At the completion of the course the student will be able to:

1. Review the function of the anatomy and physiology of major body systems.
2. Identify and explain the function of advanced imaging modality principles and their applications. (CT, MRI, Mammography, Nuclear Medicine, Sonography, PET CT and DEXA).
3. Identify pathologies best visualized in advanced radiographic procedures.
4. Identify and explain contraindications and indications for advanced radiographic procedures and typical physiological functions in the body systems.
5. Recognize purposes, lists component parts, and describe steps necessary in utilizing specialized interventional equipment.
6. Differentiate between the generations of CT scanners.
7. Recognize and identify the components of a CT scanner.
8. Identify anatomy from radiographs and CT and MRI scans.
9. Review artifacts and resolution (spatial and contrast) of a CT scan.
10. Identify/ describe data acquisition process and the post processing procedures in advanced modalities.
11. Review and apply medico legal terms as they relate to imaging studies and professional behavior.
12. Review principles of pharmacology and drug administration as they relate to contrast and drugs used for patients in the Radiography department.
13. Review principles in patient care, pediatrics.

Classroom Behavior:

Each and every student is expected to behave in ways which promote a teaching and learning atmosphere. Students have the right to learn; however; they do not have the right to interfere with the freedom of the faculty to teach or the rights of other students to learn. Students will be treated respectfully in return for respectful behavior.

All in-class discussions should be carried out in a way that keeps the classroom environment respectful of the rights of others. This means that, for example, students should not interrupt someone else who is talking regardless of whether that person is the instructor or another student. Students should not monopolize class time by repeatedly interrupting and asking questions in a manner in which hinders the learning process of others. Students are also expected to conduct themselves in ways which create a safe learning and teaching environment that is free from such things as violence, intimidation, and harassment, including sexual harassment. Should a student be disruptive in class, then he/she will be asked to leave. The instructor reserves the right to have the student removed by Security if refusal occurs.

Cell phones and pagers should be kept on vibrate mode and students who must speak on a cell phone, must do so outside of the classroom to prevent disruption to the rest of the class.

ACADEMIC DISHONESTY AND MISCONDUCT:

Students are expected to maintain the integrity of the test taking environment by doing their own work and not allowing others to copy one's work. Talking and referring to texts are strictly prohibited during an examination. Non-compliance to these standards may result in a failing grade of the examination.

In addition, the program maintains a strict adherence to the student code of conduct which may be accessed through Montgomery College's Home page at www.montgomerycollege.edu. Once you enter the home page, click on the *Current Student* tab on the top of the screen. Click on the Quick Link entitled *Codes and Policies*. This will direct you to the *Student Code of Conduct* which is a word document.

HOUSEKEEPING:

All students are responsible for putting equipment away, keeping equipment clean and in order at the end of each class session. Students are expected to report unsafe and/or broken equipment to the instructor.

Course Methodologies:

The course material will be presented in an interactive lecture manner. Students are encouraged to be active learners by participating in the presentation of course objectives through lecture, small group activities and hands-on activities. Students should review material to be covered and check their blackboard course and print a copy of the power point presentations and materials needed for class. Some audio-visuals and radiographs will be utilized as well as demonstrations. If a student requires any special resources to be more successful in the course, please let the instructor know so that the College can make accommodations.

Delayed Opening or Closing of the College

Because of inclement weather or utility failure or for other reasons, it may be necessary to delay opening or suspend all operations of the College or an individual campus.

Montgomery College will always operate on its regular schedule unless otherwise announced. Depending on the nature of the incident, notifications of emergencies and changes to the College's operational status will be communicated through one or more of the following means:

- College emergency responders: Security Officers, Campus Response and/or Support Teams
- Montgomery College ALERT. Registered users receive text and e-mail messages. Registration information at www.montgomerycollege.edu/emergency
- Montgomery College Emergency Desktop Notification. Scrolling messages are broadcast on College computers
- Montgomery College Web at www.montgomerycollege.edu
- MyMCWebsite
<https://mymcprod.montgomerycollege.edu/cp/home/display/login>.
- MyMC student e-mail system
- Montgomery College employee voice mail. From off-site, dial 240-567-1701
- Montgomery College employee e-mail. From off-site, <http://mcmail.montgomerycollege.edu>
- Montgomery College main phone number at 240-567-5000

- Montgomery College cable channel 10 in Montgomery County
- Commercial radio and TV stations including:

Television

Channel 5 WTTG

Channel 7 WJLA

Channel 9 WUSA

News Channel 8

Radio

WFRE (99.5 FM) - Frederick

WAMU (88.5 FM)

WFMD (930 AM) - Frederick

WMAL (630 AM)

All inquiries from the news media regarding an emergency event should be directed to the College's Office of Communications.

How Closing and Delays Impact Classes

If a class can meet for **50% or more of its regularly scheduled meeting time OR if the class can meet for 50 minutes or more, it will meet.** Montgomery College will always operate on its regular schedule unless otherwise announced. Depending on the nature of the incident, notifications of emergencies and changes to the College's operational status will be communicated through one or more communication methods including the College's website www.montgomerycollege.edu. For the most up-to-date information regarding College openings, closings, or emergencies, all students, faculty, and staff are encouraged to sign up for email and text alerts via Montgomery College ALERT. Registration information is available at ww.montgomerycollege.edu/emergency.

Students with Disabilities:

Any student who may need an accommodation due to a disability, please make an appointment to see Cathy Wilson (240-567-1475) during her office hours. A letter from Disability Support Services(R-CB122; G-SA175; or TP-ST120) authorizing your accommodations will be needed. Any student who may need assistance in the event of an emergency evacuation must identify to the Disability Support Services Office; guidelines for emergency

evacuations for individuals with disabilities are found at: www.montgomerycollege.edu/dss/evacprocedures.htm.

Attendance:

The attendance policy is stated in the Montgomery College Catalog. The student is urged to review the last sentence relative to the "Administrative Drop" for unexcused absences. Punctuality is stressed and any unexcused lateness will be factored into the final grade. (Ten points per tardy arrival/unexcused absence).

Grading:

93-100	A
86-92	B
78-85	C
Below 78	F

A student receiving a grade below a "C" in this course must satisfactorily repeat it before progressing to the next course.

Grades will be determined by:

1. Unit Exams* (approximately 3)	55%
2. Comprehensive Final	25%
3. Critical Thinking Assignment	5%
4. Pathology Research Paper or Modality Project	10%
5. Attendance/Affective Policy	5%

Total: 100%

*There are no make-up exams! If a unit exam is missed, it must be made up on the same day as the final, following the final exam.

Examinations (55%)

Approximately 3 examinations will be given to assess student comprehension of presented materials. The dates and objectives covered in examination form are noted in the class schedule in this syllabus. Examinations will include multiple choice questions and may include matching, sequencing, and true or false, fill in the blank, film identification and/or short essay questions. The point value is indicated on the examination. Multiple choice, true or false, matching questions are worth one point. Grades are calculated based on the number of points earned

divided by greatest possible points. For example, if the test has a total of 89 points and a student earns 79 possible points (79/89) the student's score would be 88.7% which will be rounded up to an 89%. All examinations are reviewed in class after graded and open for discussion of content only. Concerns about calculation of grade or possible mistakes in grading may be addressed individually with the instructor after class. Tests are kept in the student file. Students are not given the test to keep.

Comprehensive Final Examination (25%)

The final examination is given on the date as dictated by the college wide final exam schedule found in each semester's Montgomery College Credit Course Schedule and noted in the class schedule. The examination covers all material reviewed in the semester. Questions are primarily designed in multiple choice type fashion although some other forms of questions may be designed.

The Value of Critical Thinking Assignments:

The ability to critically think is essential for the successful completion of the Radiologic Technology program. Critical thinking concepts such as self assessment, evaluation, problem solving, deductive reasoning are but a few strategies employed in the diagnostic imaging environment. Use of these and other critical thinking strategies assist in the application of the book knowledge to the clinical setting. To this end throughout the two years in the program students will be required to complete specific didactic and clinical assignments used to assess critical thinking in the classroom and in the clinical rotations. In addition to critical thinking questions imbedded into each didactic exam, a percentage of the final grade for each class (including the clinical courses) will include the grade(s) from each critical thinking assignment.

Critical Thinking (Reflective Paper)(5%)

Students will complete a critical thinking assignment on their reflection of the two years in the program. The questions for this assignment are posted in Blackboard and a copy is attached to the back of this syllabus. The purpose of this assignment is to help the student reflect on their past in the Radiology program and to consider their possibilities awaiting them in the future.

Due date for this assignment will be April 30, 2019.

Pathology Paper or Modality Research Assignment (10%)

Students will be required to research one pathology or advanced modality procedure or the modality itself that they would like to develop into a paper or a project.

1. Guidelines for a Research Pathology Paper is as follows:

The submitted paper should be 4-8 pages, double spaced, 12 font size plus a reference page. The cover page and reference page do not count as part of the 5-10 pages that are required. The paper should address the following objectives:

- Name of pathology and why the student chose this pathology
- Brief description of the pathology, patient symptoms, any conservative treatment options
- Diagnostic imaging procedures used to identify, monitor and/or possibly treat this pathology. Your pathology should address more than one imaging modality to diagnose and/or treat the pathology.
- A description of how the procedures are performed, if contrast is used, number and type of images produced.
- Radiographic findings of the pathology and radiographic findings in terms of resolution of the pathology (if any) once treatment begins or is completed to address the pathology. By resolution of pathology, I mean does the pathology improve.

The pathology, as noted in one of the objectives above, should be one that more than one imaging modality may be used to identify.

Students MUST use at least three literary references.

In addition, students are encouraged to interview imaging professionals at their site as part of their research. These professionals are NOT considered one of the three required references but should be recognized in the reference page and given proper recognition in the paper.

APA style (you can find APA style examples on Google or MC library website) for the reference page is

recommended but the following information in the following style is accepted:

Author(s) last name, Name of Book, Article, Year and date, publisher

Suggestions and hints on how to organize your paper. These are not mandatory they are just suggestions for your paper.

- Pick a pathology that interests you. It might be something that you have read about or you may know someone who has been diagnosed with a certain disease.
- Divide your paper into sections(for example):

Introduction
History of pathology
Patient symptoms
Diagnosis
Treatment
Follow up

SPELLING AND CORRECT GRAMMATICAL STRUCTURE DOES COUNT. If assistance is needed, please contact the instructor or make an appointment with the reading and writing center. An example of a research paper will be provided for your review upon request.

2. If you choose to do a Research Project on a Modality or a Procedure, the guidelines are as follows:

- You can create a poster or a 3D story board about an advanced modality or about a procedure that you found to be interesting.
- Please provide educational information about your project, please use at least 3 literary sources (on-line sources are acceptable)
- Please provide a diagram, picture or some actual materials or equipment that may be used in the procedure or modality you have chosen. (some examples , Pacemaker insertion, HSG, Hip Injection, CT Biopsies, IR procedures).
- I would like this projects to be of educational quality that may be used in

future RADT 207 classes as demonstrations for certain subject matter.

DUE DATE: April 23, 2019.

Attendance/ Affective Behavior Policy: (5%)

The attendance policy for this course is the same as that stated in the Montgomery College Catalog. The student is urged to review the last sentence concerning unexcused absences and administrative drop from the course. **If a student cannot make class, it is their responsibility to call the College and relay that message to the faculty.** Punctuality is stressed and all unexcused lateness will be factored into the final grade (10 points off each tardy arrival). When possible, there will be a 5-10 minute break between lectures and students are expected to be back on time, the second lecture will begin on time. Repeated lateness to second lecture will result in points taken off grade.

College e-mail Accounts:

Student e-mail (Montgomery college.edu) is an official means of communication for the College. It is expected that you check your student e-mail regularly and frequently, as you are responsible for information and announcements that will be sent to you from the College. For this class, student e-mail will be used only for situations where timing is essential. Most information is discussed in class and all assignments will be turned in as hard copy during regular class times. If you contact me through e-mail, you must use your student e-mail account (rather than a yahoo account) so that I can recognize you as a student. If you e-mail me, please follow-up with a voice mail message using the following number: 240-567-5566.

MONTGOMERY COLLEGE
TAKOMA PARK

CRITICAL THINKING ASSIGNMENT
"Radiology Reflective Paper"

1. Reflect on your two years in the Radiologic Technology program and tell me what type of technologist you hope to become. Without naming any names (positive or negative), tell me one or more positive ways in which a technologist(s) has had an influence on you.
2. Tell me one or more negative things you have witnessed and that you know that you will not repeat. I feel that this one way for you to reflect on the good and the bad of the radiography world and perhaps decide what your legacy to the profession will be in the future.
3. What would you consider to be your best day or time in the program so far?
4. Do you feel that you are prepared to face the world as a radiographer? If not, what areas do you feel that you still need help with? When you begin working as a technologist and you get a request for something that you are not sure of how to position the patient or do the procedure, what can you do to find out what to do?
5. Where do you hope to get a job, in a hospital or office? Why? Do you want to have the opportunity to teach other radiology students?

	Excellent	Good	Fair	Poor
	10-9	8-6	5-3	2-0
Organization	Information is organized with well-constructed paragraphs and a clear intro and conclusion.	Information is organized with well constructed paragraphs.	Paper/project is weakly organized or with poor paragraph structure.	Information is disorganized and paragraph structure is lacking.
	10-9	8-6	5-3	2-0
Modalities/ Project has modality procedure well represented	2 or more modalities addressed with diagnostic, follow up and therapeutic specific examples.	1 or more modalities addressed with weak or missing specific examples.	1 modality with weak reflection and lack of examples.	0 modalities. No evidence of reflection on this section.
	10-9	8-6	5-3	2-0
Research of Pathology or Modality Project	Clear evidence of research of pathology, symptoms, demographics and risk factors.	Some evidence of research of pathology with 2 factors of symptoms, demographics and risk factors.	Slight evidence of research of pathology with 1 factor of symptoms, demographics and risk factors.	Limited research of pathology without any factors of symptoms, demographics, and risk factors.
	10-9	8-6	5-3	2-0
Specialist, Follow-up treatment, Radiographic Findings or Picture, equipment, diagrams included	Clear evidence of detailed research into specialist, follow up and radiographic findings.	Some evidence of research into specialist, follow up and radiographic findings.	Slight evidence of specialist, follow up and radiographic findings.	Limited evidence of specialist, follow up and radiographic findings.
	10-9	8-6	5-3	2-0
Mechanics	Minimal or no grammatical, spelling or punctuation errors.	Few grammatical, spelling or punctuation errors.	Some grammatical, spelling or punctuation errors. Distracts reader.	Many grammatical, spelling or punctuation errors. Hampers comprehension.

STUDENT NAME: _____ **Total points (50)**

PATHOLOGY/ Modality Project GRADING RUBERIC