



North Central State College
MASTER SYLLABUS
2019-2020

- A. Academic Division: Health Sciences
- B. Discipline: Radiological Science
- C. Course Number and Title: RADS2540 Radiologic Procedures/Seminar 5
- D. Course Coordinator: Dorie Ford R.T. (R) (M), BSPA, M. Ed.
Assistant Dean: Melinda Roepke, MSN, RN

Instructor Information:

- Name: Click here to enter text.
- Office Location: Click here to enter text.
- Office Hours: Click here to enter text.
- Phone Number: Click here to enter text.
- E-Mail Address: Click here to enter text.

- E. Credit Hours: 3
Lecture: 1
Seminar: 1
Laboratory: 3
- F. Prerequisites: RADS 2420
Co-requisites: RADS 2520, RADS 2560
- G. Syllabus Effective Date: Fall, 2019
- H. Textbook(s) Title:

Merrill's Atlas of Radiographic Positioning and Radiologic Procedures 3- volume Set
(Purchased in RADS1140)

- Author: Long, Rollins, & Smith
- Copyright Year: 2019
- Edition: 14th
- ISBN: 978032335566674

Quick and Easy Medical Terminology
(Purchased in RADS1140)

- Author: Leonard
- Copyright Year: 2017
- Edition: 8th
- ISBN: 9780323359207

Radiographic Pathology for Technologists

(Purchased in RADS1240)

- Author: Mace-Kowalczyk
- Copyright Year: 2017
- Edition: 7th
- ISBN: 9780323416322

Radiologic Science for Technologists

(Purchased in RADS1260)

- Author: Bushong
- Copyright Year: 2017
- Edition: 11th
- ISBN: 9780323353779

I. Workbook(s) and/or Lab Manual:

Merrill's Pocket Guide to Radiography

(Purchased in RADS1140)

- Author: Long, Curtis & Smith
- Copyright Year: 2015
- Edition: 13th
- ISBN: 9780323311960

Merrill's Atlas of Radiographic Positioning and Procedures Workbook

(Purchased in RADS1140)

- Author: Long, Rollins, Smith & Curtis
- Copyright Year: 2019
- Edition: 14th
- ISBN: 9780323597043

J. Course Description: This course is a capstone to all previous radiographic procedure courses. Students will be creating a radiographic case study and presenting the case to their peers. In addition, students will be required to complete final lab simulations to assess entry-level positioning skills. Some new information will continue to be presented such as radiographic procedures of the urinary and reproductive system. Pathology of the urinary and reproductive system will also be included to help students correlate the use of specific radiographic projections and their influence on the diagnosis of diseases. Laboratory exercises in an energized lab provide the student with practical application of the classroom material. Radiation biology will be discussed and its influence on radiation protection protocols. **Students will complete a Web-based research assignment investigating the impact of radiation accidents and their effect on human organisms.** Medical terminology is correlated with the content of the course. American Registry of Radiologic Technologies (ARRT) certification exam review will be conducted. A one-hour seminar will include various clinical topics.

K. College-Wide Learning Outcomes:

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	Written VALUE Rubric Chernobyl essay week 13
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	Information Literacy VALUE Rubric Chernobyl presentation week 12
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Position the body for radiographic procedures of the urinary system on a person or phantom in a laboratory setting.	Lab exercises and lab simulation rubric weeks 1-15, Multiple exam study lab rubric weeks 6-10, Final lab simulation lab rubrics weeks 10-15
2. Manipulate the radiographic equipment correctly for any radiographic procedure.	Lab exercises and lab simulation rubric weeks 1-15, Multiple exam study lab rubric weeks 6-10, Final lab simulation lab rubrics weeks 10-15
3. Demonstrate correct radiation protection practices.	Lab exercises and lab simulation rubric weeks 1-15, Multiple exam study lab rubric weeks 6-10, Final lab simulation lab rubrics weeks 10-15
4. Use appropriate and effective oral, written and nonverbal communications.	Lab exercises and lab simulation rubric weeks 1-15, Multiple exam study lab rubric weeks 6-10, Final lab simulation lab rubrics weeks 10-15 Information Literacy VALUE Rubric Chernobyl presentation rubric week 12, Written VALUE Rubric Chernobyl essay week 13, Capstone case study research paper (group) rubric week 14, Capstone case study presentation rubric week 13, Agree and Disagree Homework for Radiation Biology Weeks 8-15
5. Identify anatomic structures demonstrated on radiographic images.	Written tests weeks 1-15, Image matrix weeks 1-8, Image evaluation group activities weeks 1-8. Capstone case study rubric week 13
6. Evaluate medical images for positioning, centering, appropriate anatomy and technical accuracy.	Written tests weeks 1-15, Image matrix weeks 1-8, Image evaluation group activities weeks 1-8. Capstone case study rubric week 13 Capstone case study rubric week 13
7. Determine the cause-and-effect relationship between positioning the body and achieving the required outcome on the completed image.	Lab exercises and lab simulation rubric weeks 1-15, Multiple exam study lab rubric weeks 6-10, Final lab simulation lab rubrics weeks 10-15, written tests weeks 1-15 Capstone case study rubric week 13
8. Explain the four primary dose response relationships	Class discussion and homework week 7 written exam week 9
9. Classify radiation-induced diseases as either stochastic or deterministic	Class discussion and homework weeks 10 and 11. Chernobyl presentation week 12 Chernobyl essay week 13
10. Differentiate between direct and indirect effects of radiation interaction with the human body	Class discussion and homework weeks 10 and 11. Chernobyl presentation week 12 Chernobyl essay week 13 Class discussion and homework week 10 and 11
11. Discuss the principles of the target theory	Class discussion and homework week 10 and 11

Outcomes	Assessments – How it is met & When it is met
12. Demonstrate retention of skills by performing radiographic procedures of any selected body part on a person or phantom in the laboratory setting	Multiple exam study lab rubric weeks 6-10, Final lab simulation lab rubrics weeks 10-15
13. Demonstrate retention of all didactic and clinical information presented throughout the program by passing ARRT exam review tests	ARRT review written tests weeks 12, 13, 14, and 15

M. Topical Timeline (Subject to Change):

Week 1	Urinary system imaging
Week 2	Urinary system imaging continued
Week 3	Hysterosalpingogram
Week 4	Pathology of the urinary system Case study proposal
Week 5	Pathology of the reproductive system Seminar Topic: Image Review Urinary System (weeks 1-5)
Week 6	Structure of matter Seminar Topic: Research Paper/Peer Review (weeks 6-7)
Week 7	Human biology Principles of radiobiology
Week 8	Molecular and cellular radiobiology Seminar Topic: Agree and Disagree Statements for Radiation Biology
Week 9	Molecular and cellular radiobiology Radiation Roulette video Seminar Topic: Discussion of Video
Week 10	Stochastic effects
Week 11	Deterministic effects Health physics Seminar Topic: Agree and Disagree Statements for Radiation Biology (weeks 10-11)
Week 12	Chernobyl presentation Seminar Topic: Chernobyl Judgement Essay
Week 13	Case study presentation Seminar Topic: Q & A Case study presentations
Week 14	Review for ARRT exam

Week 15 Review for ARRT exam
 Seminar Topic: The ARRT Exam
 Week 16 Final Exam

N. Course Assignments:

Lecture/PowerPoint presentations
 Lecture note outlines
 Student worksheets/homework
 Small group activities
 Class discussions
 Lab simulations and exercises
 Role playing
 Supervised practice in the college lab
 Independent practice in the college lab
 Computer assisted instruction (Evolve modules, radiography essentials)
 Written assignments
 Image Matrix
 Research Paper
 AART Review Tests
 Canvas utilization for instruction and communication
 Assigned readings
 Review of medical images
 Class presentations

O. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93-100	A	4.00	Superior
90-92	A-	3.67	Superior
87-89	B+	3.33	Above Average
83-86	B	3.00	Above Average
80-82	B-	2.67	Above Average
77-79	C+	2.33	Average
73-76	C	2.00	Average
70-72	C-	1.67	Below Average
67-69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

P. Grading and Testing Guidelines:

Exams 65% of grade
 Lab 15% of grade
 Homework 15% of grade
 Participation 5% of grade

The Radiological Department believes that a grade below **C** indicates lack of mastery of essential skills. Therefore, any student who receives less than **C** in any Radiological Science sequence course cannot continue in Radiologic Technology.

Q. Examination Policy:

Policy for a missed test or oral or written presentation:

Students must attend class when tests, oral presentations and written assignments are scheduled. If the student does not attend class on these days the following deductions will be applied:

1. first missed test = minus 10% from the earned score
2. second missed test = minus 15% from the earned score
3. third missed test = minus 20% from the earned score
4. additional missed tests= zero score

A student who arrives late to class for a test may not be permitted to take the test at that time. The test will then be treated as a make-up test with the appropriate deduction from the earned score.

In any circumstance where a student will miss class the student must send a message to the instructor through Canvas prior to the start of the class. The instructor will contact the student via Canvas later in the day with instructions for the make-up test and/or homework missed. The instructor will not call the student to arrange make up. Make-up tests are scheduled as close as possible to the date of the missed test.

The reasons that a student may be excused from a test, oral presentation or written assignment and not receive a deduction in the earned test score are as follows:

1. personal illness or illness of immediate family (doctor's excuse required)
2. personal hospitalization or hospitalization of an immediate family member (documentation required)
3. death in the immediate family (documentation required)

Lab Grading Policy

There is a close correlation between lab performance and clinical performance. When a student successfully completes a lab simulation it demonstrates that the student is ready to perform the procedure on a patient at the clinical site. Students must attend all scheduled labs (attendance is taken) The student will receive 2 points for each lab attended. If a student misses a lab or is late to the lab 2 points will be deducted for the lab. Students may be excused from lab for the above named reasons if proper documentation is provided. If the student does not follow the correct dress code for lab, 2 points will be deducted from lab.

When a lab simulation is scheduled in the lab, students are expected to come to lab prepared to perform the lab simulation. A student must receive 80% (24/30) or higher to pass a lab simulation. When a student fails a lab simulation these assumptions can be made:

1. The student did not prepare for the lab simulation in advance by reviewing and practicing
- OR -
2. The student has weaknesses that must be identified and corrected so that these weaknesses do not degrade clinical performance.

Students who do not pass a lab simulation will be required to perform a repeat simulation. On a repeat simulation 10% will automatically be deducted from the final score. Students must pass the repeat simulation with 80% (24/30) after the 10% deduction. If the student fails the repeat simulation, the student will receive a zero as a grade for that simulation but will be required to simulate the exam until the student has demonstrated satisfactory skills on the exam. Additional make up labs may be scheduled by the instructor to accommodate repeat simulations.

R. Class Attendance and Homework Make-Up Policy:

Most classes include homework assignments. If a student misses a class, it is the student's responsibility to find out from the instructor what the homework assignment was and to obtain homework papers if applicable. Students are given full credit for homework only if it is completed and in class on time. If a student would like partial credit for homework it is the student's responsibility to present the finished homework to the instructor in the next class. The instructor will not chase down or ask for missed homework. A zero is assigned for all missing homework.

Lab Attendance and Practice Expectations

Students are required to attend their assigned lab each week. If a student misses an assigned lab, he/she is may be required to attend another lab the same week or two labs the following week to stay current with practicing and simulating the material or will be required to practice and get signed off on the exam by the clinical instructor at clinical education.

It is the responsibility of the student to master the skills that are necessary to successfully complete the assigned simulations. This usually means that the student will need to come in to the radiology lab outside of their scheduled lab times to gain additional practice.

S. Classroom Expectations:

Do not sleep in class.

Look at the course calendar and read assigned material before class to have a general understanding of the information presented. Be prepared to participate in class discussions. Ask and answer questions.

Read lab assignments prior to lab. Know the material before coming to lab to avoid having to read the material for the first time during lab when hands-on practicing should occur.

Complete and turn in homework on time.

Come to class with the required material: textbooks, class notes, workbooks, notebooks, homework, assignments, etc.

Demonstrate professional behavior and use language appropriate for classroom learning experience.

When tutoring is offered and suggested, take advantage of the opportunity.

Use all resources available to you to help understand the material: instructors, tutors, Canvas, class notes, homework assignments, group activities, textbooks, lab images

Stay on task when given in-class activities and group assignments. If a group finishes early the members should read and review material presented in class, update class notes or any other educational activity. Ask the instructor if there are any questions.

Treat other class members with respect at all times.

Cell phone use is not permitted during class unless the instructor asks you to use your cell phone for learning activities. Any student's cell phone that rings, vibrates loudly, or is used for texting during class will result in a \$1.00 fine from that student. Monies collected from cell phone fines will be donated to the Robert L. Garber Scholarship for radiology students.

Policy on Social Media

All course material (lectures, slides, documents, worksheets, tests, lab activities, and all other material from this course and on Evolve) is presented with a non-written copyright which prohibits students from using the material without the instructor's permission. Students are not permitted to post course material or take pictures of lab procedures and post the information on ANY webpage or social media device. The use of the faculty name or course name is prohibited.

T. College Procedures/Policies:

Important information regarding College Procedures and Policies can be found on the [syllabus supplement](#) located at <https://sharept.ncstatecollege.edu/committees/1/curriculum/SiteAssets/SitePages/Home/SYLLABUS%20SUPPLEMENT.pdf>

The information can also be found in Canvas