

RMH School of Radiologic Technology

Course Catalog
2026/2027

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Curriculum

Fall Semester I

Number	Name	Credit
RAD 111	Radiologic Science I/Intro to Radiation Protection	4
RAD 121	Radiographic Procedures I	4
RAD 130	Elementary Clinical Procedures I	2
RAD 125	Patient Care Procedures	2
	Semester Total	**12**

Spring Semester I

Number	Name	Credit
RAD 112	Radiologic Science II	4
RAD 131	Elementary Clinical Procedures II	3
RAD 106	Human Disease and Radiography	4
RAD 122	Radiographic Procedures II	4
	Semester Total	**15**

Summer Semester

Number	Name	Credit
RAD 231	Advanced Clinical Procedures I	6
	Semester Total	**6**

Fall Semester II

Number	Name	Credit
RAD 205	Radiation Protection & Radiobiology	3
RAD 215	Correlated Radiographic Theory	4
RAD 222	Film Critique & Image Analysis I	1
RAD 232	Avanced Clinical Procedures II	4
RAD 246	Digital Radiography	4
	Semester Total	**16**

Spring Semester II

Number	Name	Credit
RAD 233	Advanced Anatomy & Physiology	3
RAD 244	Film Critique & Image Analysis II	1
RAD 255	Radiographic Equipment	3
RAD 266	Radiographic Sciences III	3
RAD 290	Clinical Practice	4
RAD 299	Radiographic Research Studies	2
	Semester Total	**16**
	Total Program Credit Hours	**65**

Fall 1

Course Syllabi

RAD 111 – Radiologic Science I/Introduction to Radiation Protection

Fall I

Credits:4

Clock Hours: 60 Hours Lecture

Instructor: Russell Crank
Email: rhcrank@sentara.com

Course Description

The student will learn the basic concepts of atomic structure, electricity, electromagnetism, electromagnetic spectrum, and the energy and energy transformation required in the production of radiation. Exposure factors and techniques dealing with radiation safety will be discussed. Discussion of the circuitry common to most radiographic equipment and the methods of x-ray beam for radiographic purposes.

Evaluation Techniques

- Quizzes
- Tests
- Final Examination

Books and Materials

Radiographic Science for Technologist: Bushong; 13th Edition

Digital Radiography and PACs: Carter, 4th Edition

Course Objectives

Students satisfactorily completing this course will:

- Define health and the basic terms in radiology.
- Identify types and uses of radiographic equipment.
- Discuss ethical and legal considerations.
- Name the basic exposure factors.
- State the goals and discuss the concept of radiation protection.
- Discuss basic principles of radiation protection for self, staff, and patients.
- Understand an introduction to radiation quantities and units of measure.
- Discuss the ALARA principle and the cardinal rules of radiation protection.
- Identify types and uses of radiologic equipment.
- Discuss basic safety considerations for self and patients in physically handling patients.
- Identify symbols used in x-ray circuitry schematic.
- Distinguish types of transformers and generators and explain their function.
- Explain the conditions necessary for x-ray production and outline the controlling factors.
- Identify, define, and calculate various forms of energy.
- Identify and explain the components of matter and the atom.

- Interpret the periodic table.
- Define terms relating to ionization and transitional elements.
- Explain the types of radioactivity.
- Explain wave and particle theory.
- Explain the inverse square law, direct square law and its application to radiation.
- Know the basic concepts of electricity, electrostatics, magnets, magnetism, and electromagnetism.
- Basic equipment components including optimal imaging standards, exposure factors, radiation safety, and reduction of scatter.
- Know the components and wavelengths of the electromagnetic spectrum.
- Solve problems using the 15% rule.
- Name the major components of the x-ray tube and their function in the production of radiation.
- Explain how MAS/KVP is calculated.
- Explain the basic operation of the x-ray tube.
- Define half value layer and describe its application in terms of radiation output and patient dose.
- List and differentiate the x-ray interactions with matter.
- Describe factors affecting the quality and quantity of an x-ray beam.
- Identify the types of radioactivity and explain the atomic structure of radioactive structure and decay.
- Summarize wave rectification.
- MRI safety.
- Intro to digital radiography.

Course Content

- Basic Radiation Protection
- Atomic Structure
- Electricity
- Transformers/Autotransformers
- Rectification
- Radioactivity
- Exposure factors, techniques, and radiation safety
- Production of x-rays
- Basic X-ray Machine Circuits
- Electron-Target Interactions
- X-ray Interactions and Attenuation
- Magnetism
- Electromagnetism
- Electromagnetic Spectrum

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

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_____
Instructor's Signature

_____
Date

Revised: 7/25
Last Reviewed: 8/26

RAD 121 – Radiographic Procedures

Fall I

Credits:4 (3 Lecture & 1 Lab)

Clock Hours: 60 Hours Lecture & 33.75 Hours Lab

Instructor: Amber Rinker
Email: aerinker@sentara.com

Prerequisites

BIO 141 & BIO 142

Course Description

This course is divided into two concurrent components. The two components are radiologic anatomy and radiographic positioning. Radiologic anatomy introduces the student to the architectural plan of the body with emphasis on the structure and function of the skeleton and radiographic positioning terminology. This section of radiographic procedures will focus on the thoracic and abdominal cavities, bone development, upper and lower extremities, shoulder girdle, bony thorax, and gastrointestinal systems. The appearance of the structure of these anatomical categories on a radiograph will be emphasized. Radiographic positioning will cover the manipulation of radiographic equipment, accessories, and the patient to produce the standard radiographic images of each body part.

Evaluation Techniques

- Tests (50%)
- Lab Examinations (25%)
- Final Examination (25%)

Books and Materials

Merrill's Atlas of Radiographic Positions and Radiologic Procedures: 16th Edition, by Frank, Long & Curtis

Course Objectives

Students satisfactorily completing this course will:

- Define medical terms relating to human anatomy and patient positioning.
- Name the body cavities, regions, and basic body habitus.
- Identify the structures within the chest, abdomen, upper and lower extremities, shoulder girdle, and bony thorax.
- Evaluate images for proper technical factors and correct positioning.
- Simulate in a lab setting, the positions for radiographing the chest, abdomen, upper and lower extremities, shoulder girdle, and bony thorax.
- Proper radiation safety is taught with each unit.
- In the lab setting, make phantom exposures using proper measurements and technique selection prior to beginning clinical rotations.

Course Content

- Body Cavities
    - Quadrant regions

- Thoracic Cavity
  - Pathway of air
  - Chest structures
    - Projections & central rays
    - Appearance on a radiograph
- Abdominal Cavity
  - Body habitus
  - Abdominal organs
    - Projections & central ray
    - Appearance on a radiograph
- Upper Extremities
  - Anatomy, positioning, special projections, and appearance on a radiograph
    - Finger, hand, wrist, forearm, and elbow
- Lower Extremities
  - Anatomy, positioning, special projections, and appearance on a radiograph
    - Toes, foot, ankle, os calcis, tib-fib, knee, and patella
- Shoulder Girdle
  - Anatomy, positioning, special projections, and appearance on a radiograph
    - AC Joints, humerus, shoulder, clavicle, and scapula
- Bony Thorax
  - Anatomy, positioning, special projections, and appearance on a radiograph
    - Ribs, sternum, and SC joints

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 1/26
Last Reviewed: 8/26

RAD 125 – Patient Care Procedures

Fall I

Credits:2

Clock Hours: 30 Hours of Lecture

Instructor: Amber Rinker
Email: aerinker@sentara.com

Prerequisites

Concurrent with RAD 121

Course Description
This course provides the student with the skills necessary for proper patient care. A focus is placed on communication, patient needs, and handling for radiographic procedures, patient care procedures in specific situations and basic first aid pertinent to radiography procedures.

Evaluation Techniques

- Tests (75%)
- Final Examination (25%)
- Demonstrations

Books and Materials

Introduction to Radiologic Sciences and Patient Care: 8th Edition, Adler, Carlton, & Stewart

Course Objectives

Students satisfactorily completing this course will:

- Define terms associated with radiologic technology.
- Discuss specialty areas within radiology. Areas include:
  - Mammography, CT, MRI, Ultrasound, Nuclear Medicine, PET, Radiation Therapy, Interventional /Cardia Interventional Radiography
- Discuss career opportunities in radiologic technology.
- Explanation of SRMH Medical Center and the radiology departments' organizational structure.
- Discuss the clinical education process and methods of assessment.
- Discuss interpersonal communication to include modes of communication, challenges in communication, and patient education.
- Discuss the difference between objective and subjective data.
- Demonstrate proper body mechanics in relation to patient care, transfer, comfort, and safety.
- Demonstrate providing assistance to patients with medical equipment.
- Identify specific patient considerations, conditions, and procedures.
- Demonstrate proper immobilization techniques.
- Discuss practices for routine monitoring of patients including vital signs, physical signs, and symptoms, fall prevention and documentation.
- Discuss infection control principles.
- Discuss principles of aseptic and non-aseptic techniques.
- Discuss signs and care of during various medical emergencies.
- Identify principles of drug administration and routes of administration.

- Identify ethical and legal aspects of the radiology profession to include patient's rights, legal issues, and the ARRT Standards of Ethics.
- Discuss proper handling and disposal of toxic or hazardous materials.

Course Content

- Introduction to Imaging and Radiologic Science
- Professional Organizations
- Education Survival Skills
- Critical Thinking & Problem-Solving Strategies
- Introduction to Clinical Education
- Radiology Administration
- Patient Interactions
- History Taking
- Safe Patient Movement & Handling Techniques
- Immobilization Techniques
- Vital Signs, Oxygen, Chest Tubes, and Lines
- Infection Control
- Aseptic & Non-aseptic Techniques
- Medical Emergencies
- Introduction to Pharmacology
- Principles of Drug Administration
- Contrast Media & Introduction to Radiopharmaceuticals
- Ethical & Legal Issues

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/24
Last Reviewed: 8/26

RAD 130 – Elementary Clinical Procedures

Fall I

Credits:2

Clock Hours: 112 Clinical Hours

Instructors: Carla Williams, Amber Rinker, Elizabeth Estep

Prerequisites

Concurrent with RAD 121

Course Description

To acquaint the student with the hospital environment through supervised participation of theories presented in the classroom. Emphasis on patient care, protocol in the hospital and the radiology department, identification of radiographic equipment and supplies, office and reception procedures, and general diagnostic areas.

Evaluation Techniques

- Completed Weekly Clinical Worksheets - 33%
- Clinical Instructors' Evaluation – 33%
- Completed Weekly Staff Evaluations – 33%
  - Demonstration
  - Active participation

Books and Materials

Radiographic Positioning Book

Course Objectives

Students satisfactorily completing this course will:

- Demonstrate proper body mechanics in transporting, positioning, and moving patients.
- Provide quality patient care physically, mentally, and emotionally.
- Properly describe the flow of an inpatient and outpatient through the radiology department along with the appropriate paperwork.
- Describe the flow process of patient images in the radiology department.
- Identify the diagnostic radiographic equipment within the department explaining basic uses and functions of each.
- Demonstrate professionalism through appearance, communication with departmental personnel, physicians, and patients, and personal mannerisms in handling self and patients.
- Adapt to routine practices within the clinical setting.
- Become familiar with various radiographic positioning devices.
- Adhere to the dress code, departmental and institutional rules, regulations, and policies.
- Evaluate information on the patient requisition relating any necessary information to the patient's chart.
- Meet the specified objectives of each clinical assignment.
- Successfully complete worksheets for each clinical assignment.

- Perform radiographic procedures as presented in RAD 121 and while under direct supervision.
- Keep clinical experience records up to date.
- Assist in the selection of radiographic exposure factors.
- Identify quality factors on images.

Course Content

Rotations in:

- Fluoroscopy
- General Radiography
- Reception
- Transport
- Portable/Surgery
- Nursing
- Orthopedics

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/23
Last Reviewed: 8/26

Clinical Grading

RAD 130

Fall 1

Clinical Paperwork – 33%

**All paperwork must be turned in within 2 weeks of your last day of the rotation/week.

Log Sheet
Tech Evaluation of Student
Student Evaluation of Tech
Summary

Each time you don't have your paperwork turned in within the 2 week time frame you will receive an X. This is how your grade will reflect…

2-3 - Xs – 86/B
4 - Xs – 78/C
5 or more - Xs – 70/D and you are put on probation

Clinical Evaluations – 33%

Clinical evaluations will now be based upon points. We will average each evaluation for your final grade for this portion of your clinical grade.

20-24 points – 100
16-19 points – 94
8-15 points – 86
5-7 points – 78
4 and below – 70

Clinical Instructor Evaluation – 33%

See sheet

Revised: 7/23
Last Reviewed: 8/26

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RAD 130 - Clinical Grading Form

Fall 1

Competency-Based Clinical Evaluation System for Student Radiographers
Evaluation of professional ethics and attitudes

STUDENT'S NAME: _____ SEMESTER: _____

Criteria for Evaluation/Instructor Evaluation The student exhibits:	-2
1. Exemplifies respect for SRMH School of Radiologic Technology staff	
2. Student accepts constructive criticism from SRMH School of Radiology staff.	
3. Student adheres to all rules and regulations set forth in the handbook.	
4. Student is punctual.	
5. Student notifies staff of absence or tardiness.	
6. Student maintains a regular attendance status.	
7. Student wears appropriate uniform.	
8. Student maintains clean and well-kept hair.	
9. Student wears name badge and radiation monitoring device.	
Total points deducted	
Grade (100-points deducted)	

Clinical Instructor Evaluation Grade (33%)	
Clinical Documents Grade (33%)	
Clinical Evaluations Grade (33%)	
Final Clinical Grade	

Instructor: _____ Student: _____

Instructor: _____ Date: _____

Instructor: _____

Revised: 7/23
Last Reviewed: 8/26

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Spring I

Course Syllabi

RAD 106 – Human Disease & Radiography

Spring I

Credits: 4

Clock Hours: 60 Hours Lecture

Instructor: Elizabeth Estep
Email: esestep@sentara.com

Course Description

Introduces the various diseases and anomalies that may be manifested on the radiograph. Presents diseases related to the various body systems. Places emphasis on the relationship of the disease process and radiographic density.

Evaluation Techniques

- Tests (50%)
- Assignments (25%)
- Final Examination (25%)

Books and Materials

Merrill's Atlas of Radiographic Positions and Radiologic Procedures: 16th Edition, by Rollins, Long, & Curtis

Pathology for Imaging Technologists: 9th Edition, Kowalczyk

Course Objectives

- Students satisfactorily completing this course will:
- Define medical terms relating to human anatomy and patient positioning.
- Identify the structures within the chest, abdomen, upper and lower extremities, shoulder girdle, and bony thorax on a diagram and radiograph.
    - Describe pathological conditions and their relationships to radiographic procedures.
    - Describe complications and prognosis for classification of tumors.
    - List and define systematic classifications of disease.
    - Describe the healing process.
    - Describe the effects of disease on radiological procedures and techniques.
- Evaluate images for proper technical factors according to pathological conditions.

Course Content

- General Principles of Pathology
- Pathologies of the:
    - Respiratory System
    - Abdominal Cavity
    - Skeletal System
    - Hepatobiliary System
    - Abdominal & Gastrointestinal System
    - Urinary System
    - Reproductive System
    - Cardiovascular System

- Hemopoietic System
- Central Nervous System
- Endocrine System

- Traumatic Disease

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 1/26
Last Reviewed: 8/26

RAD 112 – Radiologic Science II

Spring I

Credits:4

Clock Hours: 60 Hours Lecture

Instructor: Russell Crank
Email: rhcrank@sentara.com

Prerequisites

RAD 111

Course Description

An introduction to the prime factors of radiographic exposure and its effect on the radiographic image. Discussion of the factors affecting radiographic definition and their influence on radiographic quality. The adjustment of the prime exposure factors and how they affect radiographic quality are presented in classroom discussion and in laboratory demonstration. Students will be involved in solving technical problems, making technical adjustments, image acquisition and manipulation, and radiation protection. Discussion of digital, fluoroscopic, and image intensification topics are discussed. Information regarding basic physics and safety of MRI/CT is included.

Evaluation Techniques

- Tests
- Quizzes
- Worksheets
- Final Exam

Books and Materials

Radiologic Science for Technologist: Bushong, 13th Edition

Digital Radiography and PAC: Carter, 4th Edition

Course Objectives

Students satisfactorily completing this course will:

- Solve problems utilizing the inverse/direct square law.
- Solve problems utilizing the 15% rule.
- Identify the anatomical and pathological conditions affecting radiographic quality.
- Name the basic factors of radiographic quality.
- Give the production of secondary/scattered radiation and the factors affecting it.
- Define filtration and name the types and kinds of filters used in radiography.
- Name the controlling and influencing factors for radiographic definition.
- Name the types and uses of beam restricting devices.
- Perform radiographic experiments as assigned.
- Define and name the controlling and influencing exposure factors of the following:
    - Radiographic density

  - Radiographic contrast
  - Radiographic distortion: size and shape
  - Radiographic detail
- Solve problems of exposure factor adjustments through KVP, MAS, distance, grids, film, and screens.
- Define HVL and describe its application in terms of radiation output and patient dosage.
- Define photographic effects and solve problems utilizing all factors.
- Name the factors of material & geometric unsharpness and their effect on detail.
- Solve problems dealing with material, geometric, and total unsharpness.
- Name the types of technique charts and how to formulate each.
- Give the conversion factors for the use of various grids and grid ratios.
- Analyze relationships of factors affecting exposure calculations.
- Mobile radiography (portables, OR, C-Arm)
- Define and name the purpose of grids.
- Define quantum mottle and its effect on radiographic quality.
- Define the “Heel Effect” and how it affects radiographic quality.
- Introduction to digital radiography, CR, DR, DDR.
- MRI protocols and safety.
- Digital imaging characteristics.
- Digital imaging receptors.
- Digital spatial resolution (sampling frequency, DEL, receptor size, and matrix size)
- Image signal (exposure rated)
- Digital image display informatics
- Exam imaging artifacts and their origin in digital
- Identify and label the fluoroscopic room and its components.
- Explain the operation of the image intensifier.
- Explain the concepts of tomographic motion blue, tomographic angle, and section thickness.
- Volumetric Imaging (3D)

Course Content

- Radiographic Exposure Factors: KVP, MAS, & Distance
- Secondary radiation
- Filtration
- Beam restriction
- Anatomical and pathological conditions and their effect on radiographic quality
- 15% Rule
- Inverse/direct square law
- Components of radiographic quality and the controlling and influencing factors of each
- Contrast
- Density
- Detail
- Problem solving – adjusting technical factors.
- HVL and its application
- Radiographic experiments illustrate the effects of exposure.
- Factors on radiographic quality
- Tomography
- Image intensification

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/25
Last Reviewed: 8/26

RAD 122 – Radiographic Procedures II

Spring I

Credits: 4

Clock Hours: 60 Hours Lecture & 33.75 Lab Hours

Instructor: Amber Rinker
Email: aerinker@sentara.com

Prerequisites

RAD 121 & Concurrent with RAD 131

Course Description

Continues procedures for positioning the patient's anatomical structures relative to x-ray beam and image receptor. Emphasizes procedures for routine examination of the pelvic girdle, vertebral column, skull, and contrast studies of internal organs.

Evaluation Techniques

- Tests (50%)
- Assignments (25%)
- Final Examination (25%)

Books and Materials

Merrill's Atlas of Radiographic Positions and Radiologic Procedures: 16th Edition, by Rollins, Long, & Curtis

Course Objectives

Students satisfactorily completing this course will:

- Identify the structures of the digestive, urinary, and biliary systems, pelvic girdle, vertebral column, and skull on a diagram and radiograph.
- Simulate in a laboratory the positions for radiographing the vertebral column, skull, pelvic girdle, and digestive, urinary, and biliary systems.
- Evaluate images for proper technical factors and correct positioning.
- In the lab setting, make phantom exposures, using proper measurements and technique selection.
- Distinguish the difference between typical vertebrae in each region of the spine.

Course Content

- Anatomy & positioning off:
  - Pelvic Girdle
  - Spinal Column
  - Biliary System

- Digestive System
- Urinary System
- Skull/Headwork

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 8/25
Last Reviewed: 8/26

RAD 131 – Elementary Clinical Procedures II

Spring I

Credits:3

Clock Hours: 240 Clinical Hours

Instructors: Carla Williams, Amber Rinker, Elizabeth Estep

Prerequisites

RAD 121

Course Description

To acquaint the student with the hospital environment through supervised participation of theories presented in the classroom. Emphasis on patient care, protocol in the hospital and the radiology department, identification of radiographic equipment, supplies, and general diagnostic area.

Evaluation Techniques

- Completed Weekly Clinical Worksheets (33%)
- Clinical Instructor's Evaluation (33%)
- Completed Weekly Staff Evaluations (33%)
  - Demonstration & active participation

Books and Materials

Radiographic Positioning Book

Course Objectives

Students satisfactorily completing this course will:

- Demonstrate proper body mechanics in transporting, positioning, and moving patients.
- Provide quality patient care physically, mentally, and emotionally.
- Properly describe the flow of an inpatient and outpatient through the radiology department along with the appropriate paperwork.
- Describe the flow process of patient images in the radiology department.
- Identify the diagnostic radiographic equipment within the department explaining basic uses and functions of each.
- Demonstrate professionalism through appearance, communication with departmental personnel, physicians, and patients, and personal mannerisms in handling self and patients.
- Adapt to routine practices within the clinical setting.
- Become familiar with various radiographic positioning devices.
- Adhere to the dress code, departmental and institutional rules, regulations, and policies.

- Evaluate information on the patient requisition relating any necessary information to the patient's chart.
- Meet the specified objectives of each clinical assignment.
- Successfully complete worksheets for each clinical assignment.
- Perform radiographic procedures as presented in RAD 121 and while under direct supervision.
- Keep clinical experience records up to date.
- Assist in the selection of radiographic exposure factors.
- Identify quality factors on images.

Course Content

- Fluoroscopy
- General Radiography
- Reception
- Transport
- Portable/Surgery
- Nursing
- Orthopedics

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/23
Last Reviewed: 8/26

Clinical Grading

RAD 131

Spring I

Clinical Paperwork – 33%

**All paperwork must be turned in within 2 weeks of your last day of the rotation/week.

Log Sheet
Tech Evaluation of Student
Student Evaluation of Tech
Summary

Each time you don't have your paperwork turned in within the 2 week time frame you will receive an X. This is how your grade will reflect…

2-3 - Xs – 86/B
4 - Xs – 78/C
5 or more - Xs – 70/D and you are put on probation

Clinical Evaluations – 33%

Clinical evaluations will now be based upon points. We will average each evaluation for your final grade for this portion of your clinical grade.

20-24 points – 100
16-19 points – 94
8-15 points – 86
5-7 points – 78
4 and below – 70

Clinical Instructor Evaluation – 33%

See sheet

Revised: 7/23
Last Reviewed: 8/26

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RAD 131 - Clinical Grading Form

Spring I

Competency-Based Clinical Evaluation System for Student Radiographers
Evaluation of professional ethics and attitudes

STUDENT'S NAME: _____SEMESTER: _____

Criteria for Evaluation/Instructor Evaluation The student exhibits:	-2
1. Exemplifies respect for SRMH School of Radiologic Technology staff	
2. Student accepts constructive criticism from SRMH School of Radiology staff.	
3. Student adheres to all rules and regulations set forth in the handbook.	
4. Student is punctual.	
5. Student notifies staff of absence or tardiness.	
6. Student maintains a regular attendance status.	
7. Student wears appropriate uniform.	
8. Student maintains clean and well-kept hair.	
9. Student wears name badge and radiation monitoring device.	
Total points deducted	
Grade (100-points deducted)	

Clinical Instructor Evaluation Grade (33%)	
Clinical Documents Grade (33%)	
Clinical Evaluations Grade (33%)	
Final Clinical Grade	

Instructor: _____ Student: _____

Instructor: _____ Date: _____

Instructor: _____

Revised: 7/23
Last Reviewed: 8/26

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Summer

Course Syllabi

RAD 231 – Advanced Clinical Procedures

Summer

Credits: 6

Clock Hours: 480

Instructors: Carla Williams, Amber Rinker, Elizabeth Estep

Prerequisites

RAD 131

Course Description

This course is a continuation of RAD 131. This semester the student is provided with the opportunity to operate more independently in all areas of basic radiography. The student will begin to rotate through some of the specialized areas. Competency testing continues with development in proficiency.

Evaluation Techniques

- Clinical Instructor's Evaluation (25%)
- Competency Based Evaluations (25%)
- Completed Weekly Staff Evaluations (25%)
  - Demonstrations
  - Image Analysis
- Completed Worksheets (25%)

Course Objectives

Students satisfactorily completing this course will:

- Continue to demonstrate the objectives from the previous clinical radiography course.
- Begin to demonstrate performance competency in radiographic procedures.
- Select proper radiographic exposure factors.
- Evaluate radiographic image quality.
- Repeat unsatisfactory images with assistance.
- Perform radiographic procedures with indirect supervision on areas where performance competency has been demonstrated.
- Identify radiographic equipment and the uses of each in surgery and on portables.
- Become acquainted with the surgical suite and radiographic procedures done there.
- Adapt radiographic procedures and techniques to portable radiography.
- Meet specified objectives for specialty area rotations.

Course Content

- Rotation in:
  - Fluoroscopy
  - General Radiography

- Trauma
- Portable/Surgery
- CT
- MRI
- Radiation Therapy
- Special Procedures
- Nuclear Medicine
- PET
- Ultrasound
- Orthopedics

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/23
Last Reviewed: 8/26

Clinical Grading

RAD 231

Clinical Paperwork – 25%

**All paperwork must be turned in within 2 weeks of your last day of the rotation/week.

- Log Sheet
- Tech Evaluation of Student
- Student Evaluation of Tech
- Summary

Each time you don't have your paperwork turned in within the 2 week time frame you will receive an X. This is how your grade will reflect…

- 2-3 - Xs – 86/B
- 4 - Xs – 78/C
- 5 or more - Xs – 70/D and you are put on probation

Clinical Evaluations – 25%

Clinical evaluations will now be based upon points. We will average each evaluation for your final grade for this portion of your clinical grade.

24-27 points – 100
18-23 points – 94
9-17 points – 86
6-8 points – 78
5 and below – 70

Competency Based Evaluation – 25%

Complete required number of competencies per semester – 100/A
1-2 incomplete competencies – 86/B
3-4 incomplete competencies – 78/C
5 or more incomplete competencies – 70/D

Clinical Instructor Evaluation – 25%

See sheet

Revised: 7/23
Last Reviewed: 8/26

Sentara

RAD 231 - Clinical Grading Form

Summer

Competency-Based Clinical Evaluation System for Student Radiographers
Evaluation of professional ethics and attitudes

STUDENT'S NAME: _____SEMESTER: _____

Criteria for Evaluation/Instructor Evaluation The student exhibits:	-2
1. Exemplifies respect for SRMH School of Radiologic Technology staff	
2. Student accepts constructive criticism from SRMH School of Radiology staff.	
3. Student adheres to all rules and regulations set forth in the handbook.	
4. Student is punctual.	
5. Student notifies staff of absence or tardiness.	
6. Student maintains a regular attendance status.	
7. Student wears appropriate uniform.	
8. Student maintains clean and well-kept hair.	
9. Student wears name badge and radiation monitoring device.	
Total points deducted	
Grade (100-points deducted)	

Clinical Instructor Evaluation Grade (25%)	
Clinical Documents Grade (25%)	
Clinical Evaluations Grade (25%)	
Competency Based Evaluations (25%)	
Final Clinical Grade	

Instructor: _____ Student: _____

Instructor: _____ Date: _____

Instructor: _____

Revised: 7/23
Last Reviewed: 8/26

Fall II

Course Syllabi

RAD 205 – Radiation Protection & Radiobiology

Fall II

Credits: 3

Clock Hours: 45

Instructor: Carla Williams
Email: cfwilli2@sentara.com

Prerequisites

RAD 111 & RAD 112

Course Description

Studies methods and devices used for protection from ionizing radiation. Teaches theories of biological effects, cell and organism sensitivity, and the somatic and genetic effects of ionizing radiation. Presents current radiation protection philosophy for protecting the patient and technologist.

Evaluation Techniques

- Tests
- Final Examination

Books & Materials

Radiation Safety and Radiobiology in Medical Imaging: 10th Edition, Statkiewicz, Visconti & Ritenour

Radiographic Science for Technologist: 13th Edition, Bushong

Course Objectives

Students satisfactorily completing this course will:

- Explain the need for radiation protection procedures.
- Identify the various sources of natural background ionizing radiation and the different sources of manmade or artificial ionizing radiation.
- Explain the responsibility of radiation protection in the field of radiology.
- Define terms pertinent to radiation protection.
- Identify interactions of radiation as it passes through matter.
- Identify the effects of radiation on patient, images, and radiographer.
- Determine the dose equivalent and absorbed dose for different ionizing radiations.
- Explain the results of biological damage resulting from irradiation of human tissue.
- Explain the ALARA concept and the limits for occupational workers.
- Identify the agencies dealing with radiation exposure and protection.
- Define and explain terms relating to the human body.
- List the three levels of biological dames to living cells and systems as a result of ionizing radiation.

- Identify and describe long term and short-term effects of ionizing radiation.
- Explain how patient dosage can be reduced during exposure utilizing beam restricting filtration, and shield devices.
- State and explain the inverse square law.
- Identify the various radiation protection measures.

Course Content

- Basis for Radiation Protection
- Radiation:
  - Types, sources, and doses received.
- Radiation Quantities & Units
- Biologic Effects
- Radiobiology
- Early and Late Effects of Radiation
- Radiation Monitoring & Dose Limits
- Protecting the Radiographer
- Protecting the Patient

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 8/26
Last Reviewed: 8/26

RAD 215 – Correlated Radiographic Theory

Fall II

Credits: 4

Clock Hours: 60 Hours Lecture & 11.25 Lab Hours

Instructor: Amber Rinker
Email: aerinker@sentara.com

Prerequisites

RAD 121 & RAD 122

Course Description

This course provides the student with skills for proper patient care and radiographic positioning of the trauma and pediatric patient and surgical procedures.

Evaluation Techniques

- Participation
- Tests
- Labs
- Final Examination

Books & Materials

Introduction to Radiologic Sciences and Patient Care: 8th Edition, Adler, Carlton, & Stewart

Merrill's Atlas of Radiographic Positions and Radiologic Procedures: 16th Edition, by Rollins, Long, & Curtis

Pathology for Imaging Technologists: 9th Edition, Kowalczyk

Mosby's Comprehensive Review of Radiography: Callaway, 8th Edition

Course Objectives

Students satisfactorily completing this course will:

- Define terms associated with trauma, pediatric, and surgical patient.
- List the sequence of routine procedures such as trauma, pediatric, surgical patients, etc.
- Describe the possible adaptations in positioning and techniques for trauma, pediatric, and surgical procedures, and diagnostic procedures.
- Identify different methods of immobilization.
- Describe methods of radiation protection for trauma, pediatric, and surgical procedures.
- Name the possible complications associated with trauma, pediatric, and surgical procedures, etc. and the special considerations for each case.

Course Content

- Pediatric Radiography
- Trauma Radiography of the Extremities, Spine, & Skull
- Surgical Radiography
- Diagnostic Radiography
- Pathology
- Patient Care

Grading Evaluation

Tests:	600 points
Participation:	140 points
Labs:	400 points
Exam:	200 points
Total Points:	1340 points

Surprise Labs:

Each student will have four surprise labs per semester during their second year for a total of 8 between Correlated Radiographic Theory (RAD 215) and Advanced Anatomy and Physiology (RAD 233). The student must pass with a 94 or above to show proficiency. If the student does not pass with a 94 or above, the student will be required to write a review on failed competency, simulate procedure for instructors and the student will be required to obtain the failed competency on a real patient to meet graduation requirements.

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 8/26
Last Reviewed: 8/26

RAD 222 – Film Critique and Image Analysis I

Fall II

Credits: 1

Clock Hours: 15 Hours

Instructor: Elizabeth Estep
Email: esestep@sentara.com

Prerequisites

RAD 122

Course Description

This course introduces the student to human anatomy as seen in radiographic imaging. Anatomy of the entire human body will be studied using various exams with radiographic images. Anatomy and selected pathologies will be discussed in the various body regions. Students and department performed images will be analyzed to evaluate quality. The analysis and evaluation of performed images will be discussed.

Evaluation Techniques

- Final Examination (25%)
- Image Analysis Quizzes (75%)

Books & Materials

Merrill's Atlas of Radiographic Positions and Radiologic Procedures: 16th Edition, by Rollins, Long, & Curtis

Use of Resources

- Various Web-Based Resources
- Image Analysis

Course Objectives

Students satisfactorily completing this course will:

- Differentiate major anatomical regions on radiographic images.
- Identify various projections of performed studies.
- Identify quality performed images versus images needing improvement.
- Describe anatomical relationships of key anatomical structures.
- Actively participate in image analysis and film critique.

Course Content

- Anatomic Structure
- Critical Thinking

- Image Appearance Standards
- Imaging Standards
- Image Appearance Characteristics
- Procedural Factors
- Corrective Action

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/25
Last Reviewed: 8/26

RAD 232 – Advanced Clinical Procedures II

Fall II

Credits: 4

Clock Hours: 315 Hours (21 Hours/week)

Instructor: Carla Williams, Amber Rinker, Elizabeth Estep

Prerequisites

RAD 231

Course Description

This course is a continuation of RAD 231 with an introduction to trauma and some specialty areas. This is a period for the student to work more independently thus gaining self-confidence. Basic radiographic procedures are demonstrated with competency testing.

Evaluation Techniques

- Clinical Instructor's Evaluation (25%)
- Competency Based Evaluations (25%)
- Completed Weekly Staff Evaluations (25%)
  - Demonstrations
  - Image Analysis
- Completed Worksheets (25%)

Course Objectives

Students satisfactorily completing this course will:

- Continue to demonstrate the objectives from the previous clinical radiography course.
- Demonstrate performance competency in radiography of the skull and of contrast media studies.
- Meet the specified clinical objectives of each clinical assignment.
- Continue to develop increased speed, accuracy, and confidence in performing radiographic procedures.
- Begin to recognize pathological conditions and findings on images as demonstrated by the radiologist within the reading area.
- Recognize and apply knowledge to pathological conditions that affect radiographic techniques and procedures.
- Continue to work on completing competency base evaluations.

Course Content

- Rotation in:
  - Fluoroscopy
  - General Radiography
  - Trauma

- Portable/Surgery
- Special Procedures
- Heart Catheterization
- Orthopedics

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/23
Last Reviewed: 8/26

Clinical Grading

RAD 232

Clinical Paperwork – 25%

**All paperwork must be turned in within 2 weeks of your last day of the rotation/week.

- Log Sheet
- Tech Evaluation of Student
- Student Evaluation of Tech
- Summary

Each time you don't have your paperwork turned in within the 2 week time frame you will receive an X. This is how your grade will reflect…

- 2-3 - Xs – 86/B
- 4 - Xs – 78/C
- 5 or more - Xs – 70/D and you are put on probation

Clinical Evaluations – 25%

Clinical evaluations will now be based upon points. We will average each evaluation for your final grade for this portion of your clinical grade.

24-27 points – 100
18-23 points – 94
9-17 points – 86
6-8 points – 78
5 and below – 70

Competency Based Evaluation – 25%

Complete required number of competencies per semester – 100/A
1-2 incomplete competencies – 86/B
3-4 incomplete competencies – 78/C
5 or more incomplete competencies – 70/D

Clinical Instructor Evaluation – 25%

See sheet

Revised: 7/23
Last Reviewed: 8/26

Sentara

RAD 232 - Clinical Grading Form

Fall II

Competency-Based Clinical Evaluation System for Student Radiographers
Evaluation of professional ethics and attitudes

STUDENT'S NAME: _____SEMESTER: _____

Criteria for Evaluation/Instructor Evaluation The student exhibits:	-2
1. Exemplifies respect for SRMH School of Radiologic Technology staff	
2. Student accepts constructive criticism from SRMH School of Radiology staff.	
3. Student adheres to all rules and regulations set forth in the handbook.	
4. Student is punctual.	
5. Student notifies staff of absence or tardiness.	
6. Student maintains a regular attendance status.	
7. Student wears appropriate uniform.	
8. Student maintains clean and well-kept hair.	
9. Student wears name badge and radiation monitoring device.	
Total points deducted	
Grade (100-points deducted)	

Clinical Instructor Evaluation Grade (25%)	
Clinical Documents Grade (25%)	
Clinical Evaluations Grade (25%)	
Competency Based Evaluations (25%)	
Final Clinical Grade	

Instructor: _____ Student: _____

Instructor: _____ Date: _____

Instructor: _____

Revised: 7/23
Last Reviewed: 8/26

RAD 246– Digital Radiography

Fall II

Credits: 4

Clock Hours: 60 Hours Lecture

Instructor: Russell Crank
Email: rhcrank@sentara.com

Prerequisites

RAD 112 & RAD 231

Course Description

Evaluation Techniques

- Tests
- Final Examination
- Quizzes
- Research Paper/Case Study

Books & Materials

Radiographic Science for Technologists: Bushong, 13th Edition

Digital Radiography and PACs: Carter, 4th Edition

Mosby's Comprehensive Review of Radiography: Callaway, 8th Edition

Use of Resources

- Various Journal Articles
- PowerPoints
- Handouts

Course Objectives

Students satisfactorily completing this course will:

- Recognize obstacles to critical thinking.
- Raise questions of a moral and ethical professional nature.
- Integrate critical thinking, professionalism, and problem solving into the clinical environment.
- Display empathy and concern for patients through discussions in class.
- Discuss issues with scatter radiation.
- Describe the tube/target composition, focal spot size, KVP, image receptors, and tube filtration.
- Research a specialty area.

- Identify equipment and accessory items.
- Identify differences between density and contrast.
- Relate to the research and development of digital imaging.
- Discuss the components of a digital radiographic/fluoroscopy system and its functions.
- Explain picture archiving and teleradiography systems.
- Demonstrate continuing score improvement on the development tests.
- PSP (photo-stimulable phosphor)
- Flat panel detectors (direct & indirect)
- CR plate eraser/equipment cleanliness
- Digital imaging receptor systems artifacts/malfunctions
- Digital imaging processing
- Image display characteristics
- Tomosynthesis
- Developmental Testing
- Density/contrast
- Equipment Operation

Course Content

- Critical Thinking
- Equipment Operation
- Image Acquisition
- Digital Imaging
- Scatter Radiation
- Density/Contrast/Brightness/Grey Scale

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 1/26
Last Reviewed: 8/26

Sentara®

Spring II

Course Sylllabi

RAD 233 – Advanced Anatomy and Physiology

Spring II

Credits: 3

Clock Hours: 45 Hours of Lecture & 11.75 Hours of Lab

Instructor: Amber Rinker
Email: aerinker@sentara.com

Prerequisites

RAD 121, RAD 122, RAD 125, RAD 106, and RAD 215

Course Description

This course will pull together all the anatomy, positioning, pathology, and patient care material.

Evaluation Techniques

- Tests
- Labs
- Weekly Film Assignments
- Classroom Participation
- Final Exam Evaluation

Books & Materials

Introduction to Radiologic Sciences and Patient Care: 8th Edition, Adler, Carlton, & Stewart

Merrill's Atlas of Radiographic Positions and Radiologic Procedures: 16th Edition, by Rollins, Long, & Curtis

Pathology for Imaging Technologists: 9th Edition, Kowalczyk

Mosby's Comprehensive Review of Radiography: Callaway, 8th Edition

Course Objectives

Students satisfactorily completing this course will:

- Identify anatomical and pathological structures, radiographic procedures, and positioning.
- Patient care management for radiographic procedures.
- Radiographic terminology.

Course Content

- Patient Care and Management
- Radiographic Anatomy and Procedures
- Radiographic Pathology

- Medical Terminology

Grading Evaluation

Tests:	600 points
Labs:	400 points
Weekly Film Assignments:	130 points
Scenarios & Classroom Participation:	140 points
Exam:	200 points
Total Points Possible:	1470 points

Surprise Labs

Each student will have four surprise labs per semester during their second year for a total of 8 between Correlated Radiographic Theory (RAD 215) and Advanced Anatomy and Physiology (RAD 233). The student must pass with a 94 or above to show proficiency. If the student does not pass with a 94 or above, the student will be required to write a review on failed competency, simulate procedure for instructors and the student will be required to obtain the failed competency on a real patient to meet graduation requirements.

Attendance
Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 8/26
Last Reviewed: 8/26

RAD 244 – Film Critique and Image Analysis II

Spring II

Credits: 1

Clock Hours: 15 Hours

Instructor: Elizabeth Estep
Email: esestep@sentara.com

Prerequisites

RAD 222

Course Description

This course progresses the student with regard to human anatomy as seen on radiographic imaging. Anatomy of the entire human body will be studied using various exams with radiographic images. Anatomy and selected pathologies will be discussed in the various body regions. Students and department performed images will be analyzed to evaluate quality. The analysis and evaluation of performed images will be discussed.

Evaluation Techniques

- Final Examination (25%)
- Image Analysis Quizzes (75%)

Books & Materials

Merrill's Atlas of Radiographic Positions and Radiologic Procedures: 16th Edition, by Rollins, Long, & Curtis

Use of Resources

- Various Web-Based Resources
- Image Analysis

Course Objectives

Students satisfactorily completing this course will:

- Differentiate major anatomical regions on radiographic images.
- Identify various projections of performed studies.
- Identify quality performed images versus images needing improvement.
- Describe anatomical relationships of key anatomical structures.
- Actively participate in image analysis and film critique.

Course Content

- Anatomic Structure
- Critical Thinking

- Image Appearance Standards
- Imaging Standards
- Image Appearance Characteristics
- Procedural Factors
- Corrective Action

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/25
Last Reviewed: 8/26

RAD 255 – Radiographic Equipment

Spring II

Credits: 3

Clock Hours: 45 Hours

Instructor: Russell Crank
Email: rhcrank@sentara.com

Prerequisites

RAD 111, RAD 112, RAD 246

Course Description

An investigative/research class of possible career ladders or areas of specialization in medical imaging. Various types of imaging equipment and techniques and the latest issues, trends and developments in radiology will be discussed. Developmental testing will be used to enforce student comprehension and identifying deficiencies for learning. The course will enhance the student's understanding of materials presented in the classroom.

Evaluation Techniques

- Tests
- Developmental Testing
- Final Examination

Books & Materials

Radiographic Science for Technologists: Bushong, 13th Edition

Digital Radiography and PACs: Carter, 4th Edition

Mosby's Comprehensive Review of Radiography: Callaway, 8th Edition

Use of Resources

- Various Journal Articles
- PowerPoint Presentations
- Handouts

Course Objectives

Students satisfactorily completing this course will:

- Relate the research and development of digital imaging.
- Positioning, patient care, and radiation protection.
- Scatter Radiation
- Image Production
- Equipment Operation

- Procedures
- CR/DR Topics
- Technique formulations related to radiation protection.
- Medical Descriptors
- Developmental Testing
- X-ray Emission
- Electricity, magnetism, & electromagnetism concepts

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/25
Last Reviewed: 8/26

RAD 266 – Radiologic Science III

Spring II

Credits: 3

Clock Hours: 45 Hours

Instructor: Russell Crank
Email: rhcrank@sentara.com

Prerequisites

RAD 111, RAD 112, & RAD 246

Course Description

This course will pull together all of the program material into a total perspective of the profession for radiography and medical imaging. Information will be expanded upon to test the students' understanding and knowledge of radiographic practices and procedures. The student will participate in numerous mock registry examinations and attend a student review seminar in preparation for the ARRT examination.

Evaluation Techniques

- Tests
- Final Examinations
- Category Examinations
- Research Paper

Books & Materials

Radiographic Science for Technologists: Bushong, 13th Edition

Digital Radiography and PACs: Carter, 4th Edition

Mosby's Comprehensive Review of Radiography: Callaway, 8th Edition

Corectec – Online

Use of Resources

- Videos
- PowerPoints
- Handouts
- Computer Programs
- Seminar

Course Objectives

Students satisfactorily completing this course will:

- Relate the latest research and development techniques of digital imaging.
- Imaging techniques and artifacts. Artificial Intelligence.
- Identify the controlling and influencing factors for imaging quality, image production, and image evaluation.
- Identify the CR, DR, AEC, anatomical and pathological structures, patient positioning, and patient care and management for radiographic procedures.
- PACS, HIS, RIS, Networking and workflow
- Viewing conditions, contrast resolution/dynamic range
- DICOM gray scale function
- Window level and width function
- Gross exposure errors
- Moire effect/aliasing
- SNR/CNR
- Name the measures of radiation protection for the patient and personnel.
- PSP (photo-stimulable phosphor) compared to flat panel detectors.
- Mathematical formulas
- Electron Interactions
- The controlling and influencing exposure factors.
- Geometric unsharpness/sharpness
- Radiologic equipment
- Fluoroscopic components
- Tomography
- Radiation protection
- Positioning & Patient Care
- Professionalism research paper

Course Content

- Image Production and Evaluation
- Radiation Protection & Biology
- Radiographic Equipment Operation and Maintenance

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/25
Last Reviewed: 8/26

RAD 290 – Clinical Practice

Spring II

Credits: 4

Clock Hours: 315 Hours (21 Hours/ week)

Instructor: Carla Williams, Amber Rinker, Elizabeth Estep

Prerequisites

RAD 232

Course Description

This semester the student has the opportunity to complete and correlate all clinical and didactic experiences to a high degree of efficiency and proficiency. The student can demonstrate a great deal of independence in discretion and judgment while performing basic radiographic procedures. Completion of all competency based testing and surgical sheet is required The student will finish the clinical rotations through the specialized areas.

Evaluation Techniques

- Written Clinical Exam (20%)
- Completed Staff Evaluations (20%)
  - Demonstrations
  - Active Participation
  - Image Analysis
- Clinical Instructor's Evaluation (20%)
- Competency Based Evaluations (20%)
- Complete Worksheets (20%)

Course Objectives

Students satisfactorily completing this course will:

- Use oral and written medical communication.
- Demonstrate knowledge of human structure, function, and pathology.
- Anticipate and provide basic patient care and comfort.
- Apply principles of body mechanics.
- Perform basic mathematical functions.
- Operate radiographic imaging equipment and accessory devices.
- Position the patient and imaging system to perform radiographic examinations and procedures.
- Modify standard procedures to accommodate patient condition and other variables.
- Process images.
- Determine exposure factors to obtain diagnostic quality images with minimum radiation exposure.
- Adapt exposure factors for various patient conditions, equipment, accessories, and contrast medias to maintain appropriate image quality.
- Practice radiation protection for patients, self, and others.

- Recognize emergency patient conditions and initiate first aid and basic life-support procedures.
- Evaluate radiographic images for appropriate positioning and image quality.
- Evaluate the performance of radiographic systems, know the safe limits of equipment operation, and report malfunctions to the proper authority.
- Demonstrate knowledge and skills relating to quality assurance.
- Exercise independent judgement and discretion in the technical performance of medical imaging procedures.
- Participate in quality assurance procedures.
- Complete all required competencies and surgical sheet.
- Must pass written clinical final exam.

Course Content

- Rotations – all clinical areas

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/23
Last Reviewed: 8/26

Clinical Grading

RAD 290

Written Clinical Exam – 20%

Clinical Paperwork – 20%

**All paperwork must be turned in within 2 weeks of your last day of the rotation/week.

Log Sheet
Tech Evaluation of Student
Student Evaluation of Tech
Summary

Each time you don't have your paperwork turned in within the 2 week time frame you will receive an X. This is how your grade will reflect…

2-3 - Xs – 86/B
4 - Xs – 78/C
5 or more - Xs – 70/D and you are put on probation

Clinical Evaluations – 20%

Clinical evaluations will now be based upon points. We will average each evaluation for your final grade for this portion of your clinical grade.

24-27 points – 100
18-23 points – 94
9-17 points – 86
6-8 points – 78
5 and below – 70

Competency Based Evaluation – 20%

Complete required number of competencies per semester – 100/A
1-2 incomplete competencies – 86/B
3-4 incomplete competencies – 78/C
5 or more incomplete competencies – 70/D

Clinical Instructor Evaluation – 20%

See sheet

Revised: 7/23
Last Reviewed: 8/26

Sentara

RAD 290 - Clinical Grading Form

Spring II

Competency-Based Clinical Evaluation System for Student Radiographers
Evaluation of professional ethics and attitudes

STUDENT'S NAME: _____SEMESTER: _____

Criteria for Evaluation/Instructor Evaluation The student exhibits:	-2
10. Exemplifies respect for SRMH School of Radiologic Technology staff	
11. Student accepts constructive criticism from SRMH School of Radiology staff.	
12. Student adheres to all rules and regulations set forth in the handbook.	
13. Student is punctual.	
14. Student notifies staff of absence or tardiness.	
15. Student maintains a regular attendance status.	
16. Student wears appropriate uniform.	
17. Student maintains clean and well-kept hair.	
18. Student wears name badge and radiation monitoring device.	
Total points deducted	
Grade (100-points deducted)	

Written Clinical Exam (20%)	
Clinical Instructor Evaluation Grade (20%)	
Clinical Documents Grade (20%)	
Clinical Evaluations Grade (20%)	
Competency Based Evaluations (20%)	
Final Clinical Grade	

Instructor: _____ Student: _____

Instructor: _____ Date: _____

Instructor: _____

Revised: 7/23
Last Reviewed: 8/26

RAD 299 – Radiographic Research Studies

Spring II

Credits: 2

Clock Hours: 30 Hours

Instructor: Amber Rinker, Russell Crank, Carla Williams, Elizabeth Estep

Prerequisites

RAD 121 & RAD 122

Course Description

Various subjects will be assigned to students in conducting research for oral and written presentations. Topics will include Geriatric, Pediatric, Special Procedures and Trauma. Students should have the ability to gather and interpret medical information, document details, develop and use logical reasoning and organization of ideas. Research papers should show an adequate amount of work, time, dedication and effort in order to produce a quality paper.

Evaluation Techniques

- Written Research Papers
- Oral Presentations

Use of Resources

- Various Journal Articles
- Textbooks
- Audio-visual Media
- Internet
- Libraries
- Physicians

Course Objectives

Students satisfactorily completing this course will:

- Be able to practice writing as a process including the following elements:
  - Process of collecting information
  - Process of formulating ideas
  - Able to distinguish concepts and ideas in a logical organized manner.
  - Being able to build transitions between paragraphs, revising thoughts, and proofreading papers before the final presentation.
- Identify and cite appropriate sources.
- Demonstrate the ability to write a research paper and avoid plagiarism.
- Students will possess the ability to write a paper that demonstrates the ability to define and compare topic material.
- Demonstrate knowledge of basic library/internet procedures.
- The ability to present their research paper orally to their peers.

Course Content

- Pediatric (6 years and younger)
- Geriatric (65 years and older)
- Trauma

Attendance

Attendance is mandatory with the exception of excused personal time.

Individuals who have any disability, either permanent or temporary, which might affect their ability to perform in this class are encouraged to inform the instructor at the start of the quarter. Adaptation of methods, materials, or testing may be made as required to provide equitable participation.

_____
Instructor's Signature

_____
Date

Revised: 7/23
Last Reviewed: 8/26