Penn State
Radiological Sciences
Clinical Competency Handbook
2018- 2020

Penn State University
New Kensington Campus
3550 Seventh Street Road
New Kensington, PA 15068-1798

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RADIOLOGICAL SCIENCES PROGRAM OFFICIALS

Sponsoring Institution

Penn State University
New Kensington Campus
3550 Seventh Street Road
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Allegheny Imaging of McCandless rotations are currently suspended due to reorganization of site. Advanced notice will be given to all students should the rotations resume.

Allegheny Valley Hospital and the New Kensington Campus rotations have been suspended. Advanced notice will be given to all students should the rotations resume

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Radiological Science Clinical Education Course Description

The clinical education rotation will enable the student orientation to the Hospital and Radiology Department. The basic principles of radiation protection, applications of medical ethics, basic office procedures and departmental structure will be covered.

GENERAL OBJECTIVES for ROOM ASSIGNMENTS

A. Have radiographic room ready to:

1. Provide clean table, linens and countertops.
2. Exhibit orderly cabinets and storage spaces.
3. Note image receptor utilization, sizes and storage space.
4. Have available emesis basins where appropriate.
5. Locate syringes and needles as needed.
6. Manipulate control panel, i.e. set - mAs, kVp, AEC.
7. Locate and restock appropriate linens.
8. Apply correct radiography identification.
9. Identify all equipment in room area.
10. Begin learning radiographic terminology, i.e. kVp, mA, time, etc.

B. Evaluate each requisition:

1. Learn to identify procedures to be performed.
2. Note patient's name, medical record number, age, pregnancy if applicable.
3. Identify patient mode of transportation to the Radiology Department.
4. Use patient's name during communications (i.e. Mrs. Smith).

C. Perform ethical patient and technologist relationships.

1. Identify the correct patient, verify name & date of birth (patient armband).
2. Assist the patient to the radiographic room.
3. Assist patient to radiographic table and apply proper body mechanics.
4. Keep patient clothed and/or draped for modesty.
5. Talk with patient in a concerned professional manner.
6. Follow proper isolation procedure where appropriate.

D. Demonstrate appropriate PACS techniques in radiographic processing.

1. Recognize the different sizes and types of image receptors.
2. Process image receptor, input patient information to record on final image.

3. Be able to enter correct information into RIS.

E. Show evidence of proper personnel radiation safety practices.

1. Wear radiation monitoring device at all times while at the hospital.
2. Wear lead aprons during appropriate radiographic examinations.
3. Shield patients at all times.
4. Collimation of anatomic area of interest.
5. Review dosimetry report per clinical site policy and procedure.
6. Leave radiation monitoring device, in designated area, at completion of each clinical assignment (exception – external rotation).

F. Understand and perform office procedures in the Radiology Department.

1. Proper processing of requisitions.
2. Learn proper method of using paging system throughout the hospital (code, emergency etc.).
3. Learn proper method of answering the telephone.
4. Respond to questions from patients, physicians and other personnel.
5. Schedule patients.
6. Locate patient images.
7. Operate RIS proficiently.

G. Orientation to clinical policies.

1. Identify the rules of conduct, procedures and policies affecting you, the student.
    a. dress code
    b. student conduct
    c. attendance
    d. assignment hours
    e. professional ethics
    f. hospital and department policies and procedures
    g. safety (Radiation Safety)
    h. MRI Safety

CLINICAL EDUCATION ASSIGNMENTS

A. All assignments are conducted within the Radiology Department in radiographic and non-radiographic areas.

B. Clinical education assignments will permit the student to gain experience and familiarity with radiographic and non-radiographic areas in the Radiology Department under direct/indirect supervision of a registered Radiologic Technologist (R.T.) and/or Clinical Instructor.

C. Student assignments are posted in appropriate areas.

D. Evaluation in regards to clinical competency will be determined by the Program Director, Clinical Coordinator and/or Clinical Instructor with input from staff technologists.

RADIOLOGICAL SCIENCE PROGRAM - AREA OF ASSIGNMENT

Fluoroscopic
UGI & BE, SBS
Arthrogram
IVU/General Radiographic Room
Fluoroscopic exams per department protocol

General Radiographic
Chest Room
General Radiographic Room
General Radiography in Emergency Department

Mobile Radiography
Mobile
Patient floors
Intensive Care Units
Emergency Department

Operating Room/Surgical Procedures
Proper use of C-ARM in O.R. or pain clinic

Trauma Radiography

Advanced Modalities
Myelograms
Angiography
CT
MRI
Bone Densitometry
Mammography

Clerical
Main Radiology Desk
Image Viewing/Image Filing

Elective Rotations

Cardiac Catheterization	Management
Ultrasound	Education
Radiation Therapy	PACS
Nuclear Medicine	RA
PET	

CLINICAL ASSIGNMENT – Radiology Main Desk/File Room

The Radiological Sciences student will understand the function and system used to schedule examinations and maintain adequate records of both inpatients and outpatients having any radiographic procedures.

With the assistance of clerical supervision, the student will be able to:

RADIOLOGY MAIN DESK

1. Answer the telephone and correctly relate patient information.
2. Operate the department computer system.
3. Schedule patients properly for a particular radiographic examination.
4. Interpret patient requisitions.
5. Give proper instructions/directions for radiographic procedures.
6. Know the procedure to register and dress outpatients for radiographic procedures.
7. Know the location of various divisions of the radiology department.
8. Execute the cardiac arrest number and ask for assistance.
9. Retrieve patient requisitions.
10. Understand and be able to identify if patients have prior x-rays at that particular institution.
11. Enter patient information into computer system.
12. Know locations of staff radiologist offices, mailboxes (in/out) and viewing rooms.

FILM VIEWING/FILING ROOM (where applicable)

1. Answer telephone and correctly relate patient information.
2. Operate department computer system.
3. Operate file system.
4. Give proper instruction/direction to requesting individuals.
5. Understand and be able to identify if patients have prior x-rays at that particular institution.
6. Know how to locate appropriate x-ray patient jacket upon request.
7. Become familiar with filing/image storage system of patient images.
8. Know location of remote file room/image storage area.
9. Become familiar with O.R. schedule.
10. Know locations of staff radiologist offices, mailboxes (in/out) and viewing rooms.
11. Properly archive images.

12. Properly burn a CD for a patient (if permitted).

ROOM OBJECTIVES - CHEST ROOM

The student will be able to:

1. Locate chest room.
2. Correctly identify patient.
3. Accurately evaluate the requisition.
4. Assess the patient's condition and write a concise history.
5. Apply acquired knowledge of thoracic anatomy by correctly positioning the patient.
6. Use correct identification on each image.
7. Use radiation protection.
8. Give correct breathing instructions.
9. Correctly manipulate and operate equipment to include PACS.
10. Set correct exposure factors.
11. Critique a finished radiograph using knowledge learned in radiographic procedures.
12. Recognize and evaluate a radiograph for diagnostic quality.
13. Evaluate and correct a radiograph for poor quality.
14. Maintain a neat, clean and supplied radiograph room.
15. Recognize and report an emergency situation.
16. Assist the radiographer.
17. Exhibit professional conduct.
18. Adapt to non-routine radiography.

ROOM OBJECTIVES – GENERAL RADIOGRAPHIC ROOM

The student will be able to:

1. Locate general radiographic rooms.
2. Correctly identify the patient.
3. Accurately evaluate the requisition.
4. Assess the patient's condition and write a concise history.
5. Apply the acquired knowledge of anatomy by correctly positioning the patient.
6. Use correct identification on each image.
7. Use radiation protection.
8. Give correct breathing instructions.
9. Correctly manipulate and operate the equipment to include PACS.
10. Set correct exposure factors.
11. Critique a finished radiograph using knowledge learned in radiographic procedures.
12. Recognize and evaluate a radiograph for diagnostic quality.
13. Evaluate and correct a radiograph for poor quality.
14. Maintain a neat, clean and supplied radiographic room.
15. Recognize and report an emergency situation.
16. Assist the radiographer.
17. Exhibit professional conduct.
18. Adapt to non-routine radiography.

ROOM OBJECTIVES – FLUOROSCOPIC ROOM

The student will be able to:

1. Locate fluoroscopic room(s).
2. Correctly identify the patient.
3. Accurately evaluate the requisition.
4. Assess the patient's condition and write a concise history.
5. Apply immobilization devices when necessary.
6. Apply the acquired knowledge of anatomy by correctly positioning the patient.
7. Use correct identification on images.
8. Use radiation protection.
9. Give correct positioning and breathing instructions.
10. Identify, prepare and utilize contrast media during examinations.
11. Manipulate and operate all fluoroscopic equipment, digital equipment and PACS.
12. Recognize and evaluate a radiograph for diagnostic quality.
13. Evaluate and correct a radiograph for poor quality.
14. Set correct exposure factors for fluoroscopic and non-fluoroscopic procedures.
15. Assist the radiographer and/or radiologist.
16. Recognize and report an emergency situation.
17. Maintain a neat, clean and supplied radiographic room.
18. Exhibit professional conduct.
19. Adapt to non-routine radiography.

ROOM OBJECTIVES – MOBILE RADIOGRAPHY

The student will be able to:

1. Locate units and floors within the hospital.
2. Correctly identify the patient.
3. Accurately evaluate the requisition.
4. Assess the patient's condition and write a concise history.
5. Apply immobilization devices when necessary.
6. Apply the acquired knowledge of anatomy by correctly positioning the patient.
7. Use correct identification on images.
8. Use radiation protection.
9. Adapt to non-routine radiography.
10. Remove unwanted apparatus (when possible) obstructing the area of interest.
11. Set correct exposure factors.
12. Correctly manipulate and operate equipment to include PACS
13. Be aware of surrounding area before moving portable machine.
14. Give correct breathing instructions.
15. Evaluate and correct a radiograph for poor quality.
16. Recognize and evaluate a radiograph for diagnostic quality.
17. Assist the radiographer.
18. Recognize and report an emergency situation.
19. Exhibit professional conduct.
20. Complete exam according to established Mobile & Surgical Radiography Policy.

ROOM OBJECTIVES – CT/MRI/Mammography

The student will be able to:

1. Locate CT/MRI/Mammography room(s).
2. Correctly identify the patient.
3. Accurately evaluate the requisition.
4. Assess the patient's condition and write a concise history.
5. Apply correct immobilization devices when necessary.
6. Apply the acquired knowledge of anatomy by correctly positioning the patient.
7. Give correct breathing instructions.
8. Demonstrate a basic working knowledge of the computer.
9. Explain the different types of CT/MRI/Mammography examinations.
10. Practice MRI Safety.
11. Complete MRI Screening Form.
12. Correctly manipulate and operate equipment to include PACS.
13. Operate the laser printer/processor (where applicable).
14. Understand the basic knowledge of producing a diagnostic CT/MRI/Mammography image.
15. Assist the radiographer.
16. Recognize and report an emergency situation.
17. Exhibit professional conduct.
18. Maintain a neat, clean and supplied room.
19. Identify, prepare & utilize contrast media used during examinations.
20. Use correct identification on images.
21. Use radiation protection.

ROOM OBJECTIVES - ANGIOGRAPHIC ROOM

The student will be able to:

1. Locate angiographic room(s).
2. Correctly identify the patient.
3. Accurately evaluate the requisition.
4. Assess the patient's condition and write a concise history.
5. Apply correct immobilization devices when necessary.
6. Apply the acquired knowledge of the circulatory system anatomy by correctly positioning the patient.
7. Give correct breathing instructions.
8. Apply correct sterile technique.
9. Set-up trays and rooms for examinations.
10. Assist with nursing procedures.
11. Explain the different types of angiographic examinations.
12. Use correct identification on images.
13. Assist the radiographer and/or radiologist.
14. Identify different catheters and guidewires.
15. Correctly manipulate and operate equipment to include PACS.
16. Set correct exposure factors.
17. Utilize radiation protection.
18. Recognize and report an emergency situation.
19. Exhibit professional conduct.
20. Maintain a neat, clean and supplied radiographic room.

ROOM OBJECTIVES – OPERATING ROOM(S)

The student will be able to:

1. Locate rooms//processing room within the O.R.
2. Wear appropriate O.R. attire. Do not remove OR scrubs from hospital facility (where applicable).
3. Correctly identify patient/examination (portables and C-arm).
4. Apply correct sterile technique.
5. Correctly manipulate and operate the equipment to include PACS.
6. Explain the different types of examinations performed within the operating room and how they differ from normal routine examinations.
7. Apply the acquired knowledge of anatomy by positioning image receptor/equipment.
8. Use correct identification on images.
9. Set correct exposure factors.
10. Use radiation protection.
11. Assist the radiographer/physician/surgeon.
12. Exhibit professional conduct.
13. Correctly evaluate requisition.
14. Maintain neat and clean radiographic equipment.
15. Evaluate and correct a radiograph for poor quality.
16. Recognize and evaluate a radiograph for diagnostic quality.
17. Complete exams according to Mobile & Surgical Radiographic Procedures Policy.
18. Adapt to non-routine radiography.
19. Critique finished radiograph using knowledge learned in radiographic procedures.

ROOM OBJECTIVES – ELECTIVE ROTATION (Include in Portfolio)

The student will be able to:

1. Elect to rotate through the following Radiology Modalities found on page 7.

    a. Advanced Modalities
    b. Elective Rotations

2. Familiarize himself/herself with the various imaging modalities and the role they have in total patient care.

3. Students will be responsible for completing a 500 word essay to be included in portfolio. The student must also complete 16 hours of observation in the modality of choice. Student must use journal form to document activities during 16 hour observation an include in portfolio. The essay is not the observation with journal entry. Must be approved by Program Faculty in a specific modality, management position, PACS administrator, education etc. Observation experience must include:
    1. Types of exams or activities that student observed
    2. Description of policies, protocols and or procedures
    3. Description of equipment used, contrast media, contraindications if applicable.

    Career Path Essay should include:
    1. Education required
    2. Job outlook for 10 year period
    3. Expected salary
    4. What learned from observation & journal entries
    5. Interested in modality for future reference.
    6. Description of daily activities or responsibilities

4. The student may request to observe another area or modality any time during his/her 2nd year (295D-F). The student will sign the voluntary elective rotation form stating that he/she understands that he/she must meet all semester requirements by the specified time frame. The student must schedule this rotation with the clinical instructor.

5. All elective rotations will be made available to all students in the program.

CLINICAL EDUCATONAL OBJECTIVES

Unit Objectives for Clinical 295 A – F

The student will:

1. Perform and/or assist with radiographic procedures assigned to that room**. Level of supervision: <u>direct supervision</u> of a registered technologist.**
   Direct supervision assures patient safety and proper educational practices. The JRCERT defines direct supervision as student supervision by a qualified radiographer who:
   - reviews the procedure in relation to the student's achievement,
   - evaluates the condition of the patient in relation to the student's knowledge,
   - is physically present during the conduct of the procedure, and
   - reviews and approves the procedure and/or image.

   Students must be directly supervised until competency is achieved.

2. Perform independently in areas of successful completion in category evaluation. **Level of supervision: <u>indirect supervision</u> of a registered technologist.**
   Indirect supervision promotes patient safety and proper educational practices. The JRCERT defines indirect supervision as that supervision provided by a qualified radiographer immediately available to assist students regardless of the level of student achievement. "Immediately available" is interpreted as the physical presence of a qualified radiographer adjacent to the room or location where a radiographic procedure is being performed. This availability applies to all areas where ionizing radiation equipment is in use on patients.

3. Understand supervision during mobile and surgical radiographic procedures (see Mobile & Surgical Procedure Policy). Depending on the level of competence of each student, either direct or indirect supervision must be maintained as outlined by the policy and procedure of the Radiological Sciences Program. In the event a student has proved competent with either mobile or surgical radiographic procedures and appropriate documentation is completed, the student may perform the exams with indirect supervision (Please see glossary of student clinical competency handbook for proper definitions of direct/indirect supervision). Strict adherence to the policy and procedure must be maintained. No student is permitted to complete a mobile or surgical procedure using a beeper or telephone for assistance if needed. The physical presence of a registered radiographer must be immediately available adjacent to the room or location and within normal voice range.

4. Be able to:
   a. Evaluate each requisition.
   b. Demonstrate proper physical facilities readiness.
   c. Demonstrate correct positioning skills.
   d. Manipulate equipment/technical factors/identification.
   e. Show evidence of radiation protection.

5. Be evaluated for clinical category competency.

6. Perform at an average minimum master level of 85%.

7. Observe and perform in elective/external rotations.

8. Follow Repeat Policy.

Course Description **Clinical 295 A (Fall I)**

CHEST, ABDOMEN AND EXTREMETIES

Unit Goals The student will be able to perform examinations of:

CHEST
Routine (PA and Lateral)
Oblique
Decubitus
Lordotic
Portable
Non routine
Stretcher

ABDOMEN
Supine
Erect
Decubitus
Oblique
Lateral
IVU
Portable
BE

UPPER EXTREMITY
Fingers
Hand
Wrist
Forearm
Elbow

LOWER EXTREMITY
Toes
Foot
Ankle
Heel
Lower leg
Knee
Patella

OPERATING ROOM ORIENTATION

Unit objective: Documented performance on preliminary competency signature sheet prior to competency. The student must complete 6 competencies by the end of the semester. The student must also complete BE & IVU simulations. Any geriatric competency must be completed by end of RADSC 295C.

Course Description **Clinical 295B (Spring I)**

SHOULDER GIRDLE, BONY THORAX, PELVIC GIRDLE, VETEBRAL COLUMN, SKULL AND SINUSES

Unit Goals The student will be able to perform examinations of:

SHOULDER GIRDLE
Humerus
Shoulder
Scapula
Clavicle
AC joints
Arthrograms

BONY THORAX
Ribs
Sternum
SC joints

PELVIC GIRDLE
Hip
Pelvis
Femur

VERTEBRAL COLUMN
Cervical Vertebrae
Thoracic Vertebrae
Lumbar Vertebrae
Sacrum and Coccyx
SI joints
Myelograms

CRANIUM
Skull
Paranasal Sinuses

Unit objective: Documented performance on preliminary competency signature sheet prior to competency the student must complete 10 competencies by the end of the semester. Any geriatric competency must be completed by end of RADSC 295C.

Course Description Clinical 295C (Summer I)

CONTRAST STUDIES AND CRANIUM

Unit Goals The student will be able to perform examination of:

VISCERAL CRANIUM
Facial Bones
Zygomatic Bones
Nasal Bones
Orbits

MANDIBLE
Mandible
T.M.J.
Panorex

GASTROINTESTINAL SYSTEM
Esophagus
Upper GI and Small Bowel
Double Contrast Enema
Single Contrast Enema

URINARY SYSTEM
IVU
Cystogram
Hysterosalpingography

HEPATOBILIARY SYSTEM
Operative Cholangiogram
T-tube Cholangiogram
E.R.C.P.

Unit Objective: Documented performance on preliminary competency signature sheet prior to competency, the student must complete 12 competencies by the end of the semester. Any geriatric competency must be completed by end of RADSC 295C.

Course Description Clinical 295D (Fall II)

POSITIONING PROFICIENCY AND COMPETENCY TESTING

Unit Goals The student will be able to perform any examinations of:

General Radiographic Procedures

Fluoroscopic Procedures

Clinical 295D is intended to challenge students to demonstrate retention of previously demonstrated competencies. These challenges will be in the form of a proficiency competency. A proficiency competency is an examination that the student must perform on infrequent examinations. The proficiencies will be chosen randomly from a selection (see below) at the discretion of program faculty. If any remediation is necessary, a lab session may be provided to students upon request. Any student failing a proficiency will be responsible for providing an outline report to the clinical instructor and the clinical coordinator. A failed proficiency grade will be recorded as is. Opportunities to review less frequent/more difficult exams will also be provided (see exams identified in Clinical 295 A-C).

In lieu of lab in RADSC 295 D, each student will complete a series of online modules. The modules are a review of material covered in RADSC 295 A-C. A student may request an additional lab session during this semester. It will be the student's responsibility to schedule the lab session with the Clinical Instructor/Coordinator.

Proficiency list includes exams from the following list:

295A	295B	295C
Lordotic chest	Scapula	Facial bones
Oblique chest	Clavicle	Nasal bones
Lateral abdomen	AC joints	Zygoma
Decub abdomen	Sternum	Orbits
Heel	Sacrum/coccyx	Mandible
Patella	SI joints	BE
Decub chest	Skull	IVU
	Sinuses	
	SC joints	

*Eleven competencies plus six proficiency examinations must be completed.

*One case presentation will be required (see case presentation outline – one modality in the RADSC 295D and two modalities in RADSC 295E).

Course Description Clinical 295E (Spring II)

ADVANCED SPECIAL PROCEDURES

Unit Goals The student will be able to understand and/or perform examinations of:

CENTRAL NERVOUS SYSTEM
Cranium CT
Myelography

SKELETAL SYSTEM
Arthrography/MRI
Long Bone Measurement
Tomography
Bone Densitometry

CIRCULATORY SYSTEM
Angiography
Venography

SURGICAL PROCEDURES
C-arm Procedures
Operative Cholangiogram
Retrograde Urography

Unit Objectives: Documented performance on preliminary competency signature sheet prior to competency.
Completion of 295E – Student must have completed 13 competencies plus one case presentation (include 2 modalities) for semester requirements.

***40 mandatory plus 12 elective program competencies must be completed prior to terminal competency requirements in the final 295F semester.**

In lieu of lab sessions, each student will complete online modules. The modules are a review of RADSC 206. The student may request additional lab sessions. It is the student's responsibility to schedule a lab session with the Clinical Instructor/Coordinator.

Course Description Clinical 295F (Summer II)

TERMINAL COMPETENCIES AND REGISTRY REVIEW

Unit Goals Completion of 10 terminal competencies must occur during 295 F. The student will identify five areas of weakness and select competencies in these areas**. Student selection must be submitted to the Clinical Instructor, Clinical Coordinator and the Program Director by the first Friday of the summer semester.** The Clinical Instructor will identify the student's areas of strengths and weaknesses. The Clinical Instructor will select five areas of weakness and select competencies in these areas. The Clinical Instructor or designated appointee may select examinations the student has not completed.

Prerequisites The student must have completed the 40 required mandatory program competencies and 12 elective competencies before beginning the 10 terminal competencies during 295F.

All required paperwork must be submitted on or before the last day of semester.

CLINICAL GRADING SYSTEM - FIRST YEAR

Grade Evaluation — Clinical competencies should coincide with material covered in present and past semester labs.

Fall I Semester
Clinical 295 A

RADSC 101 Introduction and Procedures
RADSC 110 Patient Care
RADSC 295 MWF – 1.5 Credits
6 Competencies
15 Preliminary Competencies
3 Professional Evaluations
3 Unit Tests & Medical Terminology Quizzes
*1 Image Analysis Test

Spring I Semester
Clinical 295 B

RADSC 102 Procedures
RADSC 220 Biology and Protection
RADSC 295 TR – 1 Credit
10 Competencies
16 Preliminary Competencies
4 Professional Evaluations (One must be from the 12-8pm rotation and one must be from Wexford rotation)
5 Unit Tests
*1 Image Analysis Test

Summer I Semester
Clinical 295 C

RADSC 103 Procedures
RADSC 210W Pathology
RADSC 295 MTRF – 2 Credits
12 Competencies
4 Professional Evaluations (One must be from the 12-8 pm rotation, and one from external rotation)
25 Preliminary Competencies
3 Unit Tests
*1 Image Analysis Test

*Image analysis will be scheduled by the Clinical Coordinator each semester.
28 Clinical Competencies and a minimum of 56 Preliminary Competencies must be completed by the end of Summer I Semester. Any geriatric competency must be completed by end of RADSC 295C.

CLINICAL GRADING SYSTEM - SECOND YEAR

Grade Evaluation: Students are permitted to comp on any examinations- all exams have been covered in lab and or class

Fall II Semester		
Clinical 295D	RADSC 204	Exposure I
	RADSC 230	Physics
	RADSC 295	TR – 1 Credit
		6 Proficiencies
		11 Competencies
		16 Preliminary Competencies
		4 Professional Evaluations (One must be from the 12-8pm rotation and one must be from Wexford/external rotation)
		1 Case Presentation
		3 Comprehensive Unit Tests **(must pass each test with an 85%)
		**1 Image Analysis Test
Spring II Semester		
Clinical 295E	RADSC 205	Exposure II
	RADSC 206	Advanced Procedures
	RADSC 240	Pharmacology and Drug Administration
	RADSC 295	MWF – 1.5 credits
		13 Competencies
		20 Preliminary Competencies
		4 Professional Evaluations (One must be from the 12-8pm rotation and one must be from Wexford/external rotation)
		1 Case Presentation
		4 Unit Tests **(must pass each test with an 85%)
		**1 Image Analysis Test
Summer II Semester		
Clinical 295F	RADSC 207	Registry Review
	RADSC 295	MTWF – 2 credits
		Completion of 3 Simulated Review Exams (min. 75% each exam)
		**Comprehensive Clinical/Image Analysis Test

**The student must receive an 85% to successfully pass the test. Any student NOT passing with an 85% will have to complete remedial work and submit work within one week of examination date to Program Director. It is the student's responsibility to obtain remedial work. Demerits will be issued according to current syllabus. The initial grade the student receives will be recorded. Any student not receiving an 85% average for RADSC 295 will be placed on an automatic academic stop-out.

To graduate, a student must have a minimum of 92 Preliminary Competencies, 40 Mandatory Competencies, 12 Elective Competencies and 10 Terminal Competencies.

The student also must submit the following paperwork:

PSU – HIPAA tutorial
Orientation Checklists
Documented BE Tips/comp
19 professional evaluations
2 case presentations
Unit tests
Room Competencies (general/specific)
Yearly log of clinical experience
Observation forms
Portfolio
Master Competency Log
3 comprehensive unit tests (min. 85% for each exam)
1 comprehensive clinical final test (min. 85% average)
Daily clinical experience logs (green sheets)
Monthly log of clinical experience
Program clinical rotation schedule
Repeat Exposure Records
Log of Clinical Experience
Completed Module Exams (see RADSC 295 syllabus)

Total passing grade for clinical component must be a minimum **85%**. Any student falling below **85%** in the clinical portion will automatically be placed on a stop-out.

Clinical Instructor will keep lab documentation in file.

Case Presentation

Students will be required to present one case presentation in Fall II Semester/Clinical 295D (includes 1 modality) and one case presentation in Spring II Semester/Clinical 295E (include 2 modalities). The grade for the presentation will be averaged with the unit exams.

Completion of Clinical 295 A-E

The student must receive a minimum passing grade of 85%.

Failure to complete the clinical requirements for any given semester will result in a-deferred grade. Deferred grades for Clinical A, B, C, D and E require completion prior to the beginning of the next sequential Clinical 295 course. (Tuition adjustments may be made for incomplete grades and will be the responsibility of the student.)

Completion of 295 F – the student must have completed 40 mandatory plus 12 elective plus 10 terminal competencies. **(Failure to complete the competency requirements as established by the program may alter the graduation date which may alter registry eligibility status.)**

CLINICAL COMPETENCY EVALUATION PROCEDURE

Category Competency

The student will function under **direct supervision** while at the clinical affiliate until proven competent in any category. A student may request a competency examination after successful completion of all prerequisites in any given category. The student may function within that category under **indirect supervision**. All categories must be completed according to recommended yearly requirements or the student will not remain in the program. All examinations will be performed according to established department protocol. Additional projections may be required according to established program simulation list.

Administration

Competency evaluation must be administered by a designated (ARRT) registered technologist. The image evaluation **must** be administered by program faculty or clinical instructors.

REPEAT PROCEDURES (Refer to repeat radiograph policy)

It is the student's responsibility to ensure a registered technologist (ARRT) directly supervises any repeat radiograph.

It is the student's responsibility to document repeat exposure on repeat sheet. The student must submit repeat sheet with folder each month. Any student failing to record repeat examinations will be disciplined according to the zero tolerance policy.

COMPETENCY TESTING PROCEDURES

1. It is the student's responsibility to initiate a competency test.
   a. Notify clinical Coordinator/Instructor or designated registered technologist of intention to perform a competency test.
   b. Give evaluator the Clinical Competency Evaluation Form and prepare the radiographic room for examination.
   c. Only the patient, student/s and evaluator/s are permitted in the radiographic room during a competency evaluation.
   d. Student must be able to adapt to routine/non-routine examinations.

2. Once the clinical competency is initiated, the student must complete the examination and testing procedure. The student may **not** decide to discontinue the competency examination due to patient's condition, inability to assume positions or inability to cooperate etc. If the student refuses to continue with the clinical competency the evaluator will document said procedure on the Clinical Competency Form. The student will receive a failing grade (80%) for this competency.

3. The evaluator should explain any no responses as recorded on the Clinical Competency Evaluation Form in the comment section.

4. To complete the competency examination, the evaluator may, in confidence, discuss with the student strengths and weaknesses. The evaluator will offer the student constructive criticism and methods to improve performance.

5. The student and evaluator must sign the Clinical Competency Form.
   a. The student or evaluator may bring any discrepancy to the attention of the Clinical Coordinator who will render a decision on the specific competency. If the student brings forth a discrepancy, it must be noted in witness of the evaluating registered technologist or the Clinical Coordinator will address the registered technologist before a decision is rendered.

6. The student is responsible for returning the Clinical Competency Form within one week of completion. Every effort will be made by the CI to review the competency in a timely manner. The competency form must be placed in the secure PSU box at each clinical site or given to the Clinical Instructor/Coordinator for review.

7. Once successful completion of a competency is documented, the student may then perform that examination with **indirect supervision** by a registered technologist.

8. The student is required to be evaluated on routine/non-routine and age specific examinations for competency completion.

9. Student must simulate standard projections, according to established simulation list, if not completed on patient.

10. Refer to syllabus for semester requirements.

11. The program faculty reserves the right to assign a failing grade (80%) to any competency performed by a student for any reason. The following lists are **EXAMPLES** (this is not a

comprehensive list but a guide) for failure of a competency. (The CC/CI must provide the student with confidential counseling session as to the reason for the failing grade and the proper procedure to successfully complete the competency.)
The student:

a. Does not properly shield a patient.
b. Does not shut the door before taking an exposure.
c. Does not properly set exposure factors.
d. Does not know exam protocol.
e. Cannot adjust for non-routine exam procedure.
f. Does not provide proper patient care.
g. Does not properly set-up equipment needed to perform exam.
h. Will not cooperate with the supervising technologist.
i. Does not follow repeat policy.
j. Does not properly ID image (Lead markers and proper pt. information).
k. Does not follow proper radiation protection precautions.
l. Does not properly ID patient.

12. Any examination score below **85%** (average) is a failed competency. The student must retest that examination. The student must submit a written outline describing part position, technical factors, patient position, central ray, collimation, SID, breathing instructions and radiographic criteria on all failed competencies. Outline must be submitted to clinical instructor and clinical coordinator. Scoring methods are as follows:

A. competency failed + retest passed = average score 80% + 90% = 85%
B. competency failed + retest failed = Start over with obtaining signatures
C. competency failed + retest passed = average score is <85% (Start over with obtaining signatures)

13. 40mandatory competency evaluations and 12 elective competencies **MUST** be completed prior to graduation.

*It is preferred all clinical examinations are performed on patients; however, in the event of an "infrequent" examination, simulations may be obtained on a non-patient at the discretion of the Clinical Coordinator/Instructor (see Clinical Faculty section of the preliminary checklist). **If the simulated examination comes into the department the student must complete a competency examination. (Student must perform examination on patient and complete all required paperwork.)**

14. All clinical forms to include established simulation list, are posted on the PSU course management system (Canvas), under the Radiological Science Group, under the corresponding folder for years of attendance.

15. Each student will complete a monthly folder and post all information on Box.psu.edu in appropriate folder for each student. Any student submitting required information late or incomplete will be disciplined according to the Zero Tolerance Policy.

CLINICAL EDUCATION – LAB OBJECTIVES

The purpose of this informal classroom demonstration is to develop the clinical and practical aspects of radiographic positioning utilizing the cognitive approach already learned. Lab objectives are devised for each semester session to coincide with didactic instructions.

The student will:

1. Review all routine procedures utilized at the clinical affiliate.

2. Position the ~~e~~ach other for various radiographic examinations.

3. Critique peers and evaluate radiographic positioning.

4. Define positioning terminology and be aware of the entrance and exit points of the central ray when demonstrating various projections.

5. Identify basic types and principles of contrast media, being able to differentiate ionic and non-ionic contrast media.

6. Identify/define supplementary/safety procedures including tomography, mobile radiography, CT, MRI, angio, mammography and special procedures. (online modules)

7. Name the various pieces of equipment (x-ray,bucky tray, upright wall bucky, generator, transformer PACS etc.).

8. Manipulate the x-ray tube (vertical position, horizontal position, angulation in various degrees both caudal and cephalic, locate all locks and be able to adjust the x-ray tube to the "on center" position of the radiographic table).

9. Locate the x-ray tube, tube housing, collimator controls and know mechanics of collimation.

10. Locate the bucky tray, move it and be able to lock into position.

11. Adjust the x-ray table to various positions.

12. Demonstrate or define positioning terminology (position, projection, supine, prone, oblique, lateral, decubitus and central ray).

13. Participate in lab sessions. (Lab sessions will be scheduled following established guidelines from 295 syllabus.) Clinical D – E lab sessions will consist of online modules. Additional lab sessions will be available upon request. Any student missing a lab session at clinical will attend a make-up lab session on campus/clinical site. The student must schedule the make-up lab session according to established schedule.

CLINICAL INSTRUCTION LAB LOG

POLICY

In an effort to standardize labs at each clinical site a Clinical Instruction Lab Log has been devised. The log must be signed by each student in attendance and kept at clinical site for inspection by program faculty.

PURPOSE

1. Monitor student progress
2. Standardize timeliness of clinical activities
3. Guarantee a variety of lab activities
4. Decrease Clinical Instructor's paperwork
5. Provide consistency among clinical affiliates
6. Provide log of completed modules (Log must be submitted with monthly clinical folder.)

NOTE It is the student's responsibility to seek remediation when needed by contacting either CC or CI.

It is the student's responsibility to schedule a make-up lab session with the CC/CI in the event of an absence. **The make-up lab may be scheduled on campus or at the clinical affiliate.**

CLINICAL EXAMINATION STANDARDIZATION

POLICY

In an effort to standardize each clinical site, the clinical unit tests and comprehensive clinical final tests will be administered on campus.

PROCEDURE

1. All tests will be administered by program faculty on campus.

REPEAT RADIOGRAPH POLICY

It is the student's responsibility to repeat the radiograph in accordance with the JRCERT regulations!! The student must get a registered technologist to witness the repeat!! NO EXCEPTIONS!!!!

A registered technologist must review and approve all radiographs performed by the student to maintain quality patient care and radiation protection. Unsatisfactory radiographs shall be repeated only under the **direct supervision of a registered technologist, regardless of the student's level of competency. Documentation of all repeats must be recorded on the student's repeat sheet and submitted with the monthly clinical folder.**

Under no circumstances may a student be permitted to perform a procedure without adhering to this policy.

In compliance with accreditation Standards for an Accredited Radiography Program: All repeats performed by students **MUST** be done in the **Direct Presence of a Qualified Practitioner (Registered Radiographer)**.

If the student fails to comply with this policy, disciplinary action will be taken.

SUPERVISION AT THE CLINICAL SITE

Direct Supervision

Direct supervision assures patient safety and proper educational practices. The JRCERT defines direct supervision as student supervision by a qualified radiographer who:
• reviews the procedure in relation to the student's achievement,
• evaluates the condition of the patient in relation to the student's knowledge,
• is physically present during the conduct of the procedure, and
• reviews and approves the procedure and/or image.
Students must be directly supervised until competency is achieved.

Indirect Supervision

Indirect supervision promotes patient safety and proper educational practices. The JRCERT defines indirect supervision as that supervision provided by a qualified radiographer immediately available to assist students regardless of the level of student achievement. "Immediately available" is interpreted as the physical presence of a qualified radiographer adjacent to the room or location where a radiographic procedure is being performed. This availability applies to all areas where ionizing radiation equipment is in use on patients.

Supervision during Mobile and Surgical Radiographic Procedures

Depending on the level of competence of each student, either direct or indirect supervision must be maintained as outlined by the policy and procedure of the Radiological Sciences Program. In the event a student has proved competent with either mobile or surgical radiographic procedures, and appropriate documentation is completed, the student may perform the exams with indirect supervision (Please see glossary of student clinical handbook for proper definitions of direct and indirect supervision). Strict adherence to the policy and procedure must be maintained. No student is permitted to complete a mobile or surgical procedure using a beeper or telephone for assistance if needed. The physical presence of a registered radiographer must be immediately available adjacent to the room or location and within normal voice range.

GLOSSARY:

- **AC Joints**- Acromioclavicular Joints
- **ARRT**- American Registry of Radiologic Technologists (www.arrt.org)
- **BE**- Barium Enema
- **CC**-Clinical Coordinator
- **CI**- Clinical Instructor
- **CT**- Computed Tomography
- **Direct Supervision** – Direct supervision assures patient safety and proper educational practices. The JRCERT defines direct supervision as student supervision by a qualified radiographer who:
    - reviews the procedure in relation to the student's achievement,
    - evaluates the condition of the patient in relation to the student's knowledge,
    - is physically present during the conduct of the procedure, and
    - reviews and approves the procedure and/or image.
- Students must be directly supervised until competency is achieved.
- **ERCP**- Endoscopic Retrograde Cholangiopancreatography
- **HIS**- Hospital Information System
- **Indirect Supervision** – Indirect supervision promotes patient safety and proper educational practices. The JRCERT defines indirect supervision as that supervision provided by a qualified radiographer immediately available to assist students regardless of the level of student achievement. "Immediately available" is interpreted as the physical presence of a qualified radiographer adjacent to the room or location where a radiographic procedure is being performed. This availability applies to all areas where ionizing radiation equipment is in use on patients.
- **IVU**-Intravenous Urogram
- **JRCERT**- Joint Review Committee on Education in Radiological Technology
- **MRI**- Magnetic Resonance Imaging
- **PACS**- Picture Archiving Communication System
- **PET**- Positron Emission Tomography
- **Proper Identification**- Lead markers appropriately placed. Correct patient information.

- **Qualified Practitioner** – a radiographer possessing American Registry of Radiologic Technologists certification or equivalent and active registration in pertinent discipline and practicing in the profession and had complete the hospital/department orientation.

- **RIS**- Radiology Information System

- **RTR-** Registered Technologist Radiographer

- **SBS**- Small Bowel Series

- **SC Joints**- Sternoclavicular Joints

- **TMJ**- Temporomandibular Joint

- **UGI**-Upper Gastro Intestinal Exam

UPDATED

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