Clinical Objectives Table of Contents

UPMC Chautauqua School of Radiology
Clinical Plan of Education

PHILOSPHY OF CLINICAL EDUCATION

- The role of the Radiographer has grown in complexity with the development of more sophisticated procedures and equipment in the field of radiology. It is the philosophy of the program to provide the student with the optimal clinical experience and to ensure that the student has the opportunity to perform all routine types of radiographic procedures in the appropriate proportions.

The primary goal of the UPMC Chautauqua School of Radiology's clinical plan of education is to design a program in which the student will be able to correlate clinical experience with the didactic portion of the program. This correlation is based upon a solid foundation of fundamental principles and procedures to lead the student into developing superior performance and knowledge towards becoming a well-rounded proficient radiographer.

CLINICAL EVALUATION OBJECTIVES

The philosophy of the program is to provide observation, supervision, demonstration, counseling, and evaluation in the clinical setting whereby the student will effectively:

- Apply knowledge of the principles of radiation protection for the patient, themselves, and others.
- Apply knowledge of anatomy, positioning, and radiographic technique to accurately demonstrate anatomic structures on a radiographic image.
- Determine exposure factors to achieve optimum radiographic technique with a minimum of radiation exposure to the patient.
- Examine radiographs for the purpose of evaluating technique, positioning, and other pertinent technical and pathological qualities.
- Exercise discretion and judgement in performance of medical imaging and procedures.
- Properly learn how to operate all equipment within the department, portable units, and surgery suites.
- Provide optimal patient care that is essential to the radiographic procedures.
- Establish interpersonal communications with the patient and other members of the health care team.

CLINICAL GOALS FOR COMPETENCY

Upon completion of the student's clinical rotation in the Radiology Department, he/she shall be able to demonstrate the knowledge, skills, and understanding in the following areas:

I. Patient Care and Safety
II. Radiographic Procedures
III. Radiographic Technique
IV. Radiographic Protection
V. Radiographic Equipment and Accessories

An acceptable level of competency has been achieved when the student is able to:

I. In the area of Patient Care and Safety:

A. Safely transport and transfer patients
B. Check patient for correct identifications (double ID used – full name and date of birth)
C. Correctly care for patients of different needs (elderly, children, special needs patients)
D. Be sure that patient's personal belongings that may be removed during the radiographic procedure are kept in a safe spot or given to family to hold, and returned to patient at completion of the exam
E. Communicate with patients and families in a concerned and professional manner
F. Explain to and instruct the patient regarding the procedures to be performed
G. Provide for patient modesty and comfort by supplying gowns, robes, blankets, sponges, etc.
H. Practice good medical asepsis to prevent spread of disease by using correct hand washing technique before and after each patient and cleaning the radiographic equipment between each case

II. In the area of Radiographic Procedures

A. Perform radiographic and fluoroscopic studies and evaluate the following:
1. Radiographic and diagnostic quality
2. Accuracy of interpretation of the request and written order
3. Correct positioning of anatomical parts
4. Correct use of markers and identification
5. Correct beam limitation (collimation)
6. Correct identification of radiographic exposure factors
7. Show evidence of radiation protection
8. Show knowledge of how to use and respect equipment

B. Perform and/or assist the radiographer with the radiographic procedure(s) assigned to that room. The level of supervision depends upon the level of the clinical competency that the student has achieved.

III. In the area of Radiographic Technique

A. Select the proper technical factors for routine situations and make appropriate adjustments for the non-routine examination. The factors to be selected and arranged in varying patterns of use include:

1. Kilovoltage
2. Milliamperage
3. Time
4. Automatic Exposure Density Adjustments

IV. In the area of Radiation Protection

A. Provide radiation protection for patients, personnel and self by utilizing lead aprons, gloves, screens, collimation, patient restraints (only with a doctor's order), filters, and employing correct technical factors to eliminate necessity of retakes (ALARA).

B. Show knowledge of correctly protecting self from radiation by using lead aprons, distance, lead barriers, and correctly wearing radiation monitoring dosimeter (film badge).

C. Understands that as a student, they are not to hold patients for any reason

V. In the area of Radiographic Equipment and Accessories

A. Properly use the various Radiologic equipment (x-ray tubes, fluoroscopy units, portables, C-arms, ect.)

B. Properly utilize processing equipment (image readers) and accessories.

C. Prepare contrast agents (barium sulfate, and iodinated compounds) for various prescribed studies.

D. Know and understand various examination preparation procedures and the importance of a well-prepared patient for specific contrast studies.

CLINICAL EDUCATION SUPERVISION

The Lead Clinical Instructor in cooperation with the Educational Director arranges for the supervision of the students in all clinical rotation areas. Supervision of student's performance is provided for by the ARRT certified Radiographer in each radiographic room. In preparation for supervising responsibility, the Clinical Instructor provides in-service to the supervising technologists instructing them in evaluating program goals and clinical competency program. The technologists are instructed in:

1. Role of the supervising technologists to demonstrate, assist and instruct the student in accomplishing the required behavioral objectives of the individual rotation assignments.

2. Expected performance level of the student during different stages of the program.

3. Need for constructive evaluation of the students clinical performance in the areas of:
A. Clinical knowledge
B. Radiation protection habits
C. Critical thinking skills
D. Initiative
E. Cooperation
F. Interest in learning
G. Application of classroom knowledge
H. Acceptance of constructive criticism
I. Patient confidentiality
J. Personal appearance
K. Staff relationships
L. Patient communication
M. Patient relationship

4. Proper ways to communicate areas of needed improvement to the student in a constructive and remedial manner.

5. Need to communicate a student's unsatisfactory clinical performance to the Clinical Instructor or Educational Director.

SUPERVISION OF STUDENTS IN CLINICAL SETTING

This policy shall be followed in order to provide appropriate supervision for students during their 22 month program cycle. Regard for achieved clinical competence of the student is taken into consideration. This will ensure quality radiological services, appropriate supervision of the student, and appropriate care to the patient. It will also ensure adequate radiation protection for the patient, the student, and all other hospital personnel. A 1:1 technologist to student ratio will is to be maintained at all times.

Supervisory and/or staff technologists shall assume full responsibility for patient care during all phases of student education. Students shall not assume this full responsibility but must assist the staff radiographers in the fulfillment of it.
Students who have not received competency in the requested radiographic procedures or when performing fluoroscopy, portable exams, and surgery must be under direct supervision at all times.

The JRCERT defines DIRECT SUPERVISION as: Student supervision by a qualified practitioner 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 present during the conduct of the procedure; and reviews and approves the procedure and or image. Students must be DIRECTLY SUPERVISED in all exams until competency is complete.

The following points constitute direct supervision:

1. A registered radiographer reviews the request and doctor's order for the radiographic examination to:

- Make a decision as to whether or not the student can perform the examination with reasonable success considering their competency level.
- Determine that the condition of the patient does not contraindicate performance of the examination by the student.

2. The direct supervision of a qualified radiographer is required under the following conditions:

- Whenever a repeat radiograph is being performed (follows policy RTS-21 in student handbook).
- If the patient requires an injection of an aqueous iodine contrast agent
- If the patient has requested a registered radiographer
- During any portable, fluoroscopic, or surgical examination
- During any exam that the student has not achieved competency

Students who have achieved competency in any exams other than portable, fluoroscopic, or surgical procedures are only required to have indirect supervision.

3. The indirect supervision of a qualified radiographer is required under the following conditions:

- **At all times**

The JRCERT defines INDIRECT SUPERVISION as: that supervision provided by a qualified practitioner immediately available to assist students regardless of the level of student achievement. Immediately available to interpret as the physical presence of a qualified practitioner adjacent to the room of location where a radiographic procedure is being performed.

4. The registered radiographer must review and approve the doctor's written order and the radiographs prior to dismissal of the patient regardless of the student's competency level.

5. A registered radiographer providing direct supervision for a student must add their name with the student's name when completing the exam even if only approving the images.

STAFF TECHNOLOGIST RESPONSIBILITIES FOR STUDENTS IN THE CLINICAL ASSIGNMENT:

As previously stated, the staff radiographers will provide either direct or indirect supervision for students during the clinical education phase of the program. Approximately 60% of the staff radiographer's time may be spent supervising student clinical education, providing student clinical orientation and student clinical evaluation.

The Staff Radiographer will:

- Provide direct or indirect supervision of the student depending on the student's level of competency in accordance with the clinical education policy titled "Supervision of the Student in Clinical Education".
- Assume full responsibility for patient care and comfort and instruct the student in methods of patient care.
- Explain and demonstrate proper usage of radiographic imaging equipment and accessories.
- Make the student aware of his/her responsibilities in the area of clinical assignment by reviewing with the student the clinical assignment duties.
- Instruct and guide the student in the preparation and proper handling of contrast media or any drug that may be required for a specific procedure.
- Instruct the student as to the proper method or procedure for assisting the radiologist during a specific examination.
- By setting a personal example, guide the student in the development of professional and ethical conduct.
- Use effective communication to facilitate positive staff-student rapport and create a positive learning environment in the clinical setting.
- Guide the student in the correct use of oral and written medical communication.
- Guide the student in the employment of proper radiation projection procedures to ensure patient and personal safety.
- Guide the student in the selection and use of proper methods of radiographic positioning and patient immobilization.
- Guide the student in the selection of exposure factors that can be used to obtain diagnostic quality radiographs with minimum radiation exposure to the patient and the proper exposure index.
- Instruct the student in the correct way to modify standard procedures to accommodate the patient condition and/or other variables.
- Instruct the student in the correct method of body mechanics.
- Guide the student in the correct method of assigning the proper patient identification to an image.

- Instruct the student in the proper way to adapt exposure factors for various patient habitus, conditions, equipment, accessories, and contrast media to maintain appropriate radiographic quality.
- Guide the student in evaluating radiographic images to determine proper positioning and image quality.
- Inform the student of safe limits of equipment operation
- Guide the student in reporting equipment malfunctions to proper authority.
- Guide the student in the performance of quality control/quality assurance testing.
- Instruct the student as to the various ways to recognize emergency patient conditions in the initiation of first aid and basic life support.
- Guide the student in recognizing human anatomy, function, and pathology on the radiographic image.
- Upon request of the Educational Director and Clinical Instructor, evaluate the student's performance in the clinical area of assignment.

STUDENT RADIOGRAPHERS – CLINICAL AND ADMINISTRATIVE DUTIES:

Under the guidance of the Educational Director, Lead Clinical Instructor, Department Administration and Staff Radiographers, the student will perform radiographic procedures and technical duties according to the progress of their clinical competency.

Clinical

The student will produce radiographs for the practice of clinical performance by:

- Transferring patients from the waiting area to the radiographic room or dressing room (changing them properly for the exam to be done.)
- Positioning the patient for various examinations according to their clinical competency level.
- Selecting proper exposure factors on individual patients based on their clinical competency level.
- Operating the equipment as required for various examinations according to their clinical competency level.
- Properly assign images to the correct patient identification.
- Providing radiation projection to the patient, self and others according to the standards
- Assisting the staff radiographer in preparing contrast media and medications if needed.
- Being responsible to the staff radiographer in performance of routine and special radiographic procedures.
- Using sterile technique when needed.
- Use of proper patient care skills.

Administrative

The student will perform the following administrative duties by:

- Maintaining accurate patient care records as needed
- Maintaining order and cleanliness
- Securing and returning supplies to proper areas
- Cooperating with all personnel through proper conduct
- Rotating through the department according to the posted schedule
- Maintaining ethical patient – student relationships
- Maintaining confidentiality

Continuous Training

- May be required to learn new protocols due to doctor's preferences.
- May assist in the use of variety of equipment and procedures not routinely taught.
- May need to learn how to operate new equipment that is introduced during the training period.
- May need to perform other related duties required and approved by the Educational Director.

Clinical Placement Process and Duties in the Clinical Setting

The UPMC Chautauqua WCA School of Radiology strives to instill within their students a pride in their profession. It is felt that as learners, students must be aware of all aspects relating to the performance of a responsible radiographer. The school strives to instill within their students a pride in their profession. It is felt that as learners, students must be aware of all aspects relating to the performance of a responsible radiographer. In order to develop as well-rounded radiographers, students are assigned to clinical duties within the Diagnostic Imaging Department. Duties are assigned on a room rotation basis so as to allow an even spread of duties and responsibilities. Each student will have (throughout their 22 month schooling) an equal opportunity and amount of time (rotations) in each of the different clinical assignments. Students are assisted in task accomplishment by other students and staff members. The program does not regularly schedule students during off-shift hours (There is a total of 37.5 hours that students will be scheduled between the 3p-11p shift and the 11p-7a shift). Students are never scheduled for weekend or holiday rotations.

Room	Additional Duties
All Rooms	Responsible for cleaning and stocking room
All Rooms	Transporting patients when needed
All Rooms	Transporting reports to the ER

Clinical Assignments:

The purpose of clinical assignments in the School of Radiologic Technology is to allow the students to apply theoretical principles of radiography, patient care and departmental procedures to practical experience. Students will have the status of learner and will not replace departmental personnel. While in the Diagnostic Imaging Department, the student is required to observe the regulations imposed by the facility on its employees in connection with patient welfare. The student is directly responsible to the staff member working in the clinical area to which the student is assigned. Should any operational or personality problems arise, a settlement on a professional level is preferred. If the matter cannot be resolved, the Educational Director/Clinical Instructor should be consulted. If the student needs further aid in solving problems, he/she may state the problem to the Advisory Committee as directed in the policy on student grievance.

REGULATIONS GOVERNING CLINICAL ASSIGNMENTS:

1. The student will be supervised in the clinical area by the Clinical Instructor and by the technical staff and is ultimately responsible to the radiologist in charge.

2. The student to tech ratio will remain 1:1. The number of students in the clinical setting will not exceed the number of technologists scheduled for the day.

3. Clinical assignments are posted in the set-up area of the Diagnostic Imaging Department, in the classroom, and each student is given a paper copy as well.

4. Students are expected to report promptly at designated times to the staff radiographers in the assigned areas. (Ready to work at the start time of assigned rotation)

5. A student must have time off approved by either the Educational Director or the Clinical Instructor.

6. Students will be sent to lunch by the staff in charge at the set-up area.

7. Students must remain at their assigned clinical areas and may not leave the department without permission by the Lead Clinical Instructor or supervising technologist.

8. Students will be evaluated on a regular basis to determine progress in clinical performance, professional judgement, organization and ethics.

9. Students will perform in the clinical area under direct or indirect supervision of a registered radiographer depending on their level of competency.

10. All repeat radiographs are to be performed under direct supervision. (A technologist **MUST** be in the room during the repeat exposure; Policy will be followed if student does not adhere.)

11. A student shall not be scheduled clinical assignment or academic instruction in excess of forty (40) hours per week or eight (8) hours per day.

12. Students may be scheduled for up to two weeks (80 hours total) on the evening or night shift as part of their clinical experience.

CELL PHONES IN THE CLINICAL ASSIGMENT

When students are in clinic, cell phones may not be on vibrate or silence but must be turned off completely. Cell phones may only be used in designated areas on break or lunch and may not be kept in pockets or lab coats during clinical rotations.

ROOM ROTATION FOR THE STUDENT

Students will rotate through the following assignments one week at a time:

- Room 1 (either a 7a-1p rotation or 1p-7p rotation)
- Room 4 (7:30a-3:30p)
- Room 5 (either a 7a-1p rotation or 1p-7p rotation)
- OR/Portables (7a-3p)
- Nursing/Room 6/Special Procedures (8a-4p)
- Regular rotation through CT starting in the summer and through the second year (8a-4p) (Students are to only do non-contrast exams.)

First year students will be assigned a one-week rotation in transport, and at the front desk. Another desk rotation may be scheduled into the student's rotation at some point in the second year. Two days of one of the summer CT rotations will be scheduled with the PACS/RIS group.

If the student is eligible*, during the 4th and 5th trimesters each student will rotate approximately one week through two of the following modalities (with a possible third); Radiation Therapy, MRI (observation only and all students go through the screening process), Nuclear Medicine, Ultrasound, and Mammography. The student will also, within this time period, do up to, but not more than 80 hours in the "off-shift" hours. These will include the hours of 11 am- 7 pm, 3pm – 11 pm, and 11 pm – 7 am. (Monday, Tuesday, Thursday for 3-11 and Monday (Sunday into Monday) and Tuesday (Monday into Tuesday for 11-7; different weeks).

*To be considered eligible for modality rotations, the student must have a total of 22 successful (with a passing grade of 85% or higher) competencies by the completion of the third trimester (by September 1). The student also may not be on clinical probation to be

eligible for modality rotations. All students will be scheduled for the "off shift" hours regardless of number of competencies or probationary status. If the student does not meet the criteria for rotation through the modalities by September 1, there will be a second opportunity given. If the student can achieve 28 successful competencies by December 1, and are still not on clinical probation, they will have the ability to choose 1 modality area to rotate through in the 5th trimester.

Once these rotations are finished, if there is further interest in any one area, the student may request an additional week in that area other than the "off shift" hours. The request must be made to the Lead Clinical Instructor with sufficient notice to be able to place the student in that area. The additional rotation will have to be completed prior to one full month before graduation. The request must also be approved by the Lead Clinical Instructor on the basis of – amount of competencies in diagnostic exams, and ability to perform responsibly as a student radiographer.

Rotations will be in such a way that each student has an equal opportunity to work with every radiographer in the department, work in each room of the Radiology Department, and participate in a variety of examinations and learn the necessary ancillary functions of a modern radiology department.

Any changes to the schedule will be made only with the approval of the Lead Clinical Instructor and/or Educational Director and must be clearly marked on the schedule.

LEVELS OF CLINICAL ASSESSMENT

1. Clinical Participation
    - The student begins his/her clinical participation by first assisting the staff radiographer in the execution of duties.
    - This participation moves from a mode of observation to a more practical mode of assisting the radiographer in the radiographic examination. The rate of student progress is dependent on the ability of the student to comprehend and perform various tasks assigned to them.
    - As the student gains more experience in various procedures, they can gradually move into a clinical competency level. At this point the student is actually performing the procedures of the radiographer.

2. Categories of clinical assessment levels

Step 1 PRESENTATION OF INFORMATION: At this mode the student is introduced to the information in the classroom setting. The Didactic Instructor provides lecture, students take notes, and class discussion takes place. This is the information gathering session to prepare the student for the laboratory setting.

Step 2 DEMONSTRATION: The student will be shown the radiographic positioning by the Lead Clinical Instructor in the laboratory setting. At this time, the student should be taking notes on how to perform the examination, asking any questions that they may have, and interacting with the class.

Step 3 PRACTICE: The student will then do a simulated practice of the exam on a fellow classmate while being observed by the Lead Clinical Instructor. At this time, the student will be corrected on any mistakes made while positioning (practice) so they can be corrected for the Lab Evaluation.

Step 4 LABING: After each student has practiced the exam, they will be given a Lab Evaluation by the Lead Clinical Instructor (on a different day than the practice). This will be a graded exam. A passing grade of an 85% or higher is needed to be deemed efficient. If the student passes, they will be allowed to perform that exam in the clinical setting with direct supervision until they are competent. If the student does not pass the first attempt, the starting grade for the second attempt will be 95%, the third a 90%, and the fourth an 85%. If the fourth attempt is a failure, then steps 1-4 will be repeated until the lab is a success. All grades will be averaged in when final grades are determined.

Step 5 PRELIMINARY EXAMS "PRELIMS": The student must successfully perform 2* preliminary exams (prelims) in the clinical setting on actual patients before being eligible to perform a competency on that exam. The student must request a staff technologist with at least 6 months of experience to directly supervise the exam, but be able to perform it on their own with minimal assistance from the radiographer. The student must inform the technologist before the start of the exam that they wish to do a "prelim". These exams are done on a pass/fail basis. Any repeated image (due to a mistake by the student) will result in an automatic failure. A failed exam does not count against the student, it simply means that another attempt must be made, and also helps to see where (and if) additional instruction may be needed.

*Only 1 preliminary exam is needed for the exams of skull, mandible, facial bones, and orbits due to the number of these exams available to the students.

Step 6 COMPETENCY: Once the student has successfully completed 2 preliminary exams, they are eligible for competency. The competency will be done on actual patients and will be graded by a staff technologist with a minimum of 1 year experience. The following guidelines must be followed:

- The student must clarify before the start of the exam if they will be performing a preliminary competency or a competency.
- Requisition, doctor's orders, and patient identification must be checked properly.
- The student must then perform the exam with minimal to no help from the technologist/instructor. If an error is made, the technologist will direct the student through the error and, if possible, let them continue with the exam. **The technologist has the right at any time to take over an exam if they feel necessary.**
- At the completion of the exam, the student must fill out the proper paperwork and leave it at the front desk for the technologist, or give it to them directly.
- The technologist will fill out the prelim or comp and place it directly into the "lock box" located at the front desk.

- From the lock box, the Lead Clinical Instructor will transfer all prelims and comps to a filing cabinet located in the classroom. Each student has their own personal file for all completed prelims and comps, and will have ample access to this file as needed.

CONTINUOUS EVALUATION: Occasional re-evaluation after competency has been achieved. This will include terminal competencies. (Also refer to heading: CONTINUOUS COMPETENCY EVALUATION).

If a competency is a failure, the grade will be averaged into the student's clinical grade for that trimester, and both prelims and the competency must be repeated. For every time that a competency is failed, the starting grade for that competency only, drops 5 points. For instance, after the first failure, the second attempt will start at a 95%, the third attempt at a 90%, and the fourth attempt will start at an 85%. If the student does not pass on the fourth attempt, the entire process, from step 1 through step 6 must be repeated.

If there are any questions or areas that need clarification, these should be directed to the Clinical Instructor before any grades have been assigned. All staff radiographers with 1 or more years of experience and program officials are authorized to conduct competency evaluation. Other individuals may be appointed by the Educational Director to perform clinical competency evaluations.

COMPETENCIES

There is a total of 37 mandatory and 15 elective competencies that must be completed in order for the student to be eligible for graduation. In the event that the student does not get their competency in the appropriate number from each category, up to 8 competencies TOTAL can be simulated.

GRADING GUIDELINES FOR CLINICAL COMPETENCY

The evaluator, as appointed by the Educational Director, will observe the student perform the procedure. The evaluator will deduct from the allowed points to the degree of noncompliance using the grading outline. This will then be the student's grade. All examinations have a maximum of 100 points when they start the examination. All preliminary and competency forms must be filled out and signed by the evaluator within 72 hours. After that time period the evaluator may choose to not complete the form if they feel they do not remember the exam well enough to accurately do so. It is the student's responsibility to make sure the evaluation forms are filled out in a timely manner.

After completing a competency evaluation the student or technologist evaluating the student will place the completed competency into the "lock box" located at the front desk. If the student does not view the final grade on the competency before it is placed in the "lock box", they may request to the Clinical Instructor to be able to view it. After the

Clinical Instructor receives the completed competencies, they will be kept in the student's file in the Clinical Instructor's office. If the competency attempt was unsuccessful, the student or staff technologist will immediately bring the competency form with the accession number from the exam to the Lead Clinical Instructor. The following procedure will then take place:

- All images will be reviewed with the student and an explanation of the errors an how to correct the errors will be addressed.
- When a student does not pass a clinical competency, the evaluator will explain the reason why he/she did not pass to the student directly or to the Clinical Instructor.
- The student will then refer back to the Clinical Instructor for additional review or instruction if requested or needed. The student's preliminary competencies will be taken away and the student will have to "re-do" them.
- When they feel they are ready to do them again, a 5-pt reduction will be taken off of the final grade for that competency.

In addition, personal pocket notebooks may be used as a reference by the student before a preliminary competency or competency, but may not be brought into the room during the exam.

If the student passes the clinical competency, the Clinical Instructor will record this information in the student's file. The student may record the clinical competency on the competency board in the classroom and on the corkboard at the control area of the x-ray department. This allows the personnel in the control area to realize where each student stands in competency.

Once competency is achieved, the student may perform the exam (with exception to portable, fluoroscopic, or surgical exams) on patients without the direct supervision of a Radiologic Technologist, but indirect supervision must always be maintained.

CONTINUOUS COMPETENCY EVALUATION

Continuous evaluation will be performed once a competency has been achieved for a radiographic procedure.

The Clinical Instructor reserves the right to take away any competency exam after 2-3 repetitive mistakes, depending on the severity. In this situation, the student would then have to repeat both preliminary exams and the competency in this exam. Documentation will be made as to why the competency was taken away and will be placed in the student's file.

The Lead Clinical Instructor will determine if the student reaches terminal competency. Terminal examinations will be done in the clinical setting near the end of the 5th trimester. They will be done on actual patients. All other criteria used in competency

evaluation will remain the same. The terminal competency will be an examination or a segment of an examination and will be at the discretion of the Clinical Instructor. Each student will be instructed to perform 1 exam in each category – spine; chest/bony thorax/abdomen; lower extremity; and upper extremity. Terminal competencies are done to determine the preparation of the student to perform as a Radiologic Technologist.

Also, during the 4th and 5th trimesters, the student has the responsibility of seeking out 3 "Critical Thinking" exams. These will include anything that is not done in the "routine way" and requires the student to use their skills to come up with the appropriate images required.

CLINICAL EVALUATIONS

Clinical Evaluations are submitted at the end of each trimester. Assigned staff will evaluate each student using the student evaluation form given to them by the Clinical Instructor. The Clinical Instructor, using the evaluation analysis formula, will then compute a grade. The Educational Director and the Clinical Instructor will review the evaluations privately with the student and make suggestions in areas in which the student may need to improve on or goals for the student to attempt to achieve. The student will sign and date the evaluation as an indication of receipt of the evaluation, not as an agreement to the evaluation statement. All documents will be placed in the student's master file. The student evaluation grades will be used in the formation of the student's clinical grade. The student evaluations are used as a tool for the student to be informed of the areas of needed improvement and areas to which they are satisfactory.

FORMATION OF THE CLINICAL GRADE

Students will receive a clinical grade at the end of each evaluation period. The clinical grade will be based upon the clinical evaluation grades from the staff, the evaluation from the Clinical Instructor, and an average of all the clinical competency grades received during that evaluation period. The student's overall clinical grade will be determined by the following evaluation analysis formula:

- 40% - Clinical Evaluation from Clinical Instructor
- 40% - Competency Evaluation Grades Averaged
- 20% - Clinical Evaluation from Staff

All clinical grades will be recorded on the student's transcript sheet.
***For trimester 6, Competencies and simulations will count as 40% or your final grade and Terminal Competencies will count as 10% of your final grade and Critical Thinking Exams will count as 10% (taking the place of Clinical Evaluations from the staff). If the student does not do at least 2 Critical Thinking exams, the grade for that section will be a 0. An overall final evaluation is only filled out by the Lead Clinical Instructor.
*** For trimesters 2, 3, 4 and 5, each student will fill out a self-evaluation. During these trimesters, the self-evaluation will count as 10% of the clinical grade, and the clinical evaluation from staff will count as 10% of the clinical grade rather than 20%.

ACADEMIC PROBATION

See School of Radiologic Technology handbook, Policy RTS-37.

IMMEDIATE DISMISSAL

Any serious infraction of department or program policy will result in immediate expulsion or probation as decided by the Advisory Committee.

GUIDELINES FOR COMPETENCY EVALUATIONS:

Film size/direction	Incorrect size	-3 pts
	LW vs CW wrong	-3 pts
Distance	Wrong distance; minor, ex- not locked in to 40"	-3 pts
	Major; wrong distance used (72" vs 40")	-6 pts
Patient Positioning	Did not know correct positioning	-10 pts
	Minor positioning error (not repeated)	-3 pts
	Clipped anatomy (repeated)	-6 pts
Central Ray/ Bucky/Tube alignment	Not lined up at all	-6 pts
	Off but not repeatable	-3 pts
Tube angulation	No angle used when needed	-6 pts
	Incorrect degree	-3 pts
	Incorrect direction	-6 pts
Artifacts not removed	In desired anatomy/repeated	-6 pts
Radiation Protection	Didn't shield or ask about pregnancy	-6 pts
Breathing Instructions	None given/incorrect	-3 pts
Markers	No marker used	- 6 pts
	Mismarked/noticed and corrected by student	-3 pts
	Coned off/not visible	-2 pts
	Mismarked/not corrected or corrected by tech	Automatic Fail
Patient Identification	Did not use double patient ID	Automatic Fail
	Did not check chart/Dr's written order	Automatic Fail
	Image assigned to wrong patient ID	Automatic Fail
Collimation	Inadequate	-3 pts
	Clipped anatomy/Repeated	-6 pts
Exposure Index	Slightly out of range	-3 pts
	Repeatable/too light or too dark	-6 pts
Windowing/Leveling	Student unable to accurately adjust image	-3 pts
Failure to observe patient during exposure		-3 pts
Failure to assist patient as needed	No patient care skills/respect of pt privacy	-6 pts
Failure to prepare room before patient enters/ Or failure to prepare for next view		-3 pts
Overall ability to perform exam	Minor mistakes	-2 pts
	Moderated mistakes	-4 pts
	Major mistakes	-6 pts

AUTOMATIC FAILURE:

1. Procedure had to be terminated by evaluator
2. Wrong patient done or images assigned to wrong patient identification
3. Gross violation in radiation protection practice
4. Mismarked image
5. Student did not double ID patient or correctly interpret physician's order

REVISED 8/13; 7/14; 7/16;6/17; 9/17; 7/19; 5/20

All mandatory competencies and 15 electives must be completed in order for the student to be granted graduation. A maximum of 8 simulations can be done if all competencies are not received by the student. The following is a list of bonus comps, .5pts will be given for each one completed. These points will be added on to the student's final clinical grade, not to exceed 100%.

- Navicular
- 3-Phase
- Retrograde
- Hysterosalpingogram
- Carpal Canal
- Leg length study
- VCUG

UPMC Chautauqua School of Radiology
STUDENT PRELIMINARY COMPETENCY FORM

Student_____ **Date**_____ **Room #**_____
Exam_____ **Accession #**_____

Did the Student Radiographer:	Yes	No	Comments:
1.Thoroughly review request, check pt ID, and check doctor's written orders?			
2. Have room and equipment ready?			
3. Practice good patient care?			
4. Demonstrate expedience in doing exam?			
5. Demonstrate knowledge of how to use equipment and computer?			
6. Show evidence of radiation protection?			
7. Position each projection properly?			
8. Align the part on the cassette correctly?			
9. Measure; use chart; and make proper adjustments for distance, grid, and pathology?			
10. Use the correct lead marker(s) on the correct side in the field of view?			
11. Collimate properly to the area?			
12. Assign images to correct patient, and complete exam correctly with correct follow through of exam?			
13. Did the student use critical thinking skills?			
14. Was any image repeated?			
15. If an image was repeated, tell why:			

PASS or FAIL

Evaluator_____**Date**_____

UPMC Chautauqua WCA School of Radiology
Laboratory Performance Evaluation

Name_____ **Date**_____

Procedure_____

Objective: Prior to performing any exam on a patient, the student must pass a laboratory simulation. The lab will be graded on a percentage basis and the student must receive an 85% or higher to pass. The percentage will be determined by the grading system followed for a competency. The lab will be repeated until passed, and all grades will be averaged to make up 70% of the clinical grade.
Students will be graded on the following:

_____ 1. The student explains properly how to change the patient for the exam being performed. Also lists any items that need to be removed.

_____ 2. The student tells any preparation needed for the exam.

_____ 3. The correct number and size of cassettes are used.

_____ 4. The x-ray tube is locked in/lined up to the bucky.

_____ 5. Radiation protection is practiced for patient.

_____ 6. Proper collimation is used.

_____ 7. The correct SID is used.

_____ 8. Correct central ray and positioning of patient is used.

_____ 9. Correct markers are used and on correct side of patient.

_____ 10. Student chooses correct exposure factors according to average techniques given.

_____ 11. Correct and clear instructions are given for moving patient.

_____12. Correct breathing instructions are given.

_____ 13. Can explain proper way of assigning patient identification to images.

_____ 14. Performs exam with minimal help from instructor.

_____ 15. Can use equipment and utilize locks correctly.

_____ 16. Can explain how to make necessary adjustments in positioning and/or techniques for various patient conditions.

Comments:

_____

_____

_____

Evaluated by: _____ **Grade:** _____

CT Schedule Guide

I. Week 1:

A. Introduction of CT equipment
   - Basic overview

B. Teach movement of table and gantry
   - Have student help get patients on and off the table

C. Position patients for the different exams
   - Make sure they oriented on table properly
   - Student uses either the internal or external lights center patient for the specific exam

D. Give general instruction of what you are doing as the exam is being completed

II. Week 2:

A. Start the student working at the control area
   - Pull up patients from list
   - Select the exam/protocol
   - Set the scan lines
   - Complete the scan including reformats

B. Give basic information on the anatomy being viewed as scan is completed.

III. Week 3:

A. Continue to practice completing exams

B. Start to prelim and comp

IV. Week 4:

A. Have student finish comps if not complete

B. Continue to reinforce what has been taught
   - Have student perform/complete at least every 3rd exam with necessary assistance

****Students are only to do non-contrast exams****

UPMC Chautauqua School of Radiology
Clinical Performance Evaluation

Name_____ Date_____ Points ___/44

Instructions: Please circle the appropriate level of satisfaction that applies to the student you are evaluating based on your experience with the student in the clinical setting:

	1	2	3	4
Patient Care	Shows no respect or care toward patient. Shows little to no communications skills	Gets the exam done, but does not relate well with the patient. Shows below average communication skills	Usually treats patients respectfully and usually assists as needed for different levels of patient ability. Shows average communication skills	Always treats patients respectfully and assists as needed for all levels of patient ability. Shows good communication skills
Clinical Performance	Usually seems disinterested and is often unable to work alone on comped exams	Sometimes seems disinterested in learning and often needs more than average assistance on comped exams	Usually shows an interest in learning and usually is proficient in comped exams	Always shows an interest in learning and is proficient in comped exams
Professionalism	Does not care about appearance, does not attempt to work well with co-workers or classmates, and does not care to keep a professional attitude within the department	Often looks unprofessional, has a hard time getting along with co-workers or classmates, and usually does not contribute to maintaining a professional atmosphere in the department	Usually dresses and looks appropriate, usually gets along with co-workers and classmates and usually helps to maintain a professional atmosphere in the department	Student always adheres to dress code, always works well with co-workers and classmates and always helps to maintain a professional atmosphere within the department
Radiation Protection and Safety	Demonstrates unacceptable skills by never using lead for self or patients or asking about pregnancy, does not collimate properly, does not use proper techniques to keep EI within range, and is unaware of importance of keeping repeats to a minimum	Demonstrates below average skills by often forgetting to use lead for self or patients, forgets to ask about pregnancy, usually does not collimate properly, usually doesn't use proper techniques to keep EI within range, and sometimes seems unaware of importance of keeping repeats to a minimum	Demonstrates average skills by always using lead for self and patient, asking about pregnancy, uses proper collimation, and most always uses techniques that keep EI within range, and usually seems aware of importance of keeping repeats to a minimum	Demonstrates excellent skills by always using lead for self and patient, asking about pregnancy, always collimates properly, always uses techniques that keep EI within range and is always aware of importance of keeping repeats to a minimum
Cooperation/ Acceptance of Constructive Criticism	Often does not care to help and/or not open to suggestions from technologists	Sometimes needs to be asked to help and often seems disinterested in suggestions from technologists	Usually willing to help and usually open to suggestions made by technologists	Always willing to help and always open to suggestions made by technologists
Initiative	Always needs to be asked to do exams or extra duties, or sometimes refuses and only works with a couple of technologists	Often needs to be asked to do exams or help with extra duties and only works with a few technologists	Rarely needs to be asked to do exams or help with extra duties and works with most technologists	Always willing to do any exams or extra duties such as transport, stock rooms, lift help, etc. and works with all technologists
Confidentiality	Student seems to not care about HIPAA or patient privacy	Student often unnecessarily or inappropriately discusses patients	Student is usually aware of HIPAA but sometimes discusses patients when unnecessary or in an inappropriate environment	Student is always aware of HIPAA and only discusses patient information when necessary and in an appropriate environment
Critical Thinking	Can never adapt to situations. Always needs help from technologist for level of training	Can sometimes adapt to situations. Needs more than average help from technologist for level of training	Can adapt to most situations with minimal help from technologist for level of training	Can adapt to any situation for level of training including: trauma, elderly, babies, mobile and OR cases

Direct and Indirect Supervision	Student never follows policy on supervision concerning competencies and repeat images and never has repeat book signed by technologist	Student rarely follows policy on supervision concerning competencies and repeat images and rarely has repeat book signed by technologist	Student usually follows policy on supervision concerning competencies and repeat images and usually has repeat book signed by technologist	Student always follows policy on supervision concerning competencies and repeat images and always has repeat book signed by technologist

Technical Skills	Student is unaware of proper use of technical factors (MAS, KVP, SID) to keep EI within range, and can never properly adjust technique when EI is not within range.	Student is rarely aware of proper technical factors (MAS, KVP, SID) to keep EI within range, and can rarely properly adjust technique when EI is not within range.	Student is usually aware of proper technical factors (MAS, KVP, SID) to keep EI within range, and can usually properly adjust technique when EI is not within range.	Student is always aware of proper technical factors (MAS, KVP, SID) to keep EI within range, and can always properly adjust technique when EI is not within range.
Effective Communication	Student never uses effective verbal and non-verbal communication skills with any members of the healthcare team (co-workers, nurses, doctors, etc)	Student rarely uses effective verbal and non-verbal communication skills with all members of the healthcare team (co-workers, nurses, doctors, etc)	Student usually uses effective verbal and non-verbal communication skills with all members of the healthcare team (co-workers, nurses, doctors, etc)	Student always uses effective verbal and non-verbal communication skills with all members of the healthcare team (co-workers, nurses, doctors, etc)

Student level of knowledge at time of evaluation:

At this time, the students have learned all chest, abdominal, upper extremity, shoulder girdle and most lower extremity exams. They should be participating in any of these exams that come in (that they are competent to do at this level) and steadily showing improvement with these exams. They should be assisting with transporting, stocking rooms, preparing rooms for exams and cleaning up after the exam as well as doing the exams they are labed in.

1. Please list the strengths that the student possesses:

_____

_____

_____

2. Please list any areas for needed improvement:

_____

_____

_____

3. Please write a couple sentences about the student's overall clinical performance in this past trimester:

_____

_____

_____

UPMC Chautauqua WCA School of Radiology
Clinical Performance Evaluation: Student Self Evaluation

Name_____**Date**_____ **Points** ____**/28**

Instructions: Please circle the appropriate level of satisfaction that correlates to how you feel you did this past semester:

	1	2	3	4
Patient Care/ Communication	Shows no respect or care toward patient. Possesses little to no communication skills	Gets exam done, but does not relate well with patient. Possesses below average communication skills	Usually treats patient respectfully and usually assists as needed for different levels of patient ability. Possesses average communication skills	Always treats patients respectfully and assists as needed for all levels of patient ability. Possesses good communication skills
Radiation Protection and Safety	Does not ever remember to use lead shield for patients or self, and does not remember to ask about chance of pregnancy	Often forgets to use lead shield for patient or self, and often forgets to ask about chance of pregnancy	Usually remembers to use lead shield for patient and self, and most always remembers to ask about chance of pregnancy	Always remembers to use lead shield for patient and self, and always remembers to ask about chance of pregnancy
Cooperation/ Acceptance of Constructive Criticism	Does not get along with classmates/technologists, and is not open to suggestions from technologists	Often does not get along with classmates or technologists, and is often not open to suggestions made from technologists	Usually gets along with classmates and technologists, and is usually open to suggestions made from technologists	Always gets along with classmates and technologists, and is always open to suggestions made from technologists
Initiative/ Clinical Performance	Unable to work alone on comped exams, always needs to be asked to do exams or extra duties, or sometimes refuses, only works with a couple of technologists, avoids working with some technologists	Often needs more than average assistance on comped exams, often needs to be asked to do exams or extra duties, only works with a few technologists	Usually does well with comped exams, rarely needs to be asked to do exams or help with extra duties and works with most technologists	Always does well on comped exams, and never needs to be asked to do exams or help with extra duties, and works with all technologists
Confidentiality	Does not care about HIPAA or patient privacy	Often unnecessarily or inappropriately discusses patient information	Usually aware of HIPAA but sometimes discusses patients when unnecessary or in an inappropriate area	Always aware of HIPAA and only discusses patient information when necessary and in an appropriate environment
Direct and Indirect Supervision	Never follows policy on supervision concerning competencies and repeat images and/or never has repeat book signed by technologist	Rarely follows policy on supervision concerning competencies and repeat images and/or rarely has repeat book signed by technologist	Usually follows policy on supervision concerning competencies and repeat images and/or usually has repeat book signed by technologist	Always follows policy on supervision concerning competencies and repeat images and/or always has repeat book signed by technologist
Technical Skills	Unaware of proper use of technical factors (MAS, KVP, SID) to keep EI within range, and can never properly adjust technique when EI is not within range	Rarely aware of proper use of technical factors (MAS, KVP, SID) to keep EI within range, and can rarely properly adjust technique when EI is not within range	Usually aware of proper use of technical factors (MAS, KVP, SID) to keep EI within range, and can usually properly adjust technique when EI is not within range	Always aware of proper use of technical factors (MAS, KVP, SID) to keep EI within range, and can always properly adjust technique when EI is not within range

1. Please list the strengths that you feel you possess:

2. Please list any areas you feel you could improve on:

3. Please write a couple sentences about your overall clinical experience this semester:

UPMC Chautauqua WCA School of Radiology
Imaging Modality Class Objectives

Prior to optional clinical rotations through modalities a class will be given for all students by the lead technologist in that department. All students must be in attendance. The following are lists of objectives for each modality class.

Mammography: (1 hour)

After completing the class, the student should:

1. Be aware of the Mammography projections taken (why a certain view is taken and what it shows).
2. Have a basic understanding of what the Mammography workstation is.
3. Know the basics of the Hologic Selenia Dimenstions Unit.
4. Know what a Stereotactic Breast Biopsy is.
5. Understand the difference between 2D and 3D Mammograms.
6. Understand the basics of the history questionnaire.
7. Understand image critique of masses and calcifications.

Ultrasound: (1 hour)

After completing the class, the student should:

1. Know the main difference between X-ray and Ultrasound. Soundwaves vs radiation.
(Focused, not complete overview).
2. Be able to describe different transducers and their uses.
3. Understand transducer orientation to demonstrate longitudinal and transverse.
4. Be able to distinguish between cystic vs solid vs bone.
5. Understand the need for Ultrasound to correlate with other modalities frequently.

Magnetic Resonance Imaging: (1 hour)

After completing the class, the student should:

1. Understand and be able to list the potential dangers and hazards of MRI.
2. Go over a list of medical equipment that is not MRI safe and cannot enter the MRI suite.
3. Understand the screening process that all patients, visitors, and non-MRI personnel

(including observing students) must go through before entering the MRI suite.
4. Be able to list contraindications for an MRI procedure.
5. Be able to discuss the role healthcare professionals and physician's office staff have in MRI safety.

Nuclear Medicine (1 hour)

After completing the class, the student should:

1. Have a general understanding of Radiation safety dealing with Nuclear Medicine including: time, distance, shielding, knowing who the RSO is, and A/AA.
2. Have a general understanding of radioactive isotopes, half-lives, the hot lab, and ordering isotopes.
3. Know how to deal with radioactive waste. (Outpatients, In-patients, and needles/syringes).
4. Learn a brief overview of the exams done.
5. Understand the processing/filming that goes along with the imaging area.

Radiation Therapy (1 hour)

After completing the class, the student should:

1. Know what a Port film is.
2. Know the difference between Radiation therapy and Diagnostic X-ray.
3. Know what goes into a treatment plan (tumor volume and dosimetry).
4. Know the difference between palliative and definitive RT.
5. Know and understand the IMRT/SMRT/3D conformal RT.
6. Understand respiratory gating.
7. Know the patient flow/procedure before starting RT.

Critical Thinking Exams

Name _____ Date _____

Exam

Each student is required to complete, in the 4th or 5th trimester, a total of 3 Critical Thinking exams that will be chosen by the technologist or Clinical Instructor. The student will be graded using the rubric below. The exams chosen should be non-routine and require the student to use "Critical Thinking Skills". These exams can include trauma, geriatric, pediatric, and other "non-routine" exams. The student must complete the exam with minimal help from the technologist and come up with ways of getting the needed images on their own. The grade will be averaged into the 6th trimester Clinical Grade. If AT LEAST 2 of the 3 exams are not completed, a 0 will be given for this section of the grade. Using the rubric below, please circle the appropriate response:

	1	2	3	4
Ability/ Decision-Making	Student showed minimal to no ability in decision making or performing exam without help from technologist	Student showed below average to minimal ability in decision making without help from technologist	Student showed average ability in decision making without help from technologist	Student showed excellent ability in decision making without help from technologist
Expedience	Student took too long in getting images/tech had to step in and help	Student took a longer than average time in getting images	Student took an average amount of time in getting images	Student was very expedient in getting images
Confidence	The student showed no confidence and the overall outcome of the exam was very negative	The student showed little confidence and the overall outcome of the exam was below average	The student showed some confidence, and the overall outcome of the exam was average	The student showed great confidence and the overall outcome of the exam was very good/excellent
Critical Thinking	The student was not able to come up with any ideas on how to get needed images on own	The student needed more than average assistance in getting needed images	The student needed average assistance in getting needed images	The student needed no assistance in getting needed images
Communication/ Patient Care	The student showed very poor communication and patient care skills	The student showed below average communication and patient care skills	The student showed average communication and patient care skills	The student showed excellent communication and patient care skills

Grade: _____/20

Signature:_____ Date: _____

Competency Goal Recommendation

*This is not a requirement, but a guide, for the student to follow to stay on an accurate path of completing competencies in a timely manner.

Trimester 1

2-3 Competencies

Trimester 2

11-12 Competencies

Trimester 3

22-25 Competencies (*22* Competencies MUST be completed by September 1 to be eligible for Modality rotations.)

Trimester 4

35-37 Competencies

Trimester 5

48-50 Competencies

***A total of 52 competencies (37 mandatory and 15 elective) must be completed by the end of Trimester 6.**