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GENERAL RULES AND GUIDELINES

Students are subject to all rules and regulations of the Medical Center, both institutional and departmental.

1. Students **will not** inject contrast media or medication until trained and never without the supervision of an R.T., RN or a Physician.
2. A student **should not** hold a patient while an exposure is being made.
3. It is the patient's right to be treated with dignity and care by a clean individual.
4. Each student must practice good personal hygiene.
5. Students should keep rooms clean and fully supplied with clean linen, emesis basins, needles, syringes, etc.
6. Students should clean tables after each patient and disinfect contaminated equipment.
7. Students are **required** to supply the PD with a telephone number where they can be reached.
8. The time allotted for meals during clinical or academic assignments is thirty (30) minutes. Eating, drinking, and/or smoking are only allowed in designated areas.
9. Departmental telephones are business telephones and personal phone calls are discouraged. Cell phone use should be limited to break times. (Refer to Cell Phone Policy in Section III, page 11).
10. Students are **expected** to show courtesy and respect to everyone, i.e. patients, visitors, co-workers, physicians, etc.
11. Physicians are to be shown respect by referring to them as "Doctor" while in the hospital.
12. Students should devote their attention to the patient and refrain from discussing personal matters while in the presence of the patient.
13. Reading newspapers, books, magazine, etc. is not permitted in the clinical area while a patient is in the department awaiting a radiographic examination.
14. Students should discourage visitors to the Radiology Department during clinical education assignments. A student should not visit the department while off duty.
15. The student may study in the department provided there are no patients who require their services. Studying is not permissible at times when a student should be administering patient care. Studying may be defined as reading textbooks or practicing radiographic procedures with each other; however, no radiographic exposures will be made.
16. A student who disobeys direct and specific orders related to radiographic services to a patient may be dismissed from the program.

17. **Horseplay is not permitted!!** Horseplay is a serious matter that may result in injury to yourself or others or lead to destruction of equipment or supplies.
18. Loud noises in patient care areas should be avoided. These include laughing, singing, whistling, loud talking, arguing, foul language, etc.
19. Any doctor, dental or personal appointment should be made on scheduled days off, before or after the assigned shift.
20. Clinical swapping for weekend assignments has to be approved by the PD or Clinical Coordinator. This should be done within the students own class.
21. A student may be asked to transport patients, or perform other tasks that are pertinent to radiographic examinations of patients and patient care.
22. A student cannot achieve competencies while working for pay.

CLINICAL EDUCATION ELIGIBILITY

In order to provide proper patient care in the clinical setting, students assigned to the clinical education center must meet the following criteria by the end of the first quarter of the program.

1. Complete the competency orientation program for new students.
2. Successfully complete the classes on body mechanics and basic patient care.
3. Be certified in cardiopulmonary resuscitation (CPR) and maintain certification throughout the program.

CLINICAL EDUCATION PLAN

1. Clinical assignments will be conducted at DCH Regional Medical Center and other clinical affiliates of the program (see Appendix D).
2. Clinical education will be concurrent with academic classes.
3. Clinical assignments will vary from quarter to quarter. A schedule listing assigned hours and areas will be posted before the end of the previous quarter. Clinical assignments may be scheduled on all shifts. The Clinical Coordinator will schedule shift assignments.
4. Total clinical and classroom hours will not exceed forty hours per week. Assignments on any given day or shift will not exceed eight hours.
5. A change in the daily or shift assignment schedule must be approved by the Clinical Coordinator.
6. Students will have all DCH holidays off and other such time off as determined by the program.

CLINICAL EDUCATION ASSIGNMENTS

The clinical coordinator will oversee the following activities:

1. Daily assignment schedule, attendance, time off and clinical evaluation for each student.
2. Assignment of the student to a room / technologist in the clinical education setting.
3. Changes in the clinical schedule, room or technologist assignment may be done for the benefit of the student's clinical education. The clinical coordinator must approve this.
4. Room and area assignments may include the following:
 - a. Radiology Patient Transportation
 - b. Routine / Diagnostic Radiography
 - c. Fluoroscopy
 - d. Surgery / Cystography
 - e. Ultrasound
 - f. Cancer Treatment Center
 - g. Mobile Radiography
 - h. Trauma Room / ED
 - i. Advanced Imaging Areas (CT, MRI, Angio, NM)
 - j. Cardiac Catheterization Laboratory
 - k. DCH Outpatient Imaging
 - l. DCH Radiology (RMC)
 - m. DCH Northport Radiology (NMC)
 - n. DCH Fayette Radiology (FMC) (optional clinical site open to all interested students)
 - o. The Radiology Clinic
 - p. Ruby Tyler Parkway Imaging

CLINICAL EDUCATION ATTENDANCE

See page 24 in Section III of handbook. Shift rotations are a requirement of the clinical education component. For additional information, see the clinical education complete descriptions in this section.

CLINICAL EDUCATION RULES AND REGULATIONS

1. Students are subject to the rules and regulations of the Radiography Program, Imaging departments, clinical affiliates, and the sponsor. All students are required to read the policy manual of the Radiography Program and the policy and procedure manual of the clinical site and become familiar with those rules and regulations.
2. If a student is determined to be in violation of the rules and/or regulations, the PD and/or clinical coordinator will council the student about the violation.
3. If the student continues to violate the rules and regulations, disciplinary action will be taken as outlined in the policy manual.

4. Students will not inject contrast media until trained and never without supervision (ARRT, RN or physician).
5. All students must notify the clinical instructor/supervisor before leaving at the end of each clinical assignment.
6. **ALL** students are required to clock in and out in Meditech for every clinical rotation assignment and classroom attendance.
7. Students are not allowed to leave scheduled clinical assignments early except under extenuating circumstances. All students must notify the clinical instructor/supervisor before leaving.
8. Students who engage in any type of employment related to the career field must notify the PD.
9. Employment **will not** be substituted for clinical education. **Students may not perform clinical competency evaluations while in employment status at any facility at any time.**
10. At no time will students be substituted for paid staff during any assigned clinical rotation.
11. Clinical competencies may not be done on individuals other than patients. A patient is defined as an individual who requires a radiographic procedure that has been ordered by a physician.

MALPRACTICE INSURANCE

Each student is covered with personal liability insurance at all clinical education facilities while enrolled in the program. Liability insurance is provided by DCH at no cost to the student. Hospital insurance may be purchased through DCH.

STUDENT HEALTH SERVICES

DCH Regional Medical Center provides employees and students with health services through the facility employee health nurse. The health nurse is available Monday through Thursday from 6:00 a.m. to 4:30 p.m. and Friday from 6:00 a.m. to 3:30 p.m. The health nurse is located on the second floor of the medical tower in Suite 205. The phone numbers are 205.750.5905 or 205.759.7698.

Should a student be injured or become ill while in student status and require these services, the clinical instructor should be notified immediately. If the CI is not available, then the next person in charge, i.e. supervisor, should be notified. He/she will ensure that the student completes an Employee Work Injury form and is then referred to the employee health nurse. **If the injury or illness occurs after hours, then they should be referred to the Emergency Department.** If the student refuses treatment, or treatment is not needed, the student should go to the employee health nurse.

The employee health nurse will notify the PD and/or clinical coordinator regarding the status of the student within 24 hours of the filing of the incident report unless the report occurs after normal

hours or on a weekend. The employee health nurse will provide a copy of the incident report to the PD within 24 hours of receipt.

Access to health care is restricted to injuries sustained while attending school only. Illness or injuries not related to school or any follow-up care is the responsibility of the student. Students are not eligible for monetary worker's compensation for any loss of hours but will be covered under the hospital's worker compensation policy for treatment.

Should the facility employee health nurse not be available at the time of the injury or illness, the clinical instructor/supervisor will be responsible for advising the student as outlined above. The incident report and final disposition of the student will be forwarded to the facility employee health nurse for review by close of the next business day.

RADIATION SAFETY MONITORS

See page 26, Section III of the student handbook.

RADIATION PROTECTION PRACTICES

See page 27, Section III of the student handbook.

DRESS CODE

See complete dress code policy on page 7, Section III of the student handbook

COMPETENCY-BASED CLINICAL EDUCATION

The responsibilities of a radiographer have grown in complexity with the development of more sophisticated procedures and equipment in the medical imaging sciences. It is essential that both the Radiography Program and the student work together to provide the best educational experience possible. During the clinical experience, students must have the opportunity to perform all routine types of radiographic procedures. Only in this manner will the student be prepared for entry into the profession. Students' cognitive skills are evaluated directly in the classroom and indirectly throughout his/her educational experience. The affective learning domain is challenged during all phases of the education program. The students' psychomotor skills are evaluated in the laboratory and during their clinical assignments. In addition, the student's critical thinking and problem solving skills are developed throughout the program utilizing a variety of didactic, laboratory and clinical exercises. Only with a competency based evaluation system can we determine the proficiency level a student has achieved.

GENERAL PLAN FOR COMPETENCY BASED CLINICAL EDUCATION

The clinical coordinator has primary responsibility for clinical education assignments, supervision and evaluation. Each clinical education center has a designated clinical instructor responsible for the supervision, instruction, counseling and evaluation of assigned students. The clinical instructor or a qualified staff technologist, RT (R) (ARRT) will supervise the students in the clinical education centers at all times. Supervision of students may be direct or indirect. The type of supervision is determined by the progress of the assigned student. Direct and indirect supervision are defined as follows:

Direct Supervision – the supervising technologist is present in the radiographic room when the student is performing a Radiologic examination. The supervising technologist is responsible for assisting the student and assuring proper procedures are followed.

Indirect Supervision – the student performs examinations without the presence of a technologist in the radiographic room. This type of supervision requires that a qualified technologist be **immediately available** to assist the student if necessary. Immediately available is defined as being in the adjacent room or within earshot of the student. Only those students that have proven competency in the exam will be allowed indirect supervision.

Mobile radiography (portables) will be performed under direct supervision at all times. Students are not allowed to perform mobile radiography without a qualified technologist to supervise.

All “repeat” radiographs will be performed in the presence of a qualified radiographer regardless of the student’s level of competency.

CLINICAL COMPETENCY EVALUATION SYSTEM

The goal of the program’s clinical evaluation system is two-fold. One is to measure the student’s capabilities in the clinical environment to adequately produce diagnostic images of various anatomical parts. The second is to measure behavioral characteristics (punctuality, professionalism, attitude, cooperation, quality of work, initiative, etc.)

Two evaluation instruments are used to measure the above areas. The first area is measured using the **Clinical Competency Evaluation Form**. The second area is measured using the **Clinical Progress Evaluation Form (General)**.

1. Use of the Clinical Competency Evaluation Form

Each quarter, the student will be graded on a minimum number of designated examinations completed unassisted.

For all examinations required for clinical competency, the student will have been tested and practiced the examination in the laboratory during a previous quarter or during the concurrent quarter.

In the clinical setting, a student who wishes to perform a competency exam **must** have passed the laboratory session on the procedure.

If the student meets the above criteria, then he/she will initiate a competency evaluation from Meditech. The student shall perform the procedure; process the images and have each projection evaluated using the clinical competency evaluation form. The evaluator must review the images with the student present and appropriately complete the clinical competency evaluation form.

An example of the clinical competency evaluation form can be found on the following pages. During a competency procedure, the student will be evaluated on a maximum of eleven (11) categories. Each category contains several tasks with a "Yes" and "No" box preceding it. For those tasks that the student does not perform properly, the evaluator places a check mark in the "No" box.

Each box that is checked "No" will result in a deduction of seven (7) points unless otherwise noted on the evaluation form. The student must receive a grade of 75 to pass the competency exam.

Note: Incorrectly identifying the side or part (right or left) being radiographed or the lack of proper patient identification (category 2) when performing a competency examination will result in the deduction of 14 points. This deduction will be recorded and will affect the average grade for the competency. This can easily be avoided by paying close attention to your work. A radiograph that is not properly marked (right or left) or does not correctly identify the patient is not a legal radiograph and can lead to legal problems for both the student and the medical facility. Should any projection require repeating, the point deduction for that projection will be at the discretion of the evaluator. This allows the evaluator to assign a grade that best reflects the problem that required the projection to be repeated. Minor problems should lead to a lesser grade reduction than major problems. The minimum point deduction is seven (7) points. Major problems could cause the student to fail that competency, e.g. < 75.

The clinical competency evaluation form is very important and when used properly can give a measure of a student's ability to adequately produce diagnostic radiographs of a specific anatomical part. Utilizing the form, one can quickly identify a student's problem area(s). At the end of any given period, the program will have documented the student's ability to obtain various diagnostic radiographs.

2. Example of Grading an Examination

When grading with the clinical competency evaluation form, the evaluator observes the student's performance in the radiographic room, reviews each projection, and makes a check mark in area(s) where a problem exists. Each evaluation category may be checked more than once. For example, if the student has positioned the patient incorrectly, a check would be placed in the "No" box next to letter "a" in the POSITIONING SKILLS category. If the student also did not adequately center the part of the film, another check would be placed in the "No" box next to letter "b" in the POSITIONING SKILLS category.

Should the student fail the entire competency evaluation, he/she must re-test on that procedure. The grade received on the re-test will be averaged with the first grade for one overall grade. Failed competency exams must be re-tested and passed before being eligible for graduation. Each student is expected to complete a minimum number of competency examinations per quarter. Failure to do so will result in a deduction of 5 points per competencies from the quarter average. The **MINIMUM number of competencies** to be performed during each quarter is listed under each clinical syllabus and on page 110. All competency exams must be completed before graduation.

Once the minimum number of competencies required for each quarter has been completed, the student may choose to perform further competency examinations on procedures the student has successfully completed in the laboratory. Students are expected to continue to perform procedures on previously completed competencies throughout his/her tenure in the program.

3. **Recomping of Competency Requirements**

Beginning in the 5th quarter (or 2nd year), students can start recomping exams. 80% of the exams listed on competency records must be recomping before graduation. The procedure to follow is the same as for other competencies.

4. **Use of the Professional Development Evaluation**

The professional development evaluation form is intended to be used by the clinical coordinator. This evaluation form will be completed by the CC at the end of the 1st quarter and the end of the 8th quarter. The completed forms will be used by the CC in the calculation of the student's clinical grade.

5. **Instructor's Performance Evaluation**

Since performance characteristics are weighted greater than personal characteristics, this evaluation form does not have as high a grade percentage assigned to it as the clinical competency evaluation form. It is a means of early recognition and correction of possible problems. The student must possess the skills required to work with other members of the health care team as well as patients while maintaining a positive attitude toward his/her education and job performance. This form is designed to help the student recognize whether he/she is developing or has developed these skills. An example of this form can be found on the following pages. Grading system is on the form.

CLINICAL EXPERIENCE DOCUMENTATION

Documentation of clinical experience is the basis for the evaluation of success in the clinical education component of the program. The completeness and accuracy of the documentation must be in accordance with the guidelines in this handbook. It is the individual student's responsibility to ensure that all clinical evaluation forms are completed and returned to the clinical coordinator or program office in a timely manner.

1. **Clinical Record Book**

Each student should record every radiographic examination that he/she observes, assisted with or performed. These examinations will be recorded in Meditech. The student clinical record book will be used by the clinical coordinator and/or PD to determine the quality and quantity of clinical experience the student is receiving. The clinical instructor will check for the number of exams and the accuracy of the documentation. It is the student's responsibility to ensure that the record books are accurate and up-to-date. **At any time, the clinical coordinator, clinical instructor or PD may ask the student to print out their clinical record so the program can determine whether the student is receiving the clinical experience required.** Clinical assignments will be determined by the student's level of experience. It is suggested that the clinical record is available upon request from the staff.

2. **Clinical Competency Record**

The competency record assists the student and the program in keeping track of competency examinations completed. The form is divided into sections by anatomical category. Under each category are examinations in which the student is required to demonstrate competency. This form is maintained by the clinical coordinator with the completed clinical competency evaluation forms and will be emailed to the student every time it is updated. Students keep the clinical record as personal documentation of clinical experiences.

3. **Radiographic Room Assignment Checklist**

Each student is provided objectives to be performed for each clinical area/room assigned. This checklist must be completed and returned to the clinical coordinator **by the end of the first quarter**. Objectives will be distributed during clinical orientation.

DIDACTIC AND CLINICAL CURRICULUM CORRELATION

Typical program schedule and prerequisites in clinical education assignments and correlation of clinical and didactic components.

Clinical Phase I	Prerequisites	Category	Academic Quarter
Clinical Education I	Admission to program	Chest & Abdomen; Pharynx & Larynx	Fall 1st year
Clinical Education II	Successful completion of CLN 100	Upper & lower extremities, long bone measurements, shoulder and pelvic girdle	Winter 1st year
Clinical Education III	Successful completion of CLN 200	Five vertebral regions and bony thorax	Spring 1st year
Clinical Education IV	Successful completion of CLN 300	Cranium & facial bones, sinuses & TMJ	Summer 1st year
Clinical Phase II	Prerequisites	Category	Academic Quarter
Clinical Education V	Successful completion of CLN 400	Contrast studies of the GI/GU systems & reproductive	Fall 2nd year
Clinical Education VI	Successful completion of CLN 500	Contrast studies of the CNS	Winter 2nd year
Clinical Education VII	Successful completion of CLN 600	Elective rotations & review	Spring 2nd year
Clinical Education VIII	Successful completion of CLN 700	Review & elective rotations	Summer 2nd year

Clinical Education (CLN 100)

Fall, 1st quarter Course Title: Applied Radiography I 240 clock hours Prerequisite: None

Tuesday and Thursday 7:00 a.m. – 3:00 p.m. Friday 11:00 a.m. – 3:00 p.m.

Applied Radiography I is the first in a series of eight clinical educations that will provide the student with the necessary experience and education needed to practice the art of radiography. During this quarter, the student will complete required didactic prerequisites and will begin clinical education by participating in laboratory practice. This orientation period will give the student many opportunities to observe radiological technologists performing their duties. By the end of the quarter, the student should be able to move from a passive mode of observation to a more active mode by assisting the RT in performing procedures.

As part of the orientation process, the student will have written objective assignments (1 – 3) to complete this quarter. These objectives should provide the student with preliminary performance proficiency.

Students will begin the weekend rotation in the Emergency Department on the fifth weekend. Each student will be assigned to one weekend per quarter. This time should be used to observe the difference in staffing, supervision, and prioritizing from the other department rotations. This will be an orientation period for the student. Objective number 4 is to be completed as the student rotates through the weekend shift.

Through the professional development evaluation, the student will be evaluated on their clinical efficiency, professional conduct, dress, abilities to understand and follow instructions and willingness to cooperate.

During this course, and all subsequent courses, the student will be exposed to film critique, patient care procedures, and responsibilities of maintaining their radiographic room as well as technical skills. During this first course, the student will be under Direct supervision. A staff technologist and/or instructor must assist with students while performing radiographs. A staff technologist must assist with ALL repeats.

COURSE OBJECTIVES

At the end of the first quarter, the student will be able to:

1. Understand and practice professional conduct and communication skills
2. Apply basic CPR skills learned in CPR class if need arises
3. Begin learning the art of critiquing radiographs
4. Understand and practice universal precaution procedures (hospital orientation)
5. Demonstrate proficiency of preliminary performance competency objectives (1 – 3)
6. Orientate to weekend clinical rotations and to the practice of radiographing patients with fractures and injuries (objective 4)
7. The student will complete category competency evaluations, after laboratory and clinical practice

ATTENDANCE

1. All make-up time is to be made up at the discretion of the clinical coordinator and/or PD
2. If sick, the student is required to call in 30 minutes before the hour they are scheduled to report to their clinical assignment (see sick policy in handbook)
3. Punctuality is expected and enforced
4. All vacation or excused absences must be approved in advance

GRADE DETERMINATION

- | | | | | |
|----|-------------------------------------|-----|------------------------|---------|
| 1. | Professional development evaluation | 90% | of _____ | = _____ |
| 2. | Clinical objectives written (1 – 4) | 10% | of _____ | = _____ |
| | | | Final Clinical Grade = | _____ |

GRADING

A = 93 – 100 B = 83 – 92 C = 75 – 80 F = Below 75

**DCH Regional Medical Center
School of Radiologic Technology**

**Room Objective #1
Portables and Surgery**

Student _____

Clinical Site _____

Evaluator (signature) _____

Date _____

Grade _____ (6.4 points each)

Portable equipment

(Technologist to initial each blank as they are completed)

Demonstrates:

Yes	No	
___	___	1. Recharging
___	___	2. Storing
___	___	3. Technique selection
___	___	4. How to use locks
___	___	5. How to open and close collimator

Surgery

Yes	No	
___	___	1. Understands sterile field
___	___	2. Demonstrates daily cleaning procedure for processor
___	___	3. Able to check chemicals

C-Arms

Yes	No	
___	___	1. Able to turn on / off emergency equipment
___	___	2. Demonstrates correct use of controls and locks
___	___	3. Annotates a patient's name

Safety

Yes	No	
___	___	1. Practices patient shielding and collimation
___	___	2. Practices self radiation protection (lead apron, distance)
___	___	3. Practices universal precautions
___	___	4. Can verbalize proper precautions and the protocol for high-risk nursery

**DCH Regional Medical Center
School of Radiologic Technology**

**Competency Objective
Emergency Department - #2**

Student _____

Clinical Site _____

Evaluator (signature) _____

Date _____

Grade _____ (10 points each)

General Responsibilities

(Technologist to initial each blank as they are completed)

Demonstrates:

Yes No

- | | | | |
|-----|-----|-----|--|
| ___ | ___ | 1. | Understands how patient orders are received in ED Radiology |
| ___ | ___ | 2. | Demonstrates how to use Synapse |
| ___ | ___ | 3. | Can take exams to taken and edit exams |
| ___ | ___ | 4. | Demonstrates how to look up a report on the computer |
| ___ | ___ | 5. | Practices Universal Precautions |
| ___ | ___ | 6. | Understands the process of patient transport in the ED |
| ___ | ___ | 7. | Knows procedure for assuring nurse call button is within patient's reach |
| ___ | ___ | 8. | Understands options when extra help is needed |
| ___ | ___ | 9. | Knows procedure for letting ED know exam is complete |
| ___ | ___ | 10. | Able to locate: |
| ___ | ___ | | Fire alarm |
| ___ | ___ | | Fire extinguishers |
| ___ | ___ | | Emergency exits |
| ___ | ___ | | Crash cart |
| ___ | ___ | | Wall suction |
| ___ | ___ | | Wall oxygen |
| ___ | ___ | | Linen supply |
| ___ | ___ | | Supplies |

**DCH Regional Medical Center
School of Radiologic Technology**

**Competency Evaluation
Room Objective #3
General**

Student _____

Clinical Site _____

Evaluator (signature) _____

Date _____

Grade _____ (2.2 points each)

Function and Application of Generator

(Technologist to initial each blank as they are completed)

Yes	No		
___	___	1.	Able to locate on / off switch
___	___	2.	Able to "boot up" equipment
___	___	3.	Locates emergency stop switch
___	___	4.	Correctly sets kVp, mA and time
___	___	5.	Able to locate mAs display
___	___	6.	Locates circuit breaker

Fault Indicators

Indicates corrective measures for the following

Yes	No		
___	___	1.	Error message displays
___	___	2.	Correcting faults
___	___	3.	Photo timing faults

Use of Photo Timing

Able to perform the following

Yes	No		
___	___	1.	Field select, to select the ionization chamber to be used for automatic exposure control
___	___	2.	Bucky selection (selects wall / table bucky)
___	___	3.	Density selection (plus and minus)
___	___	4.	Fluoro section

X-ray Table Functions

Demonstrates operation of the following locks and controls

Yes	No		
___	___	1.	Lateral controls (foot operated, table side operated and spot film device operated)
___	___	2.	Longitudinal controls (foot operated, table side operated and spot film device operated)
___	___	3.	Elevation controls (table side operated and spot film device operated)
___	___	4.	Table accessories (safety strap, footboard, shoulder supports)
___	___	5.	Able to "lock in" and release image intensifier
___	___	6.	Ability to manipulate controls

X-ray Tube

Correctly demonstrates the following

- | Yes | No | |
|-----|-----|---|
| ___ | ___ | 1. Timed centering light switch |
| ___ | ___ | 2. 40-inch SID detent operation |
| ___ | ___ | 3. Transverse detent (for table bucky) |
| ___ | ___ | 4. Longitudinal lock switch |
| ___ | ___ | 5. 40-inch detent for the wall bucky |
| ___ | ___ | 6. 72-inch detent for the wall bucky |
| ___ | ___ | 7. Transverse detent for the wall bucky |

Safety Requirements

- | Yes | No | |
|-----|-----|---|
| ___ | ___ | 1. Is able to verbalize the correct procedure to follow for
frayed cables
broken wires
odd sounds
shock, when touching a piece of equipment |
| ___ | ___ | 2. Understands the importance of using only plugs with third prong for ground |
| ___ | ___ | 3. Understands the importance of checking equipment daily |
| ___ | ___ | 4. Knows not to use any malfunctioning equipment |
| ___ | ___ | 5. Knows how to report to clinical engineering any equipment in need of repairs |

Radiation Safety

- | Yes | No | |
|-----|-----|--|
| ___ | ___ | 1. Able to locate lead aprons, thyroid shields, gloves, etc. |
| ___ | ___ | 2. Keeps doors closed to x-ray rooms during exposure |
| ___ | ___ | 3. Aware of need to keep distance between tubes and self whenever possible |
| ___ | ___ | 4. Practices patient shielding and collimation |
| ___ | ___ | 5. Practices self radiation protection |

General Safety

- | Yes | No | |
|-----|-----|-----------------------|
| ___ | ___ | 1. Fire alarm |
| ___ | ___ | 2. Emergency exits |
| ___ | ___ | 3. Fire extinguishers |
| ___ | ___ | 4. Crash carts |
| ___ | ___ | 5. Wall suction |
| ___ | ___ | 6. Wall oxygen |

Clinical Education (CLN 200)

Winter 2nd quarter Course Title: Applied Radiography II 240 clock hours Prerequisite: CLN 100

Applied Radiography II is the second in a series of eight clinical educations that will provide the student with the necessary experience and education needed in the practice of radiography. During this quarter, the student will move into a more independent clinical performing stage and will actually perform procedures. The student is evaluated for clinical competency by the instructor and/or staff RT. Students will continue the 12 – 8 rotation this quarter on one rotation. The rotation will be 3:00 p.m. - 9:00 p.m. on Tuesday and Thursday and 3:00 p.m. – 11:00 p.m. on Friday. This should provide opportunities for the student to observe a greater number of single and multiple trauma cases and how the staff handles heavy patient loads and stressful environments. Students should pay attention to alternate ways of positioning patients. The student will learn trauma protocols this quarter.

The student will continue to master the required competency exams under direct supervision and will perform under indirect supervision exams mastered in previous quarter. A staff technologist and/or instructor must assist students in all repeats.

Students will continue with one weekend rotation the quarter and should demonstrate the skills needed to take care of the sick and injured patient.

The clinical instructors in the general diagnostic areas, weekend rotation and the 3 p.m. – 9 p.m. / 3 p.m. – 11 p.m. rotation, will evaluate students this quarter.

COURSE OBJECTIVES

At the end of the second quarter, the student will be able to:

1. Identify certain terms pertaining to competency objectives (attached)
2. Keep a clinical experience log
3. Obtain a basic understanding of clinical competency evaluations (attached)
4. Learn the criteria necessary to pass a competency test (attached)
5. Be proficient in performing 10 exams of choice from Categories I & II (attached)
6. Perform and/or assist with each radiographic exam assigned to that room. Level of supervision – direct.
7. Perform independently in areas of successful completion of competency
8. Be able to:
 - a. Evaluate each requisition
 - b. Demonstrate proper physical facilities readiness
 - c. Demonstrate proper patient/technologist relationship
 - d. Demonstrate correct positioning skills
 - e. Manipulate equipment effectively
 - f. Show evidence of radiation protection
 - g. Deal effectively with patients who are sick and injured
 - h. Work around life support without disrupting their function. (i.e., oxygen, IV lines, etc.)
9. Identify trauma protocols (attached)
10. Demonstrate adaptation to heavy workload in a stressful environment

COMPETENCY REQUIREMENTS

1. Student must be evaluated on ten (10) clinical competency exams from categories I & II. Category I – chest, abdomen. Category II – upper and lower extremities (refer to page 11)
2. Must perform at a minimum level of 75%
3. Routine projections of all exams must be performed
4. No exams are to be done unless direct supervision of a staff technologist or instructor. Staff or instructor must assist with all repeats.
5. All exams must be checked by staff technologist or instructor
6. The exams listed on the computer must be mastered prior to graduation. (Must complete all the mandatory and electives and recomplete 80% of mandatory and elective comps.)

ATTENDANCE

1. All make-up time is to be made up at the discretion of the clinical coordinator and/or PD
2. If sick, the student is required to call in 30 minutes before the hour they are scheduled to report to their clinical assignment (see sick policy in handbook)
3. Punctuality is expected and enforced
4. All vacation or excused absences must be approved in advance

GRADE DETERMINATION

I. Clinicals

- | | | | |
|----|--|-----|------------------|
| 1. | Clinical instructors' evaluations | 60% | of _____ = _____ |
| 2. | Competencies
10 required from Categories I & II
10 points each | 25% | of _____ = _____ |
| 3. | Daily sheets complete | 5% | of _____ = _____ |
| | Minor gaps | 4% | |
| | Major gaps | 3% | |
| | Not done | 0% | |
| 4. | Attendance | | |
| | No tardies | 10% | of _____ = _____ |
| | Tardies in excess of 2 | -2 | |
| | Sick in excess of 2 | -2 | |
| | (Consecutive days count as one incident) | | |

Final Clinical Grade = _____

GRADING

A = 93 – 100 B = 83 – 92 C = 75 – 80 F = Below 75

**DCH Regional Medical Center
School of Radiologic Technology**

Trauma Bay Protocol Objectives

Student _____

Clinical Site _____

Evaluator (signature) _____

Date _____

Get a 3 – 11 technologist to initial each of the following:

I. Has read the ED Radiology protocols and understands:

- _____ Trauma bay protocol
- _____ Sterile field in trauma bay
- _____ Appropriate dress for this area

II. Understands the protocol for the three types of alerts:

- _____ Trauma
- _____ Cardiac shock
- _____ Stroke

III. Able to list the various hospital personnel who participates in trauma calls. List the personnel and departments below.

Clinical Education (CLN 300)

Spring 3rd quarter

Course Title: Applied Radiography III 240 clock hours

Prerequisite: CLN 200

Applied Radiography III is the third in a series of eight clinical educations that will provide the student with the necessary experience and education needed in the actual practice of radiography. Students continue to rotate through the designated clinical areas and their weekend clinical rotation. By this time, the student should have gained some self-confidence in areas covered in class and should demonstrate good judgment and accurate positioning skills when working in a stressful environment.

The student will continue to master the required competency exams under direct supervision and will perform under indirect supervision exams mastered in previous quarter. A staff technologist and/or instructor must assist students in all repeats.

The clinical instructors in the general diagnostic areas, weekend rotation and the 12 p.m. – 8 p.m. rotation will evaluate students.

COURSE OBJECTIVES

At the end of the third quarter, the student will be able to:

1. Continue developing professional conduct skills and practice professionalism during all phases of the training.
2. Continue to learn the art of critiquing films.
3. Work toward completion of the clinical competency objectives from category III and others not previously comped in Categories I & II. **20 Total required.**
4. Learn the purpose of the stock medication box and become familiar with its drugs and their actions. (class activity)
5. Work toward gaining self-confidence in performing exams.
6. Demonstrate ability to perform in stressful situations.

COMPETENCY REQUIREMENTS

1. Student must be evaluated on ten (10) clinical competency exams from categories I, II and III. Category I – chest, abdomen. Category II – upper and lower extremities. Category III – axial skeleton. Overall total of 20.
2. Must perform at a minimum level of 75%
3. Routine projections of all exams must be performed
4. No exams are to be done unless under direct supervision of a staff technologist or instructor. Staff or instructor must assist with all repeats.
5. All exams must be checked by staff technologist or instructor
6. The exams listed on the computer must be mastered prior to graduation. (Must comp all the mandatory and electives and re-comp 80% of mandatory and elective comps.)

ATTENDANCE

1. All make-up time is to be made up at the discretion of the clinical coordinator and/or PD
2. If sick, the student is required to call in 30 minutes before the hour they are scheduled to report to their clinical assignment (see sick policy in handbook)
3. Punctuality is expected and enforced
4. All vacation or excused absences must be approved in advance

GRADE DETERMINATION

I. Clinicals

- | | | | | |
|----|---|-----|----------|---------|
| 1. | Clinical instructors' evaluations | 60% | of _____ | = _____ |
| 2. | Competencies
10 required from Categories I, II & III
10 points each | 25% | of _____ | = _____ |

3. Daily sheets complete 5% of _____ = _____
Minor gaps 4%
Major gaps 3%
Not done 0%

4. Attendance
No tardies 10% of _____ = _____
Tardies in excess of 2 -2
Sick in excess of 2 -2
(Consecutive days count as one incident)

Final Clinical Grade = _____

GRADING

A = 93 – 100 B = 83 – 92 C = 75 – 80 F = Below 75

Clinical Education (CLN 400)

Summer 4th quarter Course Title: Applied Radiography IV 240 clock hours Prerequisite: CLN 300

Applied Radiography IV is the fourth in a series of eight clinical educations that will provide the student with the necessary experience and education needed in the actual practice of radiography. This quarter the student will concentrate on pediatric exams. The student should take advantage of the larger number of pediatric exams available on the 12 – 8 and 3 – 11 shift. In addition, the student should take a more active role in trauma cases. Students should continue working on accuracy in a busy, stressful environment. The 2 ½ evening shifts and the weekend rotations should provide the student with ample opportunity to accomplish these objectives.

Students will rotate through clinical assignments and continue to complete competency exams. Competency exams will be completed under direct supervision of an RT. The student will perform under indirect supervision, exams mastered in previous quarters. A staff technologist and/or instructor must assist students in all repeats.

Clinical instructors in the general diagnostic areas, weekend rotation and the 12 p.m. – 8 p.m. shift will evaluate the students.

COURSE OBJECTIVES

At the end of the fourth quarter, the student will be able to:

1. Become proficient in dealing with and radiographing pediatric patients. Two of the required comps this quarter must be pediatric patients, one of these must be a chest exam. The student should use the pediatric competency sheet (attached). Students should become aware that the largest number of pediatric exams are ordered after 5:00 p.m. and should take advantage of this on the evening shift rotations.
2. Demonstrate the ability to work in a busy and stressful environment. (evaluation)
3. Demonstrate the self-confidence to actively participate in trauma cases. (evaluation)
4. Understand and become proficient in venopuncture (in-service by Radiology RN)
5. Perform IV contrast injections with supervision following DCH protocol. (clinical)
6. The student will understand the importance of checking lab values (BUN & Creatinine) before injection of contrast media. (attached) **Will not be accepted after August 1 or the 1st class day after August 1st.**

References: Radiology Department Protocol Book

COMPETENCY REQUIREMENTS

1. Student must be evaluated on ten (10) clinical competency exams from categories I, II, III & IV. Category I – chest, abdomen. Category II – upper and lower extremities. Category III – axial skeleton. Category IV – contrast studies. Overall total of 32.
2. Must perform at a minimum level of 75%
3. Routine projections of all exams must be performed
4. No exams are to be done unless under direct supervision of a staff technologist or instructor. Staff or instructor must assist with all repeats.
5. All exams must be checked by staff technologist or instructor
6. The exams listed on the computer must be mastered prior to graduation. (Must comp all the mandatory and electives and re-comp 80% of mandatory and elective comps.)

ATTENDANCE

1. All make-up time is to be made up at the discretion of the clinical coordinator and/or PD
2. If sick, the student is required to call in 30 minutes before the hour they are scheduled to report to their clinical assignment (see sick policy in handbook)
3. Punctuality is expected and enforced
4. All vacation or excused absences must be approved in advance

GRADE DETERMINATION

I. Clinicals

- 1. Clinical instructors' evaluations 60% of _____ = _____
- 2. Clinical objectives written 5% of _____ = _____
BUN & Creatinine
- 3. Competencies 20% of _____ = _____
30 required from Categories I, II, III & IV
- 4. Daily sheets complete 5% of _____ = _____
Minor gaps 4%
Major gaps 3%
Not done 0%
- 5. Attendance
No tardies 10% of _____ = _____
Tardies in excess of 2 -2
Sick in excess of 2 -2
(Consecutive days count as one incident)

Final Clinical Grade = _____

GRADING

A = 93 – 100 B = 83 – 92 C = 75 – 80 F = Below 75

BUN / Creatinine
CLN 174

Write a 2-page, typed report to include:

1. Normal values
2. Creatinine is a by-product of what
3. BUN is a by-product of what
4. An increase in BUN / Creatinine levels indicate what
5. In the Radiology department, when do BUN / Creatinine levels need to be checked
6. How to find values (2)
7. Importance of checking BUN / Creatinine levels

Reference: Internet
Internal Medicine books

Clinical Education (CLN 500)

Fall 5th quarter Course Title: Applied Radiography V 240 clock hours Prerequisite: CLN 400

Applied Radiography V is the fifth in a series of eight clinical educations that will provide the student with the necessary experience and education needed in the actual practice of radiography. At this point in the student's training, he/she should have acquired enough technical knowledge to perform accurately and efficiently in stressful situations. The student should be able to perform difficult exams and be able to perform exams on the uncooperative patient. He/she should be able to demonstrate flexibility in positioning according to patient condition. The students should work on speed and accuracy. The student should work on proficiency with equipment found in the trauma bay. Awareness of the single control panel serving two tubes and availability of techniques should be a primary focus. The student should realize the need for speed without losing accuracy in emergency situations. The trauma bay will be an excellent place to perfect these skills this quarter. The weekend rotation and the two 12 – 8 p.m. rotations should afford the student many opportunities.

The student will continue to complete competency exams under the direct supervision of an RT. The student will perform under indirect supervision exams mastered in previous quarters. Students will begin to re-comp exams. The area of concentration this quarter will be surgery and C-Arm procedures. The student will begin rotation through specialty areas with one eight-hour rotation in the Cancer Treatment Center.

Clinical instructors in the general diagnostic areas, weekend rotation and the 12 p.m. – 8 p.m. shift will evaluate the students.

COURSE OBJECTIVES

At the end of the fifth quarter, the student will be able to:

1. Continue work toward completion of the clinical competency objectives (20 comps or recomps required – total of 50).
2. Become proficient in surgery and C-Arm procedures (C-Arm in-service)
3. Start specialty rotation this quarter and each student will rotate one Friday in Radiation Therapy. Objective sheet is to be completed, will be emailed to you.
4. Demonstrate the ability to perform exams under difficult and stressful situations.
5. Be able to perform intricate exams.
6. Demonstrate his/her ability to perform exams on difficult or uncooperative patients.
7. Have a better understanding of swallowing disorders. (objective attached – due Nov 1)
8. Be able to adapt positioning skills to accommodate patients not able to cooperate in a routine manner.
9. Demonstrate the need for speed and accuracy in emergency situations.

ATTENDANCE

1. All make-up time is to be made up at the discretion of the clinical coordinator and/or PD
2. If sick, the student is required to call in 30 minutes before the hour they are scheduled to report to their clinical assignment (see sick policy in handbook)
3. Punctuality is expected and enforced
4. All vacation or excused absences must be approved in advance

GRADE DETERMINATION

I. Clinicals

- | | | | |
|----|---|-----|------------------|
| 1. | Clinical instructors' evaluations | 40% | of _____ = _____ |
| 2. | Competencies
(total of 50 comps & recomps) | 40% | of _____ = _____ |
| 3. | Clinical objectives written
Swallowing disorders | 5% | of _____ = _____ |

4. Daily sheets complete 5% of _____ = _____
Minor gaps 4%
Major gaps 3%
Not done 0%

5. Attendance
No tardies 10% of _____ = _____
Tardies in excess of 2 -2
Sick in excess of 2 -2
(Consecutive days count as one incident)

Final Clinical Grade = _____

GRADING

A = 93 – 100 B = 83 – 92 C = 75 – 80 F = Below 75

Swallowing Disorders

5 points each

1. Define dysphagia:

2. Dysphagia is caused by _____

or _____

3. The precaution to watch for in patients who have dysphagia is

4. An NG tube was inserted into John's stomach because he was unable to

5. A video was ordered on John even though his swallowing improved. Why?

6. John choked on what foods?

7. In Stage 1, a swallowing disorder occurs when

8. In Stage 2, a swallowing disorder occurs when

9. In Stage 3, a swallowing disorder occurs when

10. List 5 symptoms of swallowing disorders

1. _____
2. _____
3. _____
4. _____
5. _____

11. The most common disagreement families have with staff if their family member has swallowing disorders is

12. What amount of food and liquid should a patient have at one time?

13. Best positioning for swallowing is _____ at a right angle

14. To help move food through the throat, the patient can try _____ and _____
15. Why should the environment be quiet when these patients eat?

16. A video can show what three things?
1. _____
2. _____
3. _____
17. When should a speech pathologist order a FEES?

18. List three alternative means of feeding?
1. _____
2. _____
3. _____
19. A pureed food is the right consistency when

20. What is a "Katie drink"?

Clinical Education (CLN 600)

Winter 6th quarter Course Title: Applied Radiography VI 240 clock hours Prerequisite: CLN 500

Applied Radiography VI is the sixth in a series of eight clinical educations that will provide the student with the necessary experience and education needed in the actual practice of radiography. The student's should continue working on speed and accuracy.

Rotation will continue through specialty areas this quarter with a four-hour assignment in the Angiography lab. Students will continue to rotate through Computed Tomography.

The student will continue to work on completion of competencies and re-competencies not mastered in previous quarters.

Students will continue rotation on the 3 p.m. – 9 p.m. / 3 p.m. - 11 p.m. shift. Clinical instructors in the general diagnostic and weekend rotation will evaluate the students.

COURSE OBJECTIVES

At the end of the sixth quarter, the student will:

1. Continue to critique films
2. Continue to work toward completion of the clinical competency objectives (20 comps or re-comps – total of 66)
3. Demonstrate the need for speed and accuracy in emergency situations.
4. Continue to perform difficult exams and work with the difficult and uncooperative patient.
5. Second rotation through Computed Tomography.

ATTENDANCE

1. All make-up time is to be made up at the discretion of the clinical coordinator and/or PD
2. If sick, the student is required to call in 30 minutes before the hour they are scheduled to report to their clinical assignment (see sick policy in handbook)
3. Punctuality is expected and enforced
4. All vacation or excused absences must be approved in advance

GRADE DETERMINATION

I. Clinicals

1.	Clinical instructors' evaluations	60%	of _____ = _____
2.	Competencies 20 comps or re-comps required 5 points each	25%	of _____ = _____
3.	Daily sheets complete	5%	of _____ = _____
	Minor gaps	4%	
	Major gaps	3%	
	Not done	0%	
4.	Attendance		
	No tardies	10%	of _____ = _____
	Tardies in excess of 2	-2	
	Sick in excess of 2	-2	
	(Consecutive days count as one incident)		

Final Clinical Grade = _____

GRADING

A = 93 – 100 B = 83 – 92 C = 75 – 80 F = Below 75

Clinical Education (CLN 700)

Spring 7th quarter Course Title: Applied Radiography VII 240 clock hours Prerequisite: CLN 600

Applied Radiography VII is the seventh in a series of eight clinical educations that will provide the student with the necessary experience and education needed in the actual practice of radiography. The student's should be able to apply the technical knowledge and skills acquired in his/her training. At this point, the student should be able to perform more independently and should demonstrate the skills and self-confidence to function as a technologist.

Clinical rotation will continue on the 12 – 8 shift, weekend and through all areas of diagnostic radiology.

Students will continue to work on completion of required competencies. Competency exams will be performed under the direct supervision of an RT. Exams mastered in previous quarters can be performed under indirect supervision. A staff technologist or instructor must assist with all repeats. Rotation through specialty areas will continue with rotation through the Heart Catherization Lab.

This quarter, the student will be evaluated in diagnostic radiology, weekend and 12 – 8 rotation.

COURSE OBJECTIVES

At the end of the seventh quarter, the student will:

1. Continue to critique films
2. Continue to work toward completion of the clinical competency and recomp requirements.
3. Acquire expanded knowledge about the varied modalities in radiology by completing an objective sheet after a four-hour rotation through the Cath Lab. (objective sheet attached)
4. Demonstrate the skills and self-confidence necessary to function as an independent radiographer.
5. Take an active role in trauma cases.
6. Will expand knowledge of procedures performed in Endoscopy (worksheet attached) **Due May 5 – will not be accepted after this date.**

Reference: Endoscopy fact sheet and heart cath fact sheet, attached.

ATTENDANCE

1. All make-up time is to be made up at the discretion of the clinical coordinator and/or PD
2. If sick, the student is required to call in 30 minutes before the hour they are scheduled to report to their clinical assignment (see sick policy in handbook)
3. Punctuality is expected and enforced
4. All vacation or excused absences must be approved in advance

GRADE DETERMINATION

I. Clinicals

1.	Clinical instructors' evaluations	75%	of _____ = _____
2.	Clinical objectives written objectives – endoscopy procedures heart cath lab	10%	of _____ = _____
3.	Daily sheets complete	5%	of _____ = _____
	Minor gaps	4%	
	Major gaps	3%	
	Not done	0%	
4.	Attendance		
	No tardies	10%	of _____ = _____
	Tardies in excess of 2	-2	
	Sick in excess of 2	-2	

(Consecutive days count as one incident)

Final Clinical Grade = _____

GRADING

A = 93 – 100 B = 83 – 92 C = 75 – 80 F = Below 75

Orientation to Cath Lab

1. Why are both sides of the groin shaved before a heart cath?
2. The cath lab's schedule for the day is determined by what?
3. What is used to anesthetize the groin area of the patient?
4. What is atherosclerosis?
5. Why would the heart cath personnel ask the patient to cough during the procedure?
6. What is an introducer sheath?
7. What is an angioplasty?
8. Is surgery the only alternative for Coronary Artery Disease? Explain.
9. What is meant by CAGB?
10. From what two areas might the physician get a vein for heart bypass surgery?
11. What is the MAIN difference between angioplasty and a stent placement?
12. What material is used to make stents?
13. Compare the length of hospital stay for Coronary Bypass Surgery vs. a stent placement?
14. What pain reliever are post angioplasty and/or stent placement patients supposed to avoid?
15. What is meant by the term "restenosis"?

Endoscopy Procedures

1. What is gastrointestinal endoscopy?
2. Define cytology.
3. Define stricture.
4. Define dilatation.
5. List six risks involved in endoscopic treatment or exams
 - 1.
 - 2.
 - 3.
 - 4.
 - 5.
 - 6.
6. EGD is an exam that looks at the following structures:
7. EGD stands for _____
8. Esophageal dilatation involves doing what?
9. The therapy named _____ is done to inject medication to stop bleeding. Whereas, _____ involves using an electric current to control bleeding.
10. ERCP stands for _____
11. Briefly describe an ERCP procedure
12. Which sphincter would be involved in a sphincterotomy? _____
13. What would be used to remove CBD stones in endoscopy _____
14. The crushing of stones by laser is called _____

15. In a colonoscopy, what structure(s) is examined _____
16. A proctoscopy / sigmoidoscopy examines the _____ & _____
17. What is a polypectomy?
18. Laser therapy is used to stop _____
19. When a patient signs an endoscopy consent form, is he/she releasing his/her photographs to be published?

Clinical Education (CLN 800)

Summer 8th quarter Course Title: Applied Radiography VIII 240 clock hours Prerequisite: CLN 700

Applied Radiography VIII is the eighth in a series of eight clinical educations that will provide the student with the necessary clinical education needed in the actual practice of radiography. The student's will continue clinical rotations through all areas of the Radiology department and will continue to rotate through specialty areas. Students will have one eight-hour rotation in specialty areas. The student should use the clinical time to increase proficiency and independence in all areas of rotations. Students will continue to rotate in Computed Tomography.

Clinical competencies should still be worked on if not previously comped and recomped. Competency exams must still be performed under direct supervision of an RT. Exams mastered in previous quarters can be performed under indirect supervision. A staff RT or instructor must assist with all repeats. Clinical competency simulation will be done this quarter for exams not previously comped.

COURSE OBJECTIVES

1. Continue to work toward completion of the clinical competency objectives and recomps.
2. Turn in specialty area objectives for the following rotations: cardiac cath lab, cancer center, angiography and CT if not previously done.
3. For the student to master all areas of rotation in diagnostic radiology (final evaluations).
4. Demonstrate required knowledge of all skills needed in the area of radiographing patients, including the severely sick and injured.
5. For the student to master the self-confidence necessary to function as an independent radiographer after graduation.
6. For the student to perform exams independently and make correct decisions using good judgment and discretion while taking charge of more difficult situations.

ATTENDANCE

1. All make-up time is to be made up at the discretion of the clinical coordinator and/or PD
2. If sick, the student is required to call in 30 minutes before the hour they are scheduled to report to their clinical assignment (see sick policy in handbook)
3. Punctuality is expected and enforced
4. All vacation or excused absences must be approved in advance

GRADE DETERMINATION

I. Clinicals

1.	Professional performance evaluation	85%	of _____	= _____
2.	Daily sheets complete	5%	of _____	= _____
	Minor gaps	4%		
	Major gaps	3%		
	Not done	0%		
3.	Attendance			
	No tardies	10%	of _____	= _____
	Tardies in excess of 2	-2		
	Sick in excess of 2	-2		
	(Consecutive days count as one incident)			

Final Clinical Grade = _____

GRADING

A = 93 – 100 B = 83 – 92 C = 75 – 80 F = Below 75

CLINICAL COMPETENCY CATEGORIES AND PROCEDURES

Competency in a category of radiographic procedures is obtained when the student satisfactorily performs the mandatory and elective procedures for that category.

CHEST

The student must satisfactorily complete competencies in this category.

Mandatory:

Chest, routine	Ribs
Chest, below age 6	Sternum
Chest, wheelchair or stretcher	Chest, decubitus

UPPER EXTREMITY

The student must satisfactorily complete competencies in this category.

Mandatory:

Hand	Scapula
Finger	AC Joints
Thumb	Wrist
Forearm	Elbow
Humerus	Shoulder
Clavicle	
Trauma shoulder (Y view or transthoracic)	
Trauma upper extremity (non-shoulder)	

LOWER EXTREMITY

The student must satisfactorily complete competencies in this category.

Mandatory:

Foot	OS Calcis
Toe	Ankle
Leg	Knee
Patella	Femur
Trauma lower extremity	Extremity, below age 6

VERTEBRAL COLUMN AND PELVIS

The student must satisfactorily complete competencies in this category.

Mandatory:

Cervical spine	Sacrum
Trauma Cross table C-spine	Coccyx
Thoracic spine	S.I. Joints
Lumbar spine	Scoliosis series
Pelvis	Hip
Trauma Hip, cross table	

HEAD AND NECK

The student must satisfactorily complete competencies in this category.

Mandatory:

Skull	Larynx
Facial bones	Mandible
Sinuses	Nasal bones
Orbits, foreign body, fracture or MRI screening	

ABDOMEN AND GASTROINTESTINAL TRACT

The student must satisfactorily complete competencies in this category.

Mandatory:

Abdomen, supine (KUB)	Abdomen, decubitus
Abdomen	Acute Abdomen series
Gallbladder, oral	Esophagus
Upper GI	GI / AC
Barium enema	BE with Air
SBS	Video BA Swallow

GENITOURINARY

The student must satisfactorily complete competencies in this category.

Mandatory:

Cystogram, voiding	Cholangiogram (T-tube)
IVP	IVN

MOBILE AND SURGICAL PROCEDURES

The student must satisfactorily complete competencies in this category.

Mandatory:

Mobile chest	Operative Cholangiogram
Mobile Abdomen	Retrograde Urography
Mobile orthopedics	C-Arm Hip
C-Arm ERCP	C-Arm any
C-Arm Groshung Catheter	

MISCELLANEOUS PROCEDURES

The student must satisfactorily complete competencies in this category.

Mandatory:

Myelogram	Shoulder Arthrogram
Lumbar Puncture	

GENERAL PATIENT CARE PROCEDURES

The student must satisfactorily complete competencies in this category.

Mandatory:

CPR
Vital signs
Venopuncture
O² administration
Sterile / Aseptic Technique
Transfer of patient
Care of patient medical equipment

MOBILE & SURGICAL RADIOGRAPHY

Students will be assigned to perform mobile and surgical radiographic procedures (portables). Mobile and surgical procedures **WILL ALWAYS** be performed under the **direct supervision of a qualified technologist.** When performing these procedures, the student must:

1. Utilize rules of body mechanics
2. Use proper radiation safety
 - a. provide protection for patients and others
 - b. utilize distance as protection for the radiographer
3. Choose exposure factors appropriate for the examination and patient measurement
4. Follow proper safety rules to prevent electrical hazards
5. Follow established procedures to prevent the spread of infection and disease
6. Operate all equipment efficiently and safely
7. Return all mobile equipment to its proper storage site and ensure proper re-charging

CLINICAL COMPETENCY SCHEDULE

The number of competencies to be performed each quarter is as follows:

Quarter	Minimum Number of Required Competencies
1	0
2	10
3	10
4	10
	*30 total
5	20 comps / recomps
6	20 comps / recomps
7	
8	
Total	100% of comps (total of 85) 80% of recomps (total of 59)

Although the minimum number of required competencies each quarter varies, students are encouraged to complete as many as they are qualified to perform to ensure that the total number of required competencies are achieved by the end of the quarters. The competencies performed may be from any category in which the student has successfully completed the laboratory evaluation.

CRITERIA FOR CLINICAL COMPETENCY

Clinical competency is based upon clinical education objectives established for the following areas:

- I. Patient Management
 - a. Physical Facilities Readiness
 - b. Evaluation of Requisition
 - c. Patient Care
- II. Equipment Manipulation and Technical Adjustments
- III. Positioning Skills
- IV. Radiation Protection
- V. Injectable Contrast Media and Procedures
- VI. Image Evaluation
 - a. General
 - b. Alignment
 - c. Radiographic Exposure Technique, Film Identification
- VII. Professionalism

CLINICAL EDUCATION PERFORMANCE OBJECTIVES

In order for the student to perform clinically at an acceptable degree of proficiency, he/she must be able to perform each of the following items.

I. Patient Management

A. Physical Facilities Readiness:

The student will:

1. Know the location of linen, bedpans, emesis basins, and emergency drugs (crash carts) in order to secure them when needed.
2. Maintain a clean and organized radiographic room by:
 - a. folding and replacing linen supplies
 - b. cleaning the radiographic table as needed
 - c. dusting room and equipment at appropriate intervals
 - d. checking daily:
 - supply of lead markers
 - lead aprons and gloves, which may be needed
 - positioning aids (sponges, restraints, etc.)
 - presence of proper size and type of needles and syringes
3. Prepare the radiographic room for the procedure before the patient enters the room
4. Assemble the necessary equipment required to perform the radiographic exam
5. Check contrast material and emergency drugs for quantity and possible chemical deterioration (**check expiration dates of all drugs**)
6. Fill syringes with contrast material using sterile technique when appropriate

7. If the procedure is a fluoroscopic examination, prepare the patient and equipment before the radiologist enters the room
8. Select the proper film size and type, correctly reload film holder, if needed

B. Evaluation of the Requisition:

The student will:

1. Correctly identify the patient using two patient identifiers
2. Determine the patient's mode of transportation
3. Follow instructions as outlined by the radiographic requisition
4. Based on the requisition, the patient's chart or verbal communication, determine the:
 - a. patient's name (observe all HIPPA policies)
 - b. appropriate radiographic procedure
 - c. special considerations if indicated
 - d. possible contraindications
 - e. information affecting how the patient is to be handled or technical factors to be used
 - f. equipment to be used
 - g. completeness of information
 - h. prior preparation of patient as needed
 - i. pregnancy status of patient if appropriate
5. Discuss with a supervisor; incomplete, confusing or unclear requisitions or patient information
6. Consider the need for alternate radiographic positioning to accomplish the examination and offer the least discomfort to the patient
7. Determine the patient positions and projections of the area of interest in relation to the patient's condition
8. Correctly identify the part or side of the patient with "R" or "L" lead marker properly placed
9. Record the radiographic exam including any pertinent comments about the exam or the patient's condition
10. Record any equipment problems in the proper logbook

C. Patient Care:

The student will:

1. Respect each patient's privacy and concerns
2. Treat each patient with dignity and respect

3. Correctly identify the patient using two patient identifiers for whom the radiographic procedure is requested
4. Transport the patient to and from radiology without injury to the patient or yourself
5. Explain the radiographic exam to the patient or a family member
6. Inform the patient of what will happen during the radiographic procedure
7. Reassure the patient and answer any questions
8. Draw implications from the patient information to allow the radiographic exam to be conducted as efficiently as possible
9. Alert the radiologist to possible contraindications to the requested radiographic exam such as:
 - possible radiation exposure to a fetus
 - recent duplication of the exam
 - effectiveness of patient preparation for the examination
 - signs of distress, adverse or emergency reactions
10. Transport the patient on a stretcher or wheelchair into the radiographic room; position the vehicle next to the examination table
11. Assist the patient safely from the transportation vehicle to the radiographic table
12. Use care in moving patients to avoid harming, causing pain or needless discomfort
13. Allow the patient to be as comfortable as possible
14. Manipulate oxygen supply, catheters or chest tubes with care to avoid disruption of proper function
15. Apply immobilization devices to prevent patient movement but not interfere with respiration and circulation
16. Give appropriate instructions to the patient per part/projection performed
17. Provide appropriate radiation shielding for the gonads based on the position of the patient and the part/projection required
18. Observe the patient throughout the radiographic procedure and be alert to any signs of pain, emergency, adverse reactions to the procedure or contrast materials. **Never leave babies or small infants alone AT ANY TIME.**
19. Observe if the patient is having an adverse reaction and if so, react appropriately
20. Make sure any repeat exposures are for medical diagnostic purposes and done only in the presence of a qualified technologist
21. Assist the patient safely from the radiographic table to the transportation vehicle

22. Assist as much as possible with patients who must wait for long periods of time (talk with them, check their needs, etc.)

II. Equipment Manipulation and Technical Adjustments

The student will:

1. Prepare the radiographic exposure room before the patient enters
2. Using a technique chart as a guide, determine and select the appropriate minimal exposure factors, which are compatible with the diagnostic quality, desired, if not using AEC
3. Carefully adjust the exposure factors for special considerations, i.e. patient's size, medical condition, age, sex or muscularity, if not using AEC
4. Using arithmetic calculations, adjust the technique to compensate for changes in the routine exposure factors, i.e. distance, grid ratio, film type, patient movement, etc.
5. Position the radiographic tube with the primary beam entering the area of interest at the appropriate angle to project the image required
6. Always use care when moving the radiographic tube in the presence of the patient or anyone else in the room.
7. Position the radiographic tube with the proper source-to-image (SID) distance.
8. Position the image receptor in bucky or cassette holder and position the central ray or body part.
9. Operate the collimator controls to expose only the area of interest.
10. Correctly use the rotor and exposure switches on the radiographic control panel.
11. Note any signs of equipment malfunction and report them immediately.
12. Transport the image receptor to the darkroom or computer for processing as applicable.
13. Reload the image receptor with the correct type of film or erase the imaging plate as applicable.
14. Make sure any repeats required are for medical diagnosis.
15. If the procedure is a portable examination:
 - a. safely transport the portable unit from the radiology department to the patient's bedside or operating room
 - b. position the portable unit accurately for the requested procedure
 - c. record the examination in the appropriate log

III. Positioning Skills

The student will:

1. Follow steps outlined in sections I and II.
2. Select the appropriate external reference points to position the patient for the specific examination according to the area of interest.
3. Account for body habitus in relating external reference structures to internal structures.
4. Position the body part correctly to provide images necessary for diagnosis.
5. Select and apply immobilization devices to prevent patient motion but do not interfere with breathing or circulation.
6. Mark or define anatomical reference points to position the body part with proper rotation and angulation.
7. In positioning the patient, make note of location of suspected fractures, unhealed fractures, or presence of foreign bodies and handle the patient accordingly.
8. If necessary, select alternative positioning to obtain the requested projections of the area of interest.
9. Select the proper size and type of film based on the size of the patient, area of interest, use of magnification technique and number of projections to appear on the film.
10. Position the image receptor in the bucky or cassette holder.
11. Position the patient or body part in the correct relationship to the film.
12. When using the bucky, center the body part to the midline of the table.
13. Place the long axis of the body part with the long axis of the image receptor.
14. With upright cassette holders, adjust the height of the holder to coincide with the body part to be imaged.
15. Position the x-ray tube with primary beam entering the area of interest at the correct angle to project the image needed,
16. Using lead markers (R, L, UP, etc.) identify the patient part, position and time according to department procedures.
17. Determine the position of the gonads and provide appropriate radiation shielding based on the position of the patient and the area being radiographed.
18. Instruct the patient appropriately to accomplish the exam with minimum motion and discomfort to the patient.
19. Ensure that all repeats required are for medical diagnostic purposes only.

IV. Radiation Protection:

The student will:

1. Consider the effects of ionizing radiation on human tissue and conform to established safety standards
 - a. wear protective lead garments if in the room during an exposure
 - b. make exposures from behind the lead protective barrier
 - c. close all doors to the room before making any exposures
 - d. use gonadal shielding for the patient's protection
 - e. use correct collimation for protection of the patient and others
2. Supply protective shielding to any persons who will be in the room during exposures.
3. Follow instructions when selecting and establishing exposure factors.
4. Determine appropriate shielding for radiation sensitive tissue, considering direction of the central ray and the proximity of the area of interest to the sensitive tissue.
5. Always wear your radiation-monitoring device placed correctly on your body.
6. Turn in the radiation-monitoring device at the proper intervals, keeping them up-to-date.
7. Consistently receive a safe reading on the monthly radiation dosage report.
8. Determine when an accidental exposure radiation exposure may have occurred to you, the patient or other personnel.
9. Report any excessive exposures immediately to the clinical coordinator or staff.
10. Determine possible causes for unusually high radiation readings on personal monitoring device.
11. Know how to read the monthly radiation dosage report to determine your exposure history.
12. Make sure any repeats required are for medical diagnostic purposes only.

V. Injectable Contrast Media and Procedures:

The student will:

1. Check contrast material and emergency drugs for chemical deterioration. In performing radiography when sterile, surgical or invasive procedures are involved, use knowledge of sterile conditions and procedures to achieve or maintain the sterile integrity of materials, area or parts of the patient's body.
2. Using sterile technique, fill syringes with contrast material needed for the radiographic procedure. **Students are not allowed to inject medications or contrast media without an RN or RT present.**

3. Apply various types of tourniquets, sterile dressings or other devices used in connection with the procedure.
4. Ensure presence of supplies needed for the procedure, i.e. contrast material, syringes, bandages, emergency drugs and supplies, etc.
5. Observe the patient throughout the procedure and be alert for any signs of adverse reactions to the procedure or contrast material.

VI. Image Evaluation:

A. General

The student will:

1. Perform a review of images for technical and diagnostic quality.
2. Properly use all equipment required to accomplish the review.
3. Demonstrate the proper steps in reviewing the images produced:
 - a. relate the orders for the procedures to projections of the area of interest and the patient's condition
 - b. consider the need for change from the standard positions to accomplish the examination and offer the least amount of discomfort to the patient
 - c. provide a technical quality review of the images produced
4. Assess for each image / radiograph / procedure whether:
 - a. correct patient view and full area of interest is demonstrated
 - b. unnecessarily large area of the patient is visible (irradiated)
 - c. proper shielding of the patient is visible
 - d. artifacts, blurring, or distortion of the image is present
 - e. adequate detail and definition are present in the image
 - f. adequate density and contrast are present to provide the diagnostic quality required for the examination
 - g. the anatomy and area of interest are demonstrated satisfactorily for diagnostic purposes, based on the requested exam and review of the radiographs
 - h. problems were caused by the radiographer's performance (improper positioning, incorrect exposure factors, etc.) or if malfunctioning equipment is responsible
 - i. anatomical structures needed are shown in the image and their relationships are demonstrated appropriately
 - j. proper collimation has been used to prevent exposing areas of the patient unnecessary
 - k. standards for diagnostic quality have been met
 - l. any views have been omitted

5. When reviewing the images for technical quality:
 - a. consider what the radiographer should do to improve the quality of the radiograph / image
 - b. decide if repeats or additional views would be helpful based on the patient's condition and/or history
 - c. what alternative patient or x-ray tube positioning may be used to obtain views for which routine positioning is not possible

B. Alignment

The student will review each radiograph to determine:

1. Positioning of the body part radiographed is in the correct relationship to the film
2. Placement of the long axis of the body part coincides with the long axis of the film
3. Positioning of the x-ray tube is such that the primary beam enters the area of interest at the proper angle to project the image needed
4. Centering of the x-ray tube to the film is correct
5. Proper focal-film distance was used

C. Radiographic Exposure Technique

The student will review each radiograph to assess whether:

1. The radiograph is overexposed or underexposed
2. The proper contrast and density of the image is present
3. Instructions for establishing exposure factors were followed accurately
4. Proper collimation to the anatomical part to be demonstrated was used in each image
5. There is evidence of equipment malfunction

D. Film Identification

The student will review each radiograph to determine:

1. The patient's information and correct date are visible and readable
2. Lead markers were used properly and are visible
3. Placement of lead markers is appropriate relative to the body part being radiographed
4. Any other information relative to the exam is included, i.e. portable, upright, etc.

VII. Professionalism:

The student should exhibit the following traits and characteristics. Those that are most often expected from the technologists include:

Compassion
Motivation
Self-discipline

Cooperation
Dependability
Loyalty

Interest
Poise
Promptness

These traits and characteristics have certain responses that can indicate their presence in the student technologist. The identification and development of these traits is/are part of the clinical education component.

COMPASSION

To demonstrate this trait, **the student will:**

1. Assist patients, allowing them as much comfort as possible
2. Take care not to move the patient in any way that might be harmful, painful or needlessly uncomfortable
3. Not leave those patients who might fall, alone on the radiographic table
4. Assist patients who wait for long periods of time in the radiology department (talking with them, checking on their needs, etc.)

INTEREST and PREPARATION

To demonstrate this trait, **the student will:**

1. Be able to perform the radiographic procedures ordered
2. Possess and use items required to perform the procedures, i.e. lead markers, pen/pencil, radiation monitoring devices, etc.
3. Have the motivation to learn and use alternative methods to perform the procedures

COOPERATION

To demonstrate this trait, **the student will:**

1. Respect patients and personnel's privacy and dignity
2. Establish good rapport with other members of the health care team
3. Accept guidance, suggestions, and constructive criticism without overt resentment
4. Exhibit pleasant and helpful behavior with patients and personnel
5. Follow the rules and regulations of the radiology department and the medical facility

MOTIVATION

To demonstrate this trait, **the student will:**

1. Perform requested radiographic procedures without being asked or told to do so
2. Practice skills previously learned to become proficient in them
3. Ask for assistance in attempting new or complex procedures
4. Perform any tasks that are necessary for the efficient function of the radiology department

DEPENDABILITY

To demonstrate this trait, **the student will:**

1. Be prompt in:
 - a. arriving at the clinical site early enough to ready your assigned area
 - b. approaching radiographic assignments with energy and enthusiasm
 - c. returning from breaks and meals at the designated times
 - d. proceeding with assignments given and completing them within a reasonable amount of time
2. Perform your tasks as assigned by the clinical site or at the direction of the clinical instructor and/or clinical staff
3. Recognize and acknowledge limitations of knowledge and experience
4. Be honest and truthful
5. Show flexibility in schedules and breaks

POISE and SELF-DISCIPLINE

To demonstrate this trait, **the student will:**

1. Be pleasant to others even in adverse conditions
2. Maintain composure in all situations. Never confront clinical staff, especially in public. Disagreement and misunderstandings should be brought to the clinical coordinator or PD.
3. Exhibit adaptability in new or unusual situations
4. Follow the rules of the clinical site and medical facility
5. Exercise self-discipline in performing all aspects of your duties
6. Keep your mind on your responsibilities and follow them through until the job is completed
7. Accept criticism positively and benefit as a result

MATURITY and JUDGMENT

To demonstrate this trait, **the student will:**

1. Treat patients and others with respect and kindness
2. Be discreet when discussing patients. Do it where family and friends will not overhear.
3. Show the ability to be a responsible technologist that others can depend on

APPEARANCE

To demonstrate this trait, **the student will:**

1. Present a professional appearance at all times
2. Follow the guidelines of the program and department dress code
3. Practice good personal hygiene
4. Refrain from any tobacco use or eating in patient care areas. **Do this in designated areas only!!**

SUMMARY

Clinical Education is an essential portion of your training. Topics presented in the classroom must be put to practical use during the clinical sessions. It is important that you be prompt, courteous and aggressive in your clinical experiences. Do not be afraid to make mistakes. Just do not make the same mistake twice! Do not be afraid to ask questions. It is always better to ask questions when you are not sure about something. **Remember, it is your responsibility to make sure that all clinical evaluations are completed and returned to the PD on time.** Any time you have a problem, you should contact the clinical instructor or supervisor you are assigned to. You will have to work hard and study hard but you will be rewarded with a career that is very rewarding because you will be helping others.