FOOTHILL COLLEGE
RADIOLOGIC TECHNOLOGY PROGRAM

CLINICAL EDUCATION MANUAL

FIRST & SECOND YEAR

2019-2021

Note: Program requirements, as well as policies, are changed from time to time. New or revised requirements and/or policies become effective when this handbook is revised, and the additions and/or revisions supersede any previous requirement and/or policy in past use, whether in writing or in past practice.

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CLINICAL EDUCATION EVALUATION PROCESS

Clinical education is an essential part in the education of radiographers. It combines cognitive (classroom or acquired knowledge), psychomotor (clinical or motor skills), and affective (emotions, values, and attitude) aspects of the profession. All thee of these aspects must be evaluated in the clinical education facility.

Two evaluation processes will be used each quarter to evaluate students' clinical educational progress. These two evaluations will be combined at the end of the quarter to determine the clinical grade.

The first evaluation is the **Clinical Education Evaluation** and will evaluate the students' overall progress in the following ten categories:

- Radiation Protection
- Equipment
- Punctuality and Dependability
- Co-Worker, Hospital Relationships
- Job Performance
- Technical Factors
- Positioning
- Patient and Nursing Procedures
- Student Presentation
- Image Evaluation

The Clinical Education Evaluation will be developed by observation from the Clinical Instructor, the College Instructor, and the clinical staff. This will account for 60% of the students' final quarter grade.

The second evaluation is the Clinical Competency Evaluation. This is a detailed documentation of acquired competency of specific exams. For each quarter of the Program the student will be required to prove competency for a specified number and category of exams. The student must complete all required competencies for all quarters to successfully progress with the clinical education. The Clinical Competency Evaluations will account for 40% of the students' final quarter grade.

CLINICAL EDUCATION ORIENTATION GUIDELINES

At the beginning of each rotation (Fall, Winter and Summer Quarters) students will be given an orientation by the clinical instructor covering the following areas:

1. Tour of the hospital and imaging department
2. Emergency codes
3. Location of linen, medial supplies, fire extinguisher, emergency equipment, oxygen and suction machine.
4. Dress code
5. Procedure for illness and tardiness
6. Explanation of patient requisition and department workflow

During each eleven-week rotation the student will be given:

1. An image analysis session, one-hour per week by the college instructor
2. Room assignments with rotations through general radiography, fluoroscopy, and portables. Surgery rotations are encouraged after the first quarter.
3. A total of eight written observations of performance by a registered staff technologist or instructor
4. Opportunity to complete Clinical Competency Evaluations

FOOTHILL COLLEGE RADIOLOGIC TECHNOLOGY PROGRAM
Clinical Education Objectives

First Year
Fall, Winter, Spring, and Summer Quarters

Students will observe and participate in a wide variety of radiographic exams.

Objectives:

The student will complete the required competencies for the quarters listed below. The student must have had the didactic education prior to attempting the competency.

Fall Quarter:

Upon completion of fall quarter the student will demonstrate competency with the following radiographic procedures on patients age 18 and older:

AP abdomen
PA and Lateral Chest
One mandatory non-trauma extremity from Category 2 labeled 1st Quarter.

Winter Quarter:

Upon completion of spring quarter the student will demonstrate competency in **five** (5) exams from any category labeled 1st, 2nd, or 3rd Quarter on patients age 16 and older.

Spring Quarter

Upon completion of spring quarter the student will demonstrate competency in **seven** (7) exams from any category labeled 1st, 2nd, or 3rd Quarter on patients age 16 and older.

Summer Quarter

Begin pediatric competencies.

Upon completion of the summer quarter the student will demonstrate competency in **seven** (7) exams from any category labeled 1st, 2nd, 3rd or 4th Quarter on patients age 7 and older.

All the above procedures will include routine projections on an agile patient with average body habitus. The student will perform the above procedures as requested by the patient's physician in an efficient, safe, technically accurate, and professional manner.

During the student clinical assignment, the student will:

A. Demonstrate empathy for the patient and recognize their needs.
B. Appreciate the need for medical ethics.
C. Develop appropriate interpersonal relationships.
D. Recognize the need for adherence to medical legal principles.
E. Apply safety precautions in relationship to patient and others.

FOOTHILL COLLEGE RADIOLOGIC TECHNOLOGY PROGRAM
Clinical Education Objectives

Second Year Students
Fall, Winter, and Spring Quarters

Students will observe and participate in a wide variety of radiographic exams.
Objectives: The student will complete the required competencies for the quarters listed below.

Fall Quarter:

Upon completion of fall quarter the student will demonstrate competency in **twelve** (8) exams from any category labeled 1st, 2nd, 3rd or 4th quarter on patients age 7 and older.

Winter Quarter:

Upon completion of winter quarter the student will demonstrate competency in **nine** (9) competencies. The student will also demonstrate competency on **two** (2) elective competencies: Skull and Paranasal Sinuses. All non-pediatric competencies must be performed on patients age 7 and older.

Spring Quarter

Upon completion of spring quarter the student will demonstrate competency with **seven** (7) competencies. Three of the competencies must be performed during Spring Quarter, and not comped ahead in Winter Quarter. Competencies will be performed on patients' age 7 and older unless designated as a pediatric competency, patients age 6 and under.

The student must meet the following set of minimum standards as secondary objectives in the second year.

CT / Angiography / MRI

- Fall Quarter
  - The student will spend one week per modality in two of the following: CT, Angiography, MRI.
- Winter/Spring Quarter
  - The student will spend one week in the modality not observed in the Fall Quarter.

Elective

- Winter/Spring Quarter
  - The student will spend one week in an elective modality. The student may select from any of the following modalities: MRI, CT, Angiography or Mammography. Elective rotation options may be restricted by what is available at the clinical site.

Mammography: Optional. Student must have completed the Mammography Course at Foothill College before doing a mammography rotation.

Off-Hour Assignment: Evening and weekend shifts and will commence during the winter or spring quarter of the second year.

The student will meet the objectives of the following ten categories with a minimum percentage of 80%.

I. **Radiation Protection**

Given a requisition for a radiographic examination, the student will demonstrate accuracy in practicing radiation protection for the patient, personnel and self by:

A. Closing doors during procedures and exposures.
B. Shielding all patients.
C. Collimating at least to image receptor size and/or part size.
D. Protecting himself/herself and others from irradiation by wearing aprons, , gloves and dosimeter.
E. Keeping repeats to a minimum.
F. Considering pregnancy status; following department protocol.

II. **Equipment**

During a radiographic examination the student will be able to demonstrate knowledge, understanding and dexterity in the proper use of equipment to the satisfaction of evaluation guidelines. The following functions will be observed:

A. Competency and proficiency with equipment.
B. Safety precautions, including keeping room furnishings and accessories properly placed and safely positioned.
C. Effective manipulation of control panel.

III. **Punctuality and Dependability**

Upon assignment to a given clinical facility, the student will adhere to the following areas of importance in attendance, punctuality and dependability:

A. Punctuality in reporting to the room at the start of a shift; being in assigned room and ready for patient at least 5 minutes before start of shift.
B. Minimum loss of time due to absenteeism
C. Consideration of others by taking proper length of time for breaks according to department policy.
D. Properly notifying the department in case of absence or tardiness.
E. Communicating whereabouts appropriately.

IV. Co-Worker, Hospital Relationships

During the clinical assignment, the student will demonstrate positive relationships in dealing with co-workers, the public and other hospital staff. Areas of importance include:

A. Being tactful and courteous with staff and others.
B. Taking the initiative and helping other staff members
C. Working as a team with the technologist.
D. Accepting constructive criticism and conducting oneself in a professional manner.
E. Adhering to dress code.
F. Communicating effectively and following instructions
G. Contributing to a pleasant working environment.

V. Job Performance

During the clinical assignment the student's job performance will be observed and satisfactory ratings must be achieved in each of the following areas:

A. Marking all radiographs according to department standards.
B. Planning and organizing work efficiently - having foresight, making sure all supplies needed for exam are set up before exam begins.
C. Being alert and interested in what is happening in room and asking pertinent questions.
D. Reading and understanding the requisition and properly identifying the patient by checking name bands.
E. Maintaining a neat, clean, well-stocked room (i.e., changing pillow cases, cleaning table and chest unit frequently and stocking supplies in cabinets).
F. Communicating effectively.
G. Following verbal instructions with multiple steps.
H. Making effective use of free time.
I. Completing the exam in a reasonable amount of time.
J. Perseveres and follows through on exams – releases patient when procedure is completed – doesn't leave an exam in progress except with technologist's permission.
K. Judges new or changing situations and makes reasonable decisions.
L. Demonstrating proper ethical behavior

VI. Technical Factors

During radiographic procedures stated above, the student will be observed in the selection of proper technical factors for routine examinations of the average patient. This includes:

A. Setting the control panel accurately for an exposure, setting correct kV and mAs per technique chart, selecting correct tube and bucky and using optimal kV.
B. Understanding how various mA, kV, time and distance factors affect the radiographic image.
C. Being able to differentiate between phototiming and manual technique.
D. Checking control panel before exposure.
F. Identifying and correcting technical errors, i.e., grid lines, grid cut-off, under/over exposure, fog, double exposure, motion, and artifacts.
F. Being aware of different imaging systems requiring different techniques.

G. Being able to determine appropriateness of exposure based on exposure index (S-number, LgM, EI, etc.)

VII. Positioning

On all radiographic procedures stated above, the students will be able to demonstrate skills in positioning technique as observed by the clinical instructor. Positioning factors include:

A. Knowing department routines for exams stated in objectives.
B. Knowing specific centering for each part radiographed including angulation of the x-ray tube and body part.
C. Positioning the patient carefully and accurately; using proper immobilization.
D. Identifying basic anatomy and critiquing images.
E. Handling patients gently when positioning, using concise instructions, and watching patient during breathing instructions.

VIII. Patient Care and Nursing Procedures

During a radiographic study, the student will demonstrate knowledge and understanding of various nursing procedures and basic patient care. Areas of importance are:

A. Identifying patient properly and using his/her last name during procedure.
B. Communicating effectively with the patient.
C. Explaining exam to the patient.
D. Using a safe approach when transferring patients.
E. Knowing the location of the emergency tray, emergency drugs, suction machine and oxygen.
F. Proper handling of a patient with IV's and catheters.
G. Applying surgical and medical asepsis in drawing up syringes, working around a sterile field.
H. Completing the exam in a reasonable amount of time.

IX. Student Presentation

The student will follow the guidelines and objectives for the Student Clinical Presentations.

X. Image Evaluation

The student will evaluate his/her images and describe the required criteria for an acceptable radiograph. Areas of importance are:

A. Identifying optimum contrast and density
B. Identifying proper anatomy and centering
C. Identifying motion if present
D. Describing image receptor and part centering
E. Identifying proper patient positioning
F. Identifying collimation and shielding
G. Completing Image Analysis Quizzes with 72% or better in the 2nd year.

During the fall, winter, spring and summer clinical assignments the student will be observed on his/her performance in all areas stated in the objectives.

It is essential that the student have one observation sheet per week (minimum of 8 for the quarter). The eight observation forms should include at least (1) from the hospital instructor. No more than 25% can be filled out by second year students.

The final clinical education score will be computed by the college instructor using the evaluation key. This will count as 60% of the course grade. The other 40% will be the clinical competency evaluation. The following clinical grading scale reflects the point value that will determine the final course grade.

95-100	= A
87-94	= B
80-86	= C
Below 80	= D

Failure to achieve "C" performance in any one of the objective categories will be sufficient cause to put the student through a probationary period. After placement on probation the student must earn and maintain a "C" in all areas of clinical performance in order to continue and finish the Foothill College Radiologic Technology Program.

CLINICAL OBSERVATION SHEET

Student _____ Observed by (Print Name) _____ Date _____

Overall observation of student's performance associated to their level of education in the radiology program.

Exams Observed: _____

Radiation Protection
Satisfactory/Needs Improvement
□ □ Wears dosimeter properly
□ □ Closes doors
□ □ Shields appropriately and consistently
□ □ Collimates appropriately to part/IR size
□ □ Protects self and others
□ □ Considers pregnancy status
□ □ Generates minimal repeats /no unnecessary images

Explain any needs improvement or add additional comments:

Equipment
Satisfactory/Needs Improvement
□ □ Maneuvers equipment proficiently
□ □ Utilizes locks appropriately
□ □ Adapts to various types of equipment
□ □ Avoids safety hazards
□ □ Control panel set-up executed correctly
□ □ Uses immobilization devices appropriately

Explain any needs improvement or add additional comments:

Co-Worker/Hospital Relationships
Satisfactory/Needs Improvement
□ □ Exhibits tactful and courteous behavior
□ □ Demonstrates team approach
□ □ Accepts constructive criticism
□ □ Projects professionalism
□ □ Communicates effectively
□ □ Follows verbal instructions with multiple steps
□ □ Demonstrates proper ethical behavior

Explain any needs improvement or add additional comments:

Job Performance
Satisfactory/Needs Improvement
□ □ Demonstrates knowledge of department protocols
□ □ Performs accurate positioning
□ □ Minimal handling of affected area
□ □ Can use positioning aids properly
□ □ Performs positioning at an efficient pace
□ □ Can identify and correct positioning errors
□ □ Identifies radiographic anatomy

Explain any needs improvement or add additional comments:

Technical Factors

Satisfactory/Needs Improvement

Explain any needs improvement or add additional comments:

□ □ Sets control panel at the correct time
□ □ Sets accurate kV and mAs / AEC cells
□ □ Selects focal spot size when appropriate
□ □ Verifies selections prior to exposure
□ □ Evaluates patient technically
□ □ Can identify and correct technical errors
□ □ Utilizes exposure index
□ □ Evaluate factors that determine exposure accuracy
□ □ Verbalize technical factors prior to using AEC

Positioning

Satisfactory/Needs Improvement

Explain any needs improvement or add additional comments:

□ □ Organized and efficient work pattern
□ □ Follows through on exams
□ □ Demonstrates confidence
□ □ Appears alert and interested
□ □ Demonstrates understanding of orders / RIS
□ □ Uses good judgment / critical thinking skills
□ □ Marks all radiographs appropriately
□ □ Cleans and prepares room appropriately
□ □ Makes effective use of free time
□ □ Takes initiative to perform exams

Patient Care

Satisfactory/Needs Improvement

Explain any needs improvement or add additional comments:

□ □ Identifies patient properly
□ □ Explains exam
□ □ Gives concise instructions throughout exam
□ □ Gentle and offers emotional support
□ □ Interacts with patient throughout exam
□ □ Maintains patient privacy
□ □ Can effectively assists physician
□ □ Correctly handles patients with IV's, etc.
□ □ Completes exam in a reasonable amount of time
□ □ Maintains patient safety throughout entire exam

Student Signature / Date

Technologist Signature / Date

Student Name (Print)

Technologist Name (Print)

Comments:

Log Sheet

Name:_____

Observed/Assisted/Performed

*Optional

Exam	Patient MRN	O	A	P	Repeat Y/N	Tech Initals for Repeats	Date	Technique*	Exp Index*

FOOTHILL COLLEGE RADIOLOGIC TECHNOLOGY PROGRAM

EVALUATION KEY AND GRADING CRITERIA

The Evaluation Key and Grading Criteria are to be used by the evaluator when assessing students' clinical performance.

Included is the description of each scale from the following categories:

I. Radiation Protection
II. Equipment
III. Punctuality & Dependability
IV. Co-Worker, Hospital Relationships
V. Job Performance
VI. Technical Factors
VII. Positioning
VIII. Patient Care & Nursing Procedures
IX. Student Presentation
X. Image Evaluation

An expanded description of scale "A" is included to assist the evaluator when rating the student.

Forms to be used when evaluating students' clinical performance:

1. Evaluation Key & Grading Criteria
2. Clinical Observation Sheet
3. Clinical Evaluation
4. Clinical Education Objectives
5. Clinical Competency Objectives
6. Clinical Competency Evaluation

SCALE I RADIATION PROTECTION

A. Demonstrates exceptional ability in practicing radiation protection based upon the radiation protection objectives.

B. With few exceptions, demonstrates consistent ability in practicing radiation protection.

C. Demonstrates adequate ability in practicing radiation protection but needs to be reminded of the radiation protection guidelines.

D. Demonstrates limited ability and understanding in practicing radiation protection.

Note: If the student loses their dosimeter, their Radiation Protection grade is automatically lowered one grade.

DESCRIPTION OF SCALE A. RADIATION PROTECTION

If the student shows exceptional awareness and understanding of radiation protection, the student:

- always shields patients
- always closes doors while radiating.
- collimates to image receptor or part size
- protects him/herself and others form ionizing radiation by wearing a lead apron, gloves, and dosimeter.
- considers pregnancy status of a patient and follows department protocol.
- has minimal repeats

SCALE II. EQUIPMENT

A. With few exceptions, the student has the understanding and skill needed to work all equipment.

B. The student demonstrates an above average level of knowledge and understanding in equipment utilization.

C. The student shows a lack of retention in equipment utilization.

D. The student demonstrates unsafe working techniques and little or no skill in utilizing equipment.

DESCRIPTION OF SCALE A. EQUIPMENT

The student with few exceptions demonstrates exceptional understanding and utilization of all equipment by:

- maneuvering the equipment smoothly, i.e., utilizing all locks, doesn't forcibly move or bang equipment into place, recognizes the limitations and demonstrates the advantages of the equipment and uses equipment in the best manner possible.
- using proper auxiliary equipment, i.e., immobilization devices etc.
- correctly setting the control panel.
- insuring safety in the room for patient and personnel by being aware of all possible hazards (footstool, overhead x-ray tubes, spilled liquid, etc.).

SCALE III. PUNCTUALITY AND DEPENDABILITY

(See the Attendance and Punctuality Grading Criteria in the Student Handbook.)

A. The student demonstrates consistent awareness and exceptional dependability in punctuality and break privileges.

B. The student demonstrates consistent dependability in punctuality and break privileges. Has no more than two tardies or two occurrences. He/she properly notifies the hospital via departmental policy of illness and tardiness.

C. The student demonstrates an acceptable attendance and break record. Has no more than three tardies or three occurrences. He/she properly notifies the hospital via departmental policy of illness and tardiness.

D. The student demonstrates inconsistency in punctuality and length of break privileges. Does not have more than four tardies or four occurrences.

DESCRIPTION OF SCALE A. PUNCTUALITY AND DEPENDABILITY

A student demonstrates exceptional awareness and concern for proper punctuality and dependability by always:

- reporting to his/her room ready to work 5 minutes before the start of his/her assigned shift.
- taking only the time allotted for coffee and lunch breaks, and only when given permission by his/her technologist.
- notifying the department in the event of absence or tardiness.
- communicating whereabouts appropriately.

SCALE IV. CO-WORKER, HOSPITAL RELATIONSHIPS

A. The student is considerate of the needs of others, is enthusiastic, communicates well, takes the initiative to assist or perform exams and contributes to a pleasant working environment.

B. Most of the time the student is considerate of the needs of peers and staff, takes the initiative to assist or perform exams and is an asset to the working environment.

C. Generally the student is considerate of his/her interactions with others but has difficulty taking the initiative.

D. The student shows some insensitivity in interactions with people and does little to promote a good working environment. The student tends to stand back rather than participate in exams.

DESCRIPTION OF SCALE A. CO-WORKER, HOSPITAL RELATIONSHIPS

A student demonstrates exceptional ability in co-worker and hospital relationships by always:

- being tactful and courteous.
- accepting constructive criticism and conducting him/herself in a professional manner.
- being neat and clean, adhering to dress code.
- being eager to work and cooperate with other technologists and peers.
- demonstrating a team approach.
- wearing proper identification.
- communicating effectively.
- projecting professionalism.
- contributing to a pleasant working environment.
- is willing to help others and takes the initiative.
- demonstrating proper ethical behavior.

SCALE V. JOB PERFORMANCE

A. With few exceptions, the student is dependable in carrying out his/her job completely and thoroughly with pride in his/her work.

B. The student performs his/her job at an above average level.

C. The student has an average knowledge of his/her job and needs guidance in carrying out job specifics. Generally, the student needs assistance in completing exams effectively.

D. The student's quality of work is consistently below standards and needs constant supervision.

* **The student's grade will drop one grade level for each observation form less than the required eight.**

DESCRIPTION OF SCALE A. JOB PERFORMANCE

A student demonstrates exceptional ability in job performance by:

- utilizing critical thinking skills
- reading the requisition and properly identifying the patients by looking at their name bands or calling them clearly by name.
- being efficient and well-organized in carrying out all the specifics of a routine exam, i.e., knowing the routines, taking histories, marking all images accurately, IDing images correctly and having all supplies at hand in a clean, neatly stocked and well kept room.
- demonstrating the ability to retain previously learned material
- working well as a team with a co-worker.
- persevering and following through on all exams making sure all images are complete and in order and sees to it that the patient is properly cared for and/or released from the radiology department.
- showing alertness and interest in an exam by asking pertinent questions.
- communicating effectively.
- being dependable and reliable.
- following verbal instructions with multiple steps
- completing the exam in a reasonable amount of time
- making effective use of free time.
- having minimum of eight observation forms

Second Year Only

- Fulfills performance objectives for special clinical assignments, evenings, and weekends

SCALE VI. TECHNICAL FACTORS

A. The student possesses a knowledge and skill in x-ray technique.

B. The student demonstrates adequate ability in selecting and applying technical factors.

C. The student shows a lack of retention in some aspects of technical factors and technique application.

D. The student needs continual and direct supervision in most aspects of technical factors and their applications.

DESCRIPTION OF SCALE A. TECHNICAL FACTORS

The student demonstrates good technical knowledge and understanding of the image arrangements and their varying factors by:

- possessing the ability to correctly set the control panel for an exposure and use of the technique chart.
- being able to determine appropriateness of exposure based on exposure index (S-number, LgM, EI, etc.)
- being able to differentiate between phototiming and manual timing.
- correctly using and differentiating between mA, kV, time, and distance.
- being able to identify and correct technical errors such as over/under exposure, grid lines, grid cutoff, motion artifacts, fog and double exposures.
- being able to set the proper focal spot size
- accurately setting mAs and kV to compensate for pathology, motion, grids, etc.

SCALE VII. POSITIONING

A. With few exceptions, the student displays skillful and accurate knowledge in positioning.

B. The student possesses an above average level of knowledge and dexterity needed in positioning.

C. The student shows a lack of retention in some areas of positioning. Needs guidance.

D. The student lacks knowledge and skill in basic positioning and needs direct and close supervision.

DESCRIPTION OF SCALE A. POSITIONING

The student demonstrates outstanding knowledge and skill in positioning by:

- verbally identifying the specific centering for each anatomical part radiographed and the placement of the central ray and its angulation.
- easing the patient gently, not abruptly, into an accurate position and stabilizing the patient.
- knowing departmental routines.
- correctly identifying basic anatomy on the image when critiquing his/her images for positioning.
- verbally identifying the positioning, what it demonstrates, if the positioning is accurate, and how to correct positioning errors.
- demonstrating pride, responsibility, and independence in his/her work.
- working at an even but efficient pace; keeping up with patient flow.

SCALE VIII. PATIENT CARE AND NURSING PROCEDURES

A. With few exceptions, the student demonstrates the understanding and skill needed in patient handling and nursing technique.

B. The student demonstrates an above average ability and knowledge in the performance of patient handling and nursing techniques.

C. The student shows a lack of retention in some areas of nursing procedures and patient care. Needs guidance.

D. The student demonstrates unsatisfactory knowledge and skill associated with nursing procedures and patient handling. Needs constant and close supervision.

DESCRIPTION OF SCALE A. PATIENT CARE AND NURSING PROCEDURES

The exceptional student will demonstrate knowledge and understanding of various nursing procedures and basic patient care as dictated by department policy by:

- explaining the exam to the patient.
- communicating effectively with the patient.
- SAFELY transporting patients and maintaining patient safety at all times
- using patient's name during procedure.
- maintaining patient's modesty and comfort throughout the exam, i.e., pillows, blankets, etc.
- completing the exam in a reasonable amount of time
- being able to take vital signs, i.e., put a cuff on accurately and take a BP, pulse rate and record them.
- knowing the location of emergency trays/cart, drugs, O_2 and suction machine.
- being able to set up the oxygen tank and suction machine for use.
- offering patient assistance; showing empathy, kindness, and reassurance.

Additional criteria to be considered for the summer 1st year and second year student:

- safely checking IV's.
- applying surgical and medical asepsis; being able to put on sterile gloves, gown, drawing up syringes, etc.
- being able to move around a sterile area without contaminating.
- following various isolation techniques.
- assisting the physician in non-emergency situations.
- calling in a code
- successfully passing the nursing procedures skills evaluation

SCALE IX. STUDENT PRESENTATION

A. 92-100% on presentation grade sheet

B. 82-91% on presentation grade sheet

C. 72-81% on presentation grade sheet

DESCRIPTION OF SCALE A STUDENT PRESENTATION

- Completed all required criteria for image presentation - see Guidelines for Student Clinical Presentations.

SCALE X. IMAGE EVALUATION

A. The student consistently evaluates his/her images with accuracy and can describe the required criteria for an acceptable radiograph. The student scores 92-100% on all Image Analysis Quizzes in the Second Year.

B. With few exceptions the student evaluates his/her images with accuracy and describes the required criteria for an acceptable radiograph. The student scores 82-91% on all Image Analysis Quizzes in the Second Year.

C. The student shows a lack of retention in some areas of image evaluation. The student scores 72-81% on all Image Analysis Quizzes in the Second Year.

D. The student demonstrates limited ability and knowledge to evaluate images and required criteria for an acceptable radiograph. The student scores below 72% on all Image Analysis Quizzes in the Second Year.

DESCRIPTION OF SCALE A IMAGE EVALUATION

The student performs the following objectives accurately and consistently.

- Identifies optimum contrast and density and describes controlling factors.
- Identifies proper anatomy and centering
- Identifies motion if present
- Describes image receptor and part centering
- Identifies proper patent positioning
- Identifies proper collimation and shielding.
- Completes all Image Analysis Quizzes with a score of 92-100% in the second year.

CLINICAL EVALUATION

Student _____ Date _____

Clinical Facility _____ Rotation: Fall Winter Spring Summer

Student's evaluation is based on assistance and performance in a wide variety of routine radiographic procedures.

I. RADIATION PROTECTION A B C D
10 8 6 0

- Considers pregnancy status
- Closes doors during procedures and exposures
- Is careful about gonadal shielding
- Collimates to image receptor or part size
- Protects himself/herself and others from irradiation (wears apron, gloves, dosimeter)
- Has minimal repeats

Comments: _____

_____

II. EQUIPMENT A B C D
10 8 6 0

- Demonstrates competency and proficiency with equipment
- Manipulates equipment safely (protects patients)
- Knows how to set the control panel (selects correct tube, bucky, etc)

Comments: _____

_____

III. PUNCTUALITY AND DEPENDABILITY A B C D
10 8 6 0

- Is punctual in reporting to room 5 minutes before start of shift
- Communicates whereabouts appropriately
- Minimum loss of time due to absenteeism
- Observes length of breaks

** Students receiving a "D" grade in this category cannot receive higher than a "C" in Job Performance*

Number of missed days: _____ Number of tardies: _____

Comments: _____

_____

IV. CO-WORKER, HOSPITAL RELATIONSHIP

A	B	C	D
10	8	6	0

- Is tactful and courteous with everyone
- Is willing to help others
- Takes the initiative to assist and perform exams.
- Is aware of teamwork expectations
- Demonstrates a team approach
- Accepts constructive criticism
- Projects professionalism
- Adheres to dress code
- Communicates effectively
- Contributes to a pleasant working environment
- Interacts well with ancillary departments
- Demonstrates proper ethical behavior

Comments: _____

_____

V. JOB PERFORMANCE

A	B	C	D
10	8	6	0

- Marks all radiographs
- Makes sure all supplies needed for exam are set up before procedure
- Perseveres and follows through on exams
- Is willing to start exam on own
- Demonstrates self confidence
- Judges new or changing situations and makes sensible decisions
- Is alert and interested in what is happening in room (asks pertinent questions).
- Reads the requisition and properly identifies patient by checking name before exam
- Helps to keep the room neat, clean, and stocked
- Follows verbal instructions with multiple steps
- Performs exams in a reasonable amount of time
- Communicates effectively
- Makes effective use of free time
- Is well organized
- Minimum of 8 observation forms

Second Year Only

- Fulfills performance objectives for special clinical assignments, evenings, and weekends

COMMENTS: _____

_____

VI. TECHNICAL FACTORS

A	B	C	D
10	8	6	0

- Can set manual techniques for a given procedure
- Can set the AEC device when warranted
- Can accurately select mAs and kV to compensate for pathology, motion, grids, etc.
- Chooses correct focal spot size
- Determines appropriateness of exposure based on exposure index (S-number, LgM, EI, etc.)
- Sets panel at proper time during the exam

Comments: _____

_____

VII. POSITIONING

A	B	C	D
10	8	6	0

- Knows department routines for required exams
- Knows positioning criteria
- Knows angulation of the x-ray tube for body parts
- Is gentle toward patients when positioning
- Positions the patient carefully and avoids manipulation of the injured area
- Uses proper immobilization
- Uses concise instructions to the patient
- Can recognize basic anatomy
- Can identify positioning errors
- Can correct positioning errors
- Is progressing toward minimal supervision and confidence in positioning
- Works at efficient pace

Exams Student Needs Practice In: / Comments: _____

_____

VIII. PATIENT CARE

A	B	C	D
10	8	6	0

- Explains exams to patients
- Communicates effectively
- Can safely transport and maintains patient safety at all times
- Maintains patient's modesty, privacy and comfort
- Offers patients assistance, shows empathy, is kind and reassuring
- Is able to take vital signs
- Performs exams in a reasonable amount of time
- Minimizes length of time patient is left unattended or in an uncomfortable position

Second Year Only

- Successfully passes the nursing procedures skills evaluation

Comments: _____

_____

IX. STUDENT PRESENTATION

A	B	C	D
10	8	6	0

- Knowledge of procedure
- Subject material covered

** Students receiving a "D" grade in this category cannot receive higher than a "C" in the category that corresponds to the area of deficiency in the presentation.*

Comments: _____

X. IMAGE EVALUATION

A	B	C	D
10	8	6	0

-Identifies optimum contrast and density
-Identifies proper anatomy and centering
-Identifies image and patient positioning
-Describes image receptor and part centering
-Identifies proper patient positioning
-Identifies collimation and shielding
Second Year Only
-Successfully passes the Image Analysis Quizzes with a score of 72% or better.

Comments: _____
_____

Clinical Education Evaluation _____ Points _____ 60% of total

Students must pass the Clinical Education Evaluation with a minimum of 80% or better. If 80% or better is not achieved an educational plan can be initiated, unless a "D" grade is earned in a category which will then require an educational plan.

Competencies:	Points:	Comments:
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

_____ Total Points _____ 40% of total

Total Percentage _____

Letter Grade _____

Signature of Student: _____ Date _____

Signature of Evaluator: _____ Date _____

Signature of Evaluator: _____ Date _____

Signature of Evaluator: _____ Date _____

NAME_____ CLINICAL SITE_____

Comments of student on evaluation and rotation:

_____

_____

_____

_____

_____

Areas student feels confident in:

_____

_____

_____

_____

Areas student feels improvement is needed:

_____

_____

_____

The student will work to improve:

1. _____

2. _____

Signature of Student: _____ Date: _____

Guidelines For Student Presentations
First Year
Fall, Winter & Spring Quarters

Each student is responsible for the preparation of a 15-20 minute presentation on an assigned topic during each of the first three quarters: RT53A, 53B and 53C. The topic is to be prepared individually, but during its presentation, questions may be asked of the rest of the students, as group participation is encouraged. Images must originate from within the affiliate.

Criteria Outline For Student Presentation

A. **Knowledge of Examination**
1. Why was this exam performed (trauma / follow-up / primary)?
2. Is there any patient prep for this exam?
3. Are there any post procedure instructions necessary for this exam?
4. Discuss any special equipment used during this exam (sponges / fluoroscopy)?
5. Was contrast media used for this exam? Discuss contrast type and amount.
6. Is there any difficulty for the patient to tolerate the exam?
7. Review images with a Radiologist, if available.

B. **Factors Affecting Image Quality**
1. What technical factors were used for each image (SID, mAs, kVp)?
2. What type of image receptor was used (CR / DR /)?
3. What type of equipment was used (Agfa / GE / Phillips, etc.)?
4. Are there any aspects of the exam that hinder the ability of the technologist from obtaining quality images?

C. **Positioning and Anatomy**
1. What is the department protocol for this examination?
2. Discuss the position of the patient. (AP / lateral / supine / standing / etc.)
3. Discuss the positioning criteria for each projection, (IR size, CR, tube angle, obliquity, etc.)
4. Identify from memory, the radiographic anatomy demonstrated.
5. What structures are best visualized on each position?
6. Discuss the patient care involved with this exam.
7. Explain the proper phase of respiration (inspiration / expiration).

D. **Critical Critique**
1. Were the technical factors used for this exam appropriate?
2. Is the collimation adequate? If not, how could it be improved?
3. Are right or left markers apparent and used correctly?
4. Is the positioning correct? If not, what was done incorrectly and how can the image be improved?
5. Are there artifacts present? How could they have been avoided?
6. Display and critique a sub-optimal image related to the topic. Discuss possible reasons for repeating the exam.

E. **Radiation Protection Measures**

1. Discuss the use of gonad shielding as it relates to this exam.
2. What is the pregnancy policy at this facility?
3. Calculate the total radiation dose administered to the patient during this exam?
4. Explain exposure index readings for this exam type.
5. How much fluoroscopy time was logged for this exam?

F. **Visual Aids**

1. The presentation must include visual aids. Examples include posters, handouts, image receptors and sponges, contrast media, drawings or photos from books. Students should feel free to express their creative ideas in this category.

Student presentations will be given a maximum point score of 10 on the Clinical Education Evaluation.

Presentation Rubric – 1st Year - F, W, & Sp Quarters

Name:_____ **Topic:**_____

	Full Coverage - 1.0	Partial Coverage - 0.5	Unsatisfactory - 0.0
Presented on Assigned Date			
Examination Knowledge			
Factors Affecting Image Quality			
Positioning			
Anatomy Identification			
Critical Critique			
Radiation Protection			
Visual Aids			
Organization/Communication			
Time Limit	20-15 min	Less than 15 min More than 11 min	Less than 11 min More than 20 min
Total Points Awarded			

Percentage_____
Grade_____

92-100%	A	10 points
82-91%	B	8 points
72-81%	C	6 points
Below 72%	D	0 points

Notes & Comments:_____

_____

_____ _____
Student Signature Evaluator Signature

Guidelines For Student Presentations
First Year
Summer Quarter

During the summer quarter of the first year, students will prepare a case study presentation to be given in the clinic. The main purpose of this presentation is to give the student an opportunity to explore the imaging of a disease as well as the treatment and prognosis. Topics should be selected according to the affiliate's specialties and the student's individual interests. Images must originate from within the affiliate, but only one modality needs to be included in the presentation. The length of the presentation should be 25 minutes and is worth 10 points towards the student's final grade in the hospital.

CONTENT:

1. Symptoms: What brought/would bring a patient to the doctor or hospital?
   It is expected that the student will thoroughly research the pathology through use of the Internet, medical library or other appropriate avenues.

2. Discussion of imaging techniques and how diagnosis was made: The student is required to sit down with the Radiologist and go over the images and chart when possible.

3. Compare the appearance of normal vs. abnormal images depicting the appearance of the pathology. This includes reviewing the normal anatomy on the image as you would on a competency.

4. Treatment options: Radiation therapy, chemotherapy, surgery, drugs/medication, physical therapy.

5. Prognosis of the disease or condition: What is the health outlook for this pathology and patient if known? Include the spectrum of mild to severe cases.

6. Conclusion: What are three take away points the student learned from this project?

7. Visual Aids: The presentation must include visual aids. Examples include posters, handouts, image receptors and sponges, contrast media, drawings or photos from books. Students should feel free to express their creative ideas in this category.

8. A question and answer period will follow the conclusion where the student is expected to field questions knowledgeably.

9. Reference bibliography: Must be turned in to the instructor at the time of the presentation. A properly formatted bibliography (APA or MLA) labeled with the student's name, must include a minimum of 5 peer-reviewed resources, including the personal interview with a Radiologist.

Presentation Rubric – 1st Year Summer Quarter

Name:_____ **Topic:**_____

	Full Coverage - 1.0	Partial Coverage - 0.5	Unsatisfactory - 0.0
Organization / Communication			
Visual Aids / Handouts			
Patient Symptoms			
Discussed Illness / Condition			
Imaging Techniques / Interview			
Normal / Abnormal Anatomy			
Treatment Plan			
Prognosis / Follow-Up			
Bibliography / Conclusion			
Time Limit	25 - 20 min	Less than 20 min More than 15 min	Less than 15 min More than 25 min
Total Points Awarded			

Percentage_____
Grade_____

92-100%	A	10 points
82-91%	B	8 points
72-81%	C	6 points
Below 72%	D	0 points

Notes & Comments:_____

_____

_____ _____

Student Signature Evaluator Signature

Guidelines For Student Presentations
Second Year
Fall Quarter

During the fall quarter of the second year, students will prepare a case study presentation to be given in the clinic. The main purpose of this presentation is to explore the imaging of a disease, the treatment plan, the prognosis, and the imaging modalities utilized to diagnosis the pathology. Topics should be selected according to the affiliate's specialties and the student's individual interests. Images must originate from within the affiliate. The length of the presentation should be 30 minutes and is worth 10 points towards the student's final grade in the hospital. If the required patient information is not available, the student will utilize research to supplement the presentation.

CONTENT:

1. Patient symptoms: What brought the patient to the doctor or hospital?
   It is expected that the student will thoroughly research the patient's pathology through use of the Internet, medical library or other appropriate avenues and discuss the pathology during the presentation.

2. Sequence of tests: Imaging, lab work-up, etc. Discuss the modalities (2 or more) used in diagnosing this patient's pathology (CT, Nuclear Medicine, Mammography, MRI, etc.). Why was each modality chosen? Compare the appearance of normal vs. abnormal images depicting the appearance of the pathology. This includes reviewing the normal anatomy on the image as you would on a competency.

3. Discussion of imaging techniques and how diagnosis was made: The student is required to sit down with the Radiologist and go over the patient's images and chart when possible.

4. Treatment plan: Radiation therapy, chemotherapy, surgery, drugs/medication, physical therapy.

5. Prognosis of the disease or condition: What is the health outlook for this patient?

6. Conclusion: What are three take away points the student learned from this project?

7. Visual Aids: The presentation must include visual aids. Examples include posters, handouts, image receptors and sponges, contrast media, drawings or photos from books. Students should feel free to express their creative ideas in this category.

8. A question and answer period will follow the conclusion where the student is expected to field questions knowledgeably.

9. Reference bibliography: Must be turned in to the instructor at the time of the presentation. A properly formatted bibliography (APA or MLA) labeled with the student's name, must include a minimum of 5 peer-reviewed resources, including the personal interview with a Radiologist.

Presentation Rubric – 2nd Year

Name:_____ **Topic:**_____

	Full Coverage - 1.0	Partial Coverage - 0.5	Unsatisfactory - 0.0
Organization / Communication			
Visual Aids / Handouts			
Patient Symptoms			
Discussed Illness / Condition			
Test Sequence - Modalities (Minimum of 2) Comparative Anatomy (Normal vs. Abnormal)			
Imaging Techniques / Interview			
Treatment Plan			
Prognosis / Follow-Up			
Bibliography / Conclusion			
Time Limit	30-25 min	Less than 25 min More than 20 min	Less than 20 min More than 30 min
Total Points Awarded			

Percentage_____
Grade_____

92-100%	A	10 points
82-91%	B	8 points
72-81%	C	6 points
Below 72%	D	0 points

Notes & Comments:_____

_____

_____ _____

Student Signature Evaluator Signature

RT 53A IMAGE ANALYSIS TOPICS

The Foothill College Instructor will present the following topics on a weekly basis throughout the academic quarter:

Session 1	Abdomen
Session 2	Chest
Session 3	Fingers, Hand
Session 4	Wrist, Forearm
Session 5	Folder Review
Session 6	Elbow, Humerus
Session 7	Foot, Ankle, Calcaneus
Session 8	Tib-Fib, Knee
Session 9*	Student Presentations
Session 10	Student Presentations
Session 11	Grades

* If instructor has additional time near the end of the quarter and has completed all of the required topics they may choose to do one of the following:

- Review the previous topics.
- Critique repeat images.
- Have a student bring a case he/she was involved with and have them describe the exam.

RT 53B IMAGE ANALYSIS TOPICS

The Foothill College Instructor will present the following topics on a weekly basis throughout the academic quarter:

Session 1	Shoulder/Clavicle
Session 2	Hip, Pelvis, & Femur
Session 3	Acute Abdomen
Session 4	Esophagus & UGI
Session 5	Folder Review
Session 6	Small Bowel
Session 7	BE
Session 8	IVU/Crash Cart
Session 9*	Student Presentations
Session10	Student Presentations
Session 11	Grades

* If instructor has additional time near the end of the quarter and has completed all of the required topics they may choose to do one of the following:

- Review the previous topics.
- Critique repeat images.
- Have a student bring a case he/she was involved with and have them describe the exam.

RT 53C IMAGE ANALYSIS TOPICS

The Foothill College Instructor will present the following topics on a weekly basis throughout the academic quarter:

Session 1	Cervical Spine
Session 2	Thoracic Spine
Session 3	Lumbar Spine / Sacrum & Coccyx
Session 4	Ribs
Session 5	Folder Review
Session 6	Skull
Session 7	Skull and cervical spine--trauma
Session 8	Tour of Central Services / Central Supply
Session 9*	Student Presentations
Session 10	Student Presentations
Session 11	Grades

* If instructor has additional time near the end of the quarter and has completed all of the required topics they may choose to do one of the following:

- Review the previous topics.
- Critique repeat images.
- Have a student bring a case he/she was involved with and have them describe the exam.

SECOND YEAR IMAGE ANALYSIS TOPICS

SUMMER SESSION	TOPIC
1.	Introduction
2.	Protocol / Anatomy Review
3.	Patient Movement & Transfer
4.	Digital Image Processing Workflow/C-arm
5.	Pediatrics
6.	Folder Review
7.	Technical Factors
8.	Sterile Technique
9.	Presentations
10.	Grades

FALL SESSION	TOPIC
1.	Introduction
2.	Nursing Procedures
3.	CT Tour / Discussion
4.	MRI Tour / Discussion
5.	Sectional Anatomy / Head
6.	Folder Review
7.	Sectional Anatomy / Thorax
8.	Sectional Anatomy / Abdomen & Pelvis
9.	Sectional Anatomy / Spine & Extremities
10.	Presentations
11.	Grades
12.	Open Topic

WINTER SESSION	TOPIC
1.	Introduction
2.	Nursing Procedures
3.	Mammography Tour
4.	Skull Labs
5.	Skull Labs
6.	Folder Review
7.	Skull Labs
8.	Angiography Tour / Discussion • Guide wires, catheters, supplies
9.	Angiography / Heart Catheterization
10.	Open Topic
11.	Grades
12.	Open Topic

SPRING SESSION	TOPIC
1.	Introduction
2.	Professional Development/Resume/Interviews
3.	Professional Development/Resume/Interviews
4.	Quality Control of Digital Equipment • Per vendor protocol
5.	Folder Review
6 – 10	Study Groups
11.	Grades
12.	Open Topic

Second Year - Winter Quarter Skull Labs

SESSION 1

Lesson objectives:

1. Student will mock position for Trauma Skull series.
2. Student will review radiographic images of Trauma Skull.

Lesson Activities:

1. Instructor will review Routine Skull positioning.
2. Instructor will demonstrate positioning for Trauma Skull series.
3. Instructor will demonstrate radiographic images for the above procedures.
4. Student will practice above steps.

SESSION 2

Lesson Objectives:

1. Student will mock position for routine Paranasal Sinus series.
2. Student will review radiographic images of routine Paranasal Sinuses.

Lesson Activities:

1. Instructor will demonstrate routine positioning for Paranasal Sinuses.
2. Instructor will demonstrate radiographic images of routine Paranasal Sinuses.
3. Student will practice above steps.

SESSION 3

Lesson Objectives:

a. Student will mock position for routine Facial Bones.
b. Student will mock position Trauma Facial Bone projections.
c. Student will review routine radiographic images of the above procedures.

Lesson Activities:

1. Instructor will demonstrate routine Facial Bone positioning.
2. Instructor will demonstrate Trauma Facial Bone positioning.
3. Instructor will demonstrate radiographic images of the above procedures.
4. Students will practice above steps.

SESSION 4

Lesson Activities:

1. Student will mock position for Zygomatic Arch projections.
2. Student will mock position for routine projections of the Mandible.
3. Student will review radiographic images for the above procedures.

Lesson Activities:

1. Instructor will demonstrate positioning for Zygomatic Arches.
2. Instructor will demonstrate positioning for Mandible.
3. Instructor will demonstrate radiographic images for the above procedures.
4. Student will practice above steps.

SESSION 5

Lesson Objectives:

1. Student will mock position for TMJ projections.
2. Student will mock position for Optic Foramina projections.
3. Student will review radiographic images for the above procedures.

Lesson Activities:

1. Instructor will demonstrate positioning for TMJ projections.
2. Instructor will demonstrate positioning for Optic Foramina projections.
3. Instructor will demonstrate radiographic images for the above procedures.
4. Students will practice above steps.

RADIOGRAPHY
DIDACTIC AND CLINICAL
COMPETENCY REQUIREMENTS

Eligibility Requirements Effective January 2017*

Candidates for certification are required to meet the Professional Requirements specified in Article II of the *ARRT Rules and Regulations*. This document identifies the minimum didactic and clinical competency requirements for certification referenced in the *Rules and Regulations*. Candidates who complete a formal educational program accredited by a mechanism acceptable to the ARRT will have obtained education and experience beyond the requirements specified here.

Didactic Requirements

Candidates must successfully complete coursework addressing the topics listed in the *ARRT Content Specifications for the Examination in Radiography*. These topics are presented in a format suitable for instructional planning in the *ASRT Radiography Curriculum* (2017).

Clinical Requirements

As part of their educational program, candidates must demonstrate competence in the clinical activities identified in this document. Demonstration of clinical competence means that the program director or designee has observed the candidate performing the procedure, and that the candidate performed the procedure independently, consistently, and effectively. Candidates must demonstrate competence in the areas listed below.

• Ten mandatory general patient care activities.
• Thirty-seven mandatory imaging procedures.
• Fifteen elective imaging procedures to be selected from a list of 34 procedures.
• One elective imaging procedure from the head section.
• Two elective imaging procedures from the fluoroscopy studies section, one of which must be either an Upper GI or a Contrast Enema.

Documentation

The following pages identify specific clinical competency requirements. Candidates may wish to use these pages, or their equivalent, to record completion of the requirements. The pages do NOT need to be sent to the ARRT.

To document that the didactic and clinical requirements have been satisfied, candidates must have the program director (and authorized faculty member if required) sign the ENDORSEMENT SECTION of the **Application for Certification** included in the *Certification Handbook*.

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* *Note: Candidates who complete their educational program during 2017 or 2018 may use either the previous requirements (effective 2012) or the current requirements (effective 2017). Candidates who graduate after December 31, 2018 may no longer use the previous competency requirements*.

How To Complete Competencies

Student's Role:

When a student feels capable of performing one of the required exams independently, he or she should notify the Clinical Instructor, the College Instructor, or a qualified technologist, and request to be monitored in that exam for a clinical competency evaluation. If all qualified evaluators are occupied, the student must accept this and try for another time. Waiting until the end of the quarter will not guarantee availability of a qualified person to monitor competency.

Evaluator's Role:

The Clinical Instructor, College Instructor, or a qualified technologist will try to accommodate the student's request. During the competency evaluation, the evaluator will observe the student perform the exam in an unobtrusive manner. No verbal directions or manual corrections will be made in front of the patient. If adjustments are needed, direction will be given to the student away from the patient before an exposure is initiated. This is important for the student's confidence during the evaluation process and the patient's confidence in their quality of care. The one exception would be if an evaluator sees an ***immediate*** danger to patient safety.

When a student successfully completes all aspects of the exam as outlined on the clinical competency evaluation with no more than **two minor adjustments per projection** and no more than **four minor adjustments for the entire procedure,** the attempted competency is complete. If an error is made that would make any projection repeatable, competency is automatically denied.

Failure to successfully complete a clinical competency evaluation requires the student to review and practice the exam further with the supervision of a technologist. When the student is ready to be evaluated again, the above procedure is repeated.

When a student successfully completes a competency it will be recorded on their master competency log sheet and the student may perform that exam with indirect supervision.

> *The two exceptions to this rule is fall and winter quarters of the first year. Students must perform all exams under* ***direct supervision.***

Competency Grading Criteria

The Clinical Education Evaluation will count as 60% of the final quarter grade. The clinical Competency Evaluations will count as 40% of the final quarter grade.

- All competency exams are worth 25 points.
- Each minor adjustment is -2 points. Two minor adjustments are allowed for each projection. More than four minor adjustments for the entire exam and the competency is not passed.
- If competency is *not* proven on the first attempt, subtract 8 points for each subsequent attempt.
- If competency is not met by the end of the quarter, 0 points will be applied to total score.

A percentage grade will be computed for the total competencies; points earned divided by points possible, multiplied by .40.

Example: A student performs 6 competencies worth a total of 150 points and the sum of his/her scores is 140 points.

- **Points earned (140) are divided by points possible (150) for a dividend of .93.**
- **.93 is then multiplied by .40 to obtain the 40% point value.**
  .93 x .40 = .372
- **Student receives 37.2 points for the Clinical Competency Evaluation portion of their final grade.**

Always include one decimal point to the right when doing the math for both the 40% and 60% portions of the grade. The sum of the points of the two sections should be rounded up if number to the right of the decimal is .5 or higher.

Clinical Competency Objectives

Radiation Protection

The student will:

- Close doors during procedure
- Collimate to part of interest or to the IR
- Use gonadal shielding on all patients
- Demonstrate use of lead aprons or gloves
- Wear dosimeter on collar
- Practice good radiation protection using optimum time, distance, and shielding
- Inquire about pregnancy of women of childbearing age
- Use appropriate SID

Use of Equipment

The student will:

- Utilize tube locks when moving the tube
- Select proper image receptor size and orientation
- Demonstrate proper room set-up
- Ensure bucky and tube are in detent
- Demonstrate proper body mechanics when utilizing equipment
- Accurately set the control panel
- Proper usage of the IR

Technical Factor Selection

The student will:

- Select correct factors at the control panel
- Select technical factors at the proper time during the procedure
- Use a technique chart
- Adapt for technique changes in SID, grid ratio, grid use, collimation, or body habitus
- Select appropriate AEC setting when applicable
- Verbalize technique for AEC exposure when applicable
- Select appropriate manual technique
- Ensure exposure index within the proper range

Positioning Skills

The student will:

- Know and perform the proper protocol
- Position the patient correctly to the image receptor
- Align center of part to be demonstrated to the center of the image receptor
- Center central ray to the center of the image receptor
- Angle central ray to the center of the image receptor when applicable
- Oblique patient correctly if required
- Remove artifacts

Image Receptor / Markers

The student will:

- Identify the radiograph with “R” or “L” and other appropriate lead markers
- Place lead markers appropriately and outside of the body part
- Identify the image receptor with the correct patient I.D.

Patient Management and Care

The student will:

- Properly identify the patient with 2 identifiers
- Explain the procedure to the patient
- Maintain professional, caring attitude
- Communicate instructions effectively
- Effectively assists physician when applicable
- Complete the exam in a reasonable amount of time
- Administer to patient’s rights and safety at all times

Image Quality and Anatomy

The student will:

- Accurately identify radiographic anatomy

Student Competency Procedure Log

CATEGORY 1 Chest & Thorax	Mandatory/ Quarter	Elective/ Quarter	Date Completed	Patient or Simulated	Verified By	First 6th Month Recheck July - Dec.	Second 6th Month Recheck Jan. - June
Chest Routine	1st						
Chest AP (Wheelchair or Stretcher)	2nd						
Chest Routine (age 6 or younger)	4th						
Ribs	3rd						
Chest Lateral Decubitus		2nd					
Sternum		3rd					
CATEGORY 2 Extremities							
Thumb or Finger	1st						
Hand	1st						
Wrist	1st						
Forearm	1st						
Elbow	1st						
Humerus	1st						
Shoulder	2nd						
Foot	1st						
Ankle	1st						
Tibia-Fibula	1st						
Knee	1st						
Femur - 4 views	2nd						
Clavicle	2nd						
Scapula		2nd					
AC Joints		2nd					
Patella		1st					
Calcaneus		1st					
Toe		1st					
Trauma Shoulder (Scapular Y Transthoracic, or Axillary)*	2nd						
Trauma Upper Extremity (Non-shoulder)*	3rd						
Trauma Lower Extremity*	3rd						
Upper Extremity (age 6 or younger)		4th					
Lower Extremity (age 6 or younger)		4th					
CATEGORY 3 Cranium							
Skull		4th					
Paranasal Sinuses		6th					
Facial Bones		6th					
Orbits		6th					
Zygomatic Arches		6th					
Nasal Bones		6th					
Mandible (Panorex acceptable)		6th					
Tempomandibular Joints		6th					

CATEGORY 4 **Spine & Pelvis**	Mandatory/ Quarter	Elective/ Quarter	Date Completed	Patient or Simulated	Verified By	First 6th Month Recheck July - Dec.	Second 6th Month Recheck Jan. - June
Pelvis	2nd						
Hip	2nd						
Cross Table Lateral Hip	2nd						
Cervical Spine	3rd						
Cross Table Lateral Spine (Horizontal Beam)	3rd						
Thoracic Spine	3rd						
Lumbosacral Spine	3rd						
Sacrum and/or Coccyx		3rd					
Scoliosis		4th					
Sacroiliac Joints		3rd					
CATEGORY 5 **Abdomen & Fluoroscopic Studies**	Student must select either an Upper GI or Barium Enema and one additional fluoroscopy study.						
Abdomen Supine (KUB)	1st						
Abdomen Upright	2nd						
Abdomen Decubitus		2nd					
Abdomen (age 6 or younger)		4th					
Esophagus		2nd					
Small Bowel Series		2nd					
Upper GI Series (Single or Double Contrast)		2nd					
Barium Enema (Single or Double Contrast)		2nd					
CATEGORY 6 **Other**							
Intravenous Urography		2nd					
Cystography/Cystourethrography		2nd					
ERCP		2nd					
Arthrography		2nd					
Myelography		3rd					
Upper Airway (Soft-Tissue Neck)		3rd					
Hysterosalpingography		3rd					
CATEGORY 7 **Mobile & Surgical Studies**							
Portable Chest	2nd						
Portable Abdomen	2nd						
Portable Orthopedic	2nd						
Mobile Study (age 6 or younger)		4th					
C-arm Procedure (Requiring manipulation to obtain more than one projection)	4th						
Surgical C-arm Procedure (Requiring manipulation around a sterile field)	4th						

CATEGORY 8 **Geriatric Patient****	Mandatory/ Quarter	Elective/ Quarter	Date Completed	Patient or Simulated	Verified By	First 6th Month Recheck July - Dec.	Second 6th Month Recheck Jan. – June
Chest Routine	1st						
Upper Extremity	1st						
Lower Extremity	1st						

* Trauma is considered a serious injury or shock to the body. Modifications may include variations in positioning, minimal movement of the body part, etc.
- All exams are labeled with a 1, 2, 3 or 4. This designates the quarter the student may begin comping on those exams. 1 = Fall, 2 = Winter, 3 = Spring, 4 = Summer Quarter of the first year.
** Geriatric Patients need to be 65 years of age or older, who have physical or cognitive impairment as a result of aging.

Competency Requirements
First Year

Fall – 1st Quarter	**Three Competencies**	
	▪ Chest – Adult (2V) ▪ KUB ▪ One Mandatory Extremity from Category 2 on the Student Competency Procedure Log labeled 1st Quarter. ▪ All mandatory competencies shall be performed on patients' age 18 and older.	(3)
Winter – 2nd Quarter	**Five Competencies**	
	▪ Five Competencies. ▪ Competencies must be selected from the Student Competency Procedure Log labeled 1st or 2nd Quarter. ▪ All mandatory and elective competencies shall be performed on patients' age 16 and older.	(5)
Spring – 3rd Quarter	**Seven Competencies**	
	▪ Seven Competencies. ▪ Competencies must be selected from the Student Competency Procedure Log labeled 1st, 2nd or 3rd Quarter. ▪ All mandatory and elective competencies shall be performed on patients' age 16 and older.	(7)
Summer – 4th Quarter	**Seven Competencies**	
	Recheck competencies required before student performs exam under indirect supervision ▪ Seven Competencies ▪ Competencies must be selected from the Student Competency Procedure Log labeled 1st, 2nd, 3rd or 4th Quarter. ▪ All non-pediatric designated competencies may be performed on patients' age 7 and older.	(7)

Note: Femur competency is four views: AP/Lat to include knee & AP/Lat hip. If a 4 view femur competency is performed and passed, the student will get credit for passing a hip competency also. The student cannot pass one competency without passing the other.

Competencies performed on C-spine and L-spine must be full series. Mock additional views if necessary.
Students who prove competency on Esophagus and UGI in digital fluoro rooms must mock the following overhead views: Esophagus: RAO – Rt. Lateral UGI: AP – LPO – RAO – Rt. Lateral

Competency Requirements
Second Year

Fall – 5th Quarter	**Twelve Competencies**	
	▪ Twelve Competencies. ▪ Competencies must be selected from the Student Competency Procedure Log labeled 1st, 2nd, 3rd or 4th Quarter. ▪ All non-pediatric designated competencies may be performed on patients' age 7 and older.	(12)
Winter – 6th Quarter	**Eleven Competencies**	
	Recheck competencies required before student performs exam under indirect supervision ▪ Nine Competencies ▪ Two Elective Competencies – Skull & Paranasal Sinuses. ▪ All non-pediatric designated competencies may be performed on patients' age 7 and older.	(9) (2)
Spring – 7th Quarter	**Seven Competencies**	
	▪ Seven Competencies ▪ Three of the 7 competencies must be completed during Spring Quarter (not comped ahead in Winter) ▪ All non-pediatric designated competencies may be performed on patients' age 7 and older.	(4) (3)

- **Total of 37 Mandatory Competencies**
- **Total of 15 Elective Competencies –**
  - *Either an UGI or BE plus one additional fluoroscopy exam*
  - *Skull & paranasal sinuses – Winter Quarter 2nd Year*
  - *11 electives of their choice*

Note: Femur competency is four views: AP/Lat to include knee & AP/Lat hip. If a 4 view femur competency is performed and passed, the student will get credit for passing a hip competency also. The student cannot pass one competency without passing the other.

Competencies performed on C-spine and L-spine must be full series. Mock additional views if necessary.

Students who prove competency on Esophagus and UGI in digital fluoro rooms must mock the following overhead views:

Esophagus: RAO – Rt. Lateral UGI: AP – LPO – RAO – Rt. Lateral

Reference #_____

MANDATORY □ ELECTIVE □

FOOTHILL COLLEGE RADIOLOGIC TECHNOLOGY PROGRAM
Clinical Competency Evaluation

Student _____ Date _____ Procedure _____ Clinic _____

Quarter _____ 1st Year ( ) 2nd Year ( ) Competency ( ) Recheck ( )

3 – Acceptable * 2 – Requires Minor Improvement ** 1 – Unacceptable 0 – N/A

* More than two "2's" for any one position requires re-evaluation.
** More than four "2's" for the exam requires re-evaluation.
** A "1" in any evaluation area requires repeating the Competency Evaluation.

Students who receive a 2 or 1 in any area with an asterisk (*) must repeat the evaluation.

Time competency was started: _____ Time competency was completed: _____

Radiation Protection

* **Inquired about pregnancy status if applicable**	
* **Used gonadal shielding**	
Closed doors during procedure and exposure	
Wore dosimeter on collar	
Used protective devices when appropriate	

Use of Equipment

* **Ensured bucky and tube were in detent**	
Proper body mechanics when utilizing equipment	

Positioning Skills

* **Knew and performed the protocol**	
Removed artifacts	

Image Receptor / Markers

* **Placed the correct lead marker(s) appropriately in the light field**	
Identified the image receptor with the correct patient ID	

Patient Management and Care

* **Properly identified the patient with 2 identifiers**	
* **Administered to patient's rights and safety at all times**	
Explained the procedure to the patient	
Maintained a professional, caring attitude	
Communicated instructions effectively	
Completed exam in a reasonable amount of time	
Effectively assisted physician when applicable	

Image Quality and Anatomy

* **Accurately identified anatomy**	

Projections:

Collimated to part of interest or to the IR						
Used appropriate SID						
Accurately set the control panel						
Selected proper image receptor size & orientation						
Utilized tube locks when moving the tube						
Selected technical factors at the proper time during the procedure						
Adapted for technique changes in SID, grid ratio, grid use, collimation or body habitus						
Selected appropriate AEC setting when applicable						
Verbalized technique for AEC exposure when applicable						
Manual technique used: kV_____ mAs_____						
Verified index was appropriate _____						
Positioned the patient correctly to the image receptor						
Centered central ray to the body part						
Proper marker orientation						

Comments: _____

_____

_____

Pass ( ) Score / 25 Retest ( ) - 8

_____ _____

Student Signature Evaluator Signature

_____ _____

Student Name (Print) Evaluator Name (Print)

Digital Assessment

Name: _____

Image Receptor Identification

The student will be able to:	Performed	Omitted
Identify the IR with patient information using barcode or manual entry		
Select exam to be performed		
Select patient orientation if applicable		
Select IR orientation if applicable		
Verify all exam and patient information		
Place IR into reader if applicable		

Post Processing

The student will be able to:	Performed	Omitted
Retrieve images to work station computer		
Orient images correctly		
Annotate images with markers and/or comments		
Identify window level tool if applicable		
Change patient information if applicable		
Change exam information if applicable		
Check exposure number (LgM, S, REX, etc.) or range to confirm IR was neither over or under exposed		
Identify post collimate		
Save the exam		
Send the exam to archiving system		
Print images if applicable		

Student _____ Date _____

Technologist _____

NURSING PROCEDURES OBJECTIVES

The student will be able to pass with 85% or better a standard written quiz and a practical skills test on nursing procedures.

Part I: For the written test the student will be able to describe:

1. What is considered a normal adult blood pressure.
2. The definitions of systolic and diastolic pressure.
3. The range of a normal adult respiration rate.
4. The range of a normal adult pulse rate.
5. The location of the Emergency Cart, oxygen tank and suction machine.
6. The protocol for initiating each of the following codes: cardiac arrest, fire and bomb threat
7. The correct placement of the patient's urinary bag and an explanation of the reason for placement.
8. The correct height of an I.V. bottle and an explanation of the reason for placement.
9. Where one would find information related to patients' isolation procedures in the radiology department and on portables.
10. Department isolation protocol

Part Two: For the skills test the student will be able to:

1. Take a blood pressure
2. Take a pulse
3. Take a respiration
4. Set up oxygen for use
5. Set up suction machine for use
6. Set up an I.V. solution and tubing

NURSING PROCEDURES QUIZ

Name _____ Date _____Clinic _____

1. What is the range for a normal adult blood pressure?

2. Regarding question #1, name the medical term for the top number and define it in the space below.

3. State the range for a normal adult respiration rate.

4. What is the range for a normal adult pulse rate?

5. State the location(s) for each piece of emergency equipment:

   Crash Cart
   Oxygen Tank
   Suction Machine

6. What is the protocol for initiating each of the following codes?

   Cardiac Arrest:
   Fire:
   Bomb Threat:

7. Where are the fire extinguishers located?

8. What is the correct placement of the patient's urinary bag and why?

9. How high should the I.V. bottle be elevated and why?

10. Where would one find information related to a patient's isolation procedure:

    in the radiology department?
    on a portable?

NURSING PROCEDURES QUIZ

KEY

1. Normal adult blood pressure: **systolic: 110-140; diastolic: 60-80**

2. Medical term for the top number: **systolic.**

   Definition: **The highest pressure exerted on the arterial wall when blood is ejected from the left ventricle.**

3. Range for normal adult respiration rate: **12-30 /minute.**

4. Range for normal adult pulse rate: **60-90/minute.**

5 -7. Answers to these questions are intrinsic to each affiliate.

8. The patient's urinary bag should be placed below the level of the bladder to prevent infection caused by back flow.

10. An I.V. bottle should be elevated 18-24 inches above the vein. This prevents back flow of blood into the I.V. tubing. Also, the height of the solution affects the rate of flow.

11. Answer to this question is intrinsic to the individual affiliate.

Nursing Procedures: Vital Signs and Medical Equipment Assessment

Name: _____ **PASS / FAIL**

	Performed	Omitted
Pulse & Respiration		
❖ Have patient sit or lie down		
❖ Inform patient you are going to count pulse		
❖ Place index and middle fingers over radial artery		
❖ Count for 30 seconds		
❖ Count respiration while fingers are still over radial artery		
❖ Do not tell patient you are counting respirations		
Blood Pressure		
❖ Explain procedure to patient while waiting for patient to be at rest for awhile		
❖ Place patient in comfortable position with arm extended, palm facing up and arm comfortably supported		
❖ Wrap cuff snugly around upper arm, 2" above brachial artery		
❖ Place sphygmomanometer on level surface so it can be easily read		
❖ Close the valve on the air pump		
❖ Find the pulse of the brachial artery with fingertips		
❖ Place stethoscope tips in ears and place bell over artery		
❖ Pump air into cuff until pressure valve reads approximately 160		
❖ Open valve slowly and watch needle of gauge move slowly down numerically		
❖ When diastolic pressure is no longer audible, release all pressure in the cuff		
❖ Remove cuff		
❖ Record the blood pressure		
Oxygen & Suction		
❖ Turn on main valve of oxygen		
❖ Regulate flow of oxygen to proper value		
❖ Locate on/off switch and regulator		
❖ Inspect proper tubing attachments		
❖ Observe proper clean-up techniques		
IV Set-Up		
❖ Engage IV tubing into IV bottle and bleed fluid to end of line		

Student _____ Technologist _____

Date _____

Student must pass the nursing procedures evaluation with a 100%. Students receiving a failing mark must repeat the procedure is passed. A failing mark will lower the student's grade one grade in Patient Care.

Off-Hour Clinical Assignment Objectives

Expected Outcomes:

The student will be able to:

1. Recognize the management hierarchy during off-hour assignments.
2. Work effectively as a team member during after hours, weekend or emergency room situations.
3. Communicate effectively with nurses, doctors, and other health care providers during after hours, weekend or emergency room situations.
4. Communicate effectively with patients during emergency or trauma situations.
5. Recognize proper methods for initiating after hours, weekend or emergency room procedures.

Expanded Outcomes:

The student will be able to:

1. Recognize the management hierarchy during off-hour assignments.
    a. Reports to clinical supervisor at beginning of shift.
    b. Informs clinical supervisor of whereabouts at all times.
    c. Identifies radiologist on-call
    d. Identifies nursing and support personnel
    e. Works under direct supervision at all times.

2. Work effectively as a team member during after hours, weekend or emergency room situations
    a. Follows directions effectively.
    b. Demonstrates initiative.
    c. Anticipates what is needed during the exam.
    d. Demonstrates judgment and decision making skills during non-traditional procedures.
    e. Takes action to get help or assistance during emergency.
    f. Observes and assists during off-hour in-patient, outpatient and emergency room procedures.
    g. Participate in the departmental responsibilities of technologists during off-hour shifts.

3. Communicate effectively with nurses, doctors, and other health care providers during after hours, weekend or emergency room situations.
    a. Initiate emergency codes
    b. Recognizes phone numbers of other departments.
    c. Identifies protocols for exam initiation and completion.
    d. Communicates clearly, calmly and accurately during stressful procedures.
    e. Projects professional behavior at all times.

4. Communicate effectively with patients during emergency or trauma situations.
    a. Communicates in a supportive manner while working at an efficient pace.

b. Understands the importance of obtaining the patient's cooperation during emergency procedures.
c. Demonstrates empathy and understanding with emergency and after hours patients.
d. Gives patients clear instructions during exam.
e. Maintains confidentiality when speaking to family members or the public.

5. Recognize proper methods for initiating after hours, weekend or emergency room procedures.
   a. Recognizes how the radiology department is notified of after hours or weekend in-patient, outpatient or emergency procedures.
   b. Participates in patient and exam prioritizing during off-hour assignments.
   c. Demonstrates an understanding of the requisition and image management system during off-hour assignments.

Off-Hour Clinical Rotation Observation

Student Name_____ Clinical Facility_____

Supervisor Name_____Supervisor Signature_____

Dates of Off-Hour Rotation_____

Times of Off-Hour Rotation_____

1. Recognized Management hierarchy during off-hour assignment

	Performed	Omitted
A. Reported to clinical supervisor at beginning of shift		
B. Informed clinical supervisor of whereabouts at all times		
C. Identified radiologist on call		
D. Identified nursing and support personnel		
E. Worked under direct supervision at all times		

Comments:

2. Worked effectively as a team member during after hours, weekend or emergency room situations.

	Performed	Omitted
A. Followed directions effectively		
B. Demonstrated initiative		
C. Anticipated what was needed during exams		
D. Demonstrated judgment and decision making skills during non-traditional procedures		
E. Took action to get help or assistance during emergency		
F. Observed and assisted during off-hour in-patient, outpatient and emergency room procedures		
G. Participated in departmental responsibilities of during off-hour shifts		

Comments:

3. Communicated effectively with nurses, doctors, and other health care providers during after hours, weekend or emergency room situations.

	Performed	Omitted
A. Demonstrated knowledge on how to initiate emergency codes		
B. Recognized phone numbers of other departments		
C. Identified protocols for exam initiation and completion		
D. Communicated clearly, calmly and accurately during stressful procedures		
E. Projected professional behavior at all times		

Comments:

4. Communicated effectively with patients during emergency or trauma situations.

	Performed	Omitted
A. Communicated in a supportive manner while working at an efficient pace.		
B. Demonstrated the ability to obtain the patient's cooperation during emergency procedures.		
C. Demonstrated empathy and understanding with emergency and after hours patients.		
D. Gave patients clear instructions during procedures		
E. Maintained confidentiality when speaking to family members or the public		

Comments:

5. Recognized proper methods for initiating after hours, weekend or emergency room procedures.

	Performed	Omitted
A. Recognized how the radiology department is notified of after hours or weekend in-patient, outpatient or emergency procedures		
B. Participates in-patient and exam prioritizing during off-hour assignments.		
C. Demonstrates an understanding of the requisition and image management system during off-hour assignments.		

Comments:

Student's Signature _____ Date _____

Technologist's Signature _____

Operating Room and C-arm Orientation

Name:_____ Clinical Site:_____

Demonstrate:	Initial:
Plugging in monitor cart cable to the C-arm.	
Plugging in the footswitch and draping procedure.	
Plugging in the C-arm power cord to the grounded wall outlet.	
Powering up the C-arm.	
Entering the patient information on the monitor cart computer.	
How to initiate an exposure.	
Setting a manual technique.	
How to flip an image.	
How to rotate an image.	
Adjusting the collimation.	
Adjusting the window and level (Contrast and Brightness).	
Annotating an image.	
Saving an image on the C-arm.	
Initiating the brake on the C-arm and the monitor cart.	
Raising and lowering the C-arm column.	
How to use the In/Out, Wig Wag, Flip Flop, Arc rotation and C-arm rotation.	
Positioning the monitor cart to provide optimal viewing for the surgeon.	
The x-ray tube end vs. the Image Intensifier end of the C-arm.	
Cleaning the C-arm with disinfectant after each use.	
Fluoro time location and documentation.	

Talking Points:	
Examining the OR table for possible obstructions or artifacts.	
Avoiding creating a tripping hazard with cords and cables.	
Safely moving the C-arm around the patient for AP and Lateral views.	
Avoiding collisions with the surgical staff when moving into position.	
Avoiding collisions when moving the C-arm through doorways and corridors.	
Using mirror balls, and calling out when going around “blind” corners.	
Placing a bag over the lower end of the C-arm to protect from fluids.	
Using universal precautions whenever bodily fluids may be present.	
Technologist role in sterile draping of the C-arm.	
How to avoid contaminating sterile fields and follows sterile protocols.	
Working with “scrubbed in” staff to drape the C-arm before full rotation to the lateral view.	
Direct Supervision Policy in the OR.	
Communication with OR Staff.	
Review proper OR attire.	

Student Signature: _____ Date: _____

Technologist Name: _____ Signature:_____

FOOTHILL COLLEGE RADIOLOGIC TECHNOLOGY PROGRAM
C-Arm Competency Evaluation

Student _____ Date _____ Procedure _____ Clinic _____

Quarter _____ 1st Year ( ) 2nd Year ( ) Competency ( ) Recheck ( )

Type of competency: Sterile Field ( ) Multiple Projections ( )

3 – Acceptable * 2 – Requires Minor Improvement ** 1 – Unacceptable 0 – N/A

** More than four "2's" for the exam requires re-evaluation.
** A "1" in any evaluation area requires repeating the Competency Evaluation.

Students who receive 1 in any area with an asterisk (✷) must repeat the evaluation.

Time competency was started: _____ Time competency was completed: _____

Pre-Procedure Set-Up

Wore appropriate surgical clothing including cap, mask and shoe covers.	
Safely transported the C-arm and monitor into the OR / room.	
Powered up the equipment correctly.	
Evaluated requisition for patient name, exam and history.	
Entered patient data into the system.	
Able to set up the control panel.	
Applied sterile equipment covers.	
***Observed the sterile field.**	
Communicated effectively with the surgeon and OR staff.	

Equipment Manipulation

***Manipulated the locks correctly.**	
Effectively manipulated the C-arm into the required positions.	
Communicated appropriately throughout the procedure.	
Energized the C-arm using correct technical factors and mode.	
Utilized the control panel settings effectively.	
Saved images as requested by the surgeon.	
Cleaned the equipment when necessary.	
Performed image manipulation.	

Radiation Protection

Collimated the beam to the anatomical area, when applicable.	
***Wore a protective lead apron when C-arm was energized.**	
Ensured the OR personnel were wearing protective lead aprons and dosimeters during exposures.	
Communicated x-ray exposure when necessary.	
Shielded the patient when applicable.	

Post Procedure

Retrieved saved images.	
Annotated correctly.	
Collimated (if appropriate).	
Sent images to PACS and or printer.	
Completed all other necessary computer functions and paperwork.	

Image Evaluation

Recognized correct projection and patient body position.	
Able to identify all questioned anatomy.	
Demonstrated knowledge of the exam/procedure.	

Comments: _____

_____

_____

Pass ( ) Score / 25 Retest ( ) - 8

_____ _____

Student Signature Evaluator Signature

_____ _____

Student Name (Print) Evaluator Name (Print)

Patient Movement and Transfer Objectives

Expected Outcomes:
The student will be able to:

1. Correctly identify patient (using two identifiers)
2. Escort patient from waiting area to imaging room
3. Walk next to patient to be able to catch if patient is falling
4. Safely assist ambulatory patient onto radiographic table
5. Maintains physical contact while patient climbs on step stool and sits on table
6. Safely assists ambulatory patient off of radiographic table
7. Safely transports patient in wheelchair
8. Uses wheelchair locks and footrests properly
9. Safely assists patient from wheelchair to radiographic table
10. Safely assists patient from radiographic table to wheelchair
11. Identifies and properly utilizes all gurney locks and accessories
12. Safely maneuvers gurney around corners and through doorways
13. Ensure all catheters, IVs and monitoring equipment will transfer safely and without pulling
14. Utilizes side rails properly
15. Properly transfers patient from gurney to radiographic table with available transfer devices.
16. Properly transfers patient from radiographic table to gurney with available transfer devices.

Expanded Outcomes:

1. Correctly identify and escort a patient from waiting area to the radiographic room.
    a. Introduce self.
    b. Properly identify patient using two forms of identification.
    c. Use patient's proper name; Ms., Mr., Mrs.
    d. Maintain sight and awareness of patient. Walk with patient, not ahead of them.
    e. Offer physical support for patients who are not steady.
2. Safely assist a patient onto a radiographic table.
    a. Explain to patient where they will be positioned on the x-ray table.
    b. Maintain physical contact and assist patient onto the step stool.
    c. Maintain physical contact and assist patient to sitting position on the edge of the table.
    d. Support the patient's head and assist with lifting legs when lying the patient down in the supine position.
3. Safely assist a patient off a radiographic table.
    a. Explain to patient that you will be assisting them off the table.
    b. Position step stool close to the table.
    c. Support the patient's head and assist with lifting legs to a sitting position on the edge of the table.
    d. Maintain physical contact and allow patient to sit for a minute and inquire if they are dizzy or lightheaded.
    e. Maintain physical contact and assist patient to step stool and floor.
    f. Assess patient's stability and walk with them to dressing room.
4. Safely transport a patient in a wheelchair.
    a. Introduce self while facing the patient.
    b. Ensure patients arms and elbows are inside the armrests.

c. Ensure patient's feet are on the footrests.
d. Ensure all lines, catheters and monitoring equipment will transport without pulling.
e. Unlock wheelchair.
f. Push wheelchair slowly and smoothly.
g. Lock wheel chair when reaching destination.

5. Safely assist a patient from a wheelchair to a standing position.
   a. Assess patient's ability to stand. Determine if you need assistance.
   b. Face wheelchair in direction where patient is required to stand.
   c. Lock wheelchair.
   d. Raise footrests.
   e. Ensure all lines, catheters and monitoring equipment will transfer without pulling.
   f. Maintaining physical contact and support while assisting patient to a standing position.
   g. While maintaining physical contact reassess patient's ability to stand unassisted.
   h. Walk with patient to desired location.
6. Safely assist a patient from a standing position into a wheelchair.
   a. Place chair close to patient.
   b. Lock wheels.
   c. Ensure footrests are up.
   d. Ensure all lines, catheters and monitoring equipment will transfer without pulling.
   e. Ensure patient is close to chair before sitting.
   f. Assist to sitting position while insuring chair will remain stable.
   g. Adjust footrests.
7. Safely assist a patient from a wheelchair onto a radiographic table.
   a. Assess patient's ability to stand. Determine if you need assistance.
   b. Place wheelchair along side of radiographic table facing the step stool.
   c. Lock wheelchair.
   d. Raise footrests.
   e. Ensure all lines, catheters and monitoring equipment will transfer without pulling.
   f. Maintaining physical contact and support assist patient to a standing position.
   g. Before releasing patient reassess patients ability to stand unassisted.
   h. If unable to stand unassisted seat the patient and call for assistance.
   i. Maintain physical contact and assist patient onto the step stool.
   j. Maintain physical contact and assist patient to sitting position on the edge of the table.
   k. Support the patient's head and assist with legs when lying the patient down in the supine position.
8. Safely assist a patient from a radiographic table into a wheelchair.
   a. Explain to patient that you will be assisting them off the table.
   b. Place chair close to radiographic table. Lock wheels. Raise footrest.
   c. Position step stool close to the table.
   d. Ensure all lines, catheters and monitoring equipment will transfer without pulling.
   e. Support the patient's head and assist with adjusting legs to a sitting position on the edge of the table.
   f. Allow patient to sit for a minute and inquire if they are dizzy or lightheaded.
   g. Maintain physical contact and assist patient to step stool and floor.
   h. Maintain physical contact and ease patient to sitting position in wheelchair.
   i. Adjust footrests.

9. Identify and properly utilize gurney locks and accessories.
    a. Recognize different gurney types used in the hospital.
    b. Identify and manipulate all locks.
    c. Identify and manipulate all types of safety rails.
    d. Identify how to raise and lower patient's head.
10. Safely maneuver gurneys.
    a. Push gurney with patient's head close to you, directing the feet first.
    b. Ensure patient's hands and arms are inside gurney perimeters.
    c. Ensure all lines, catheters and monitoring equipment will transport without pulling.
    d. Back into elevators with patient's head going in first.
    e. Master turning corners and directing the gurney in a straight line.
11. Properly transfer patients from a gurney to the radiographic table.
    a. Determine the number of people for a safe patient transfer. At least two preferably three people.
    b. Explain the move to the patient.
    c. Remove table pad and pillow.
    d. Adjust table and/or gurney heights.
    e. Adjust gurney slightly higher than table.
    f. Lock gurney and table in place.
    g. Have patient cross arms over chest.
    h. Ensure all lines, catheters and monitoring equipment will transfer without pulling.
    i. Position one person on the side of the gurney away from the table. This person ensures gurney stability with their body weight. Position the second person on the opposite side of the radiographic table. The third person should guide the head and watch the lines.
    j. First person will roll patient towards them a quarter turn to enable the slider to be positioned under patient.
    k. The second (and third) person will pull the patient onto slider. Never push patient onto slider.
    l. Ensure the patient is securely on the radiographic table before unlocking and removing the gurney.
12. Properly transfer patients from radiographic table to gurney.
    a. Determine the number of people for a safe patient transfer. At least two preferable three people for gurney transfer.
    b. Explain the move to patient.
    c. Adjust table and/or gurney heights.
    d. Adjust gurney slightly lower than table.
    e. Lock gurney and table in place.
    f. Have patient cross arms over chest.
    g. Ensure all lines, catheters and monitoring equipment will transfer without pulling.
    h. Position one person on the side of the gurney away from the table. This person ensures gurney stability with their body weight. Position the second person on the opposite side of the radiographic table. The third person should guide the head and watch the lines.
    i. Second person will roll patient towards them a quarter turn to enable the slider to be positioned under patient.
    j. The first (and third) person will pull the patient onto slider. Never push patient onto slider.

k. Ensure the patient and lines are securely on the gurney before unlocking and moving the gurney.
l. Replace safety rails.

Patient Movement and Transfer Assessment

Name: _____ Date: _____

Ambulatory Patient:	Performed	Omitted
Correctly identifies patient (using two identifiers)		
Escorts patient from waiting area to imaging room		
Walk next to patient to be able to catch if patient is falling		
Safely assists ambulatory patient onto radiographic table		
Maintains physical contact while patient climbs on step stool and sits on table		
Safely assists ambulatory patient off of radiographic table		

Wheelchair Patient:		
Safely transports patient in wheelchair		
Uses wheelchair locks and footrests properly		
Safely assists patient from wheelchair to radiographic table		
Safely assists patient from radiographic table to wheelchair		

Gurney Patient:		
Identifies and properly utilizes all gurney locks and accessories		
Safely maneuvers gurney around corners and through doorways		
Ensure all catheters, IVs and monitoring equipment will transfer safely and without pulling		
Utilizes side rails properly		
Properly transfers patient from gurney to radiographic table with available transfer devices. Please list transfer devices here:		
1.		
2.		
3.		
4.		
5.		
Properly transfers patient from radiographic table to gurney with available transfer devices.		

Comments:

_____

_____

_____

_____ _____

Clinical Instructor Student

Sterile and Aseptic Technique Assessment

The instructor or designated technologist will review hospital protocol for infectious disease and perform isolation techniques with the students.

1. Review hospital protocol for infectious disease.
2. Demonstrate isolation procedures for a portable chest using the clean tech/dirty tech method.
   - Supplies needed for an isolation procedure:

Gown	Gloves
Mask	Bonnet
Shoe Covers	Pillowcase

3. Demonstrate the setting up of a sterile tray
   - Putting on sterile gloves, gowns and masks using sterile technique
   - Opening a sterile tray and working around it without contamination
   - Adding sterile objects to a sterile tray

The student will:

4. Mock position for a portable chest using isolation procedures.
5. Put on sterile gloves, gowns and masks using sterile technique.
6. Demonstrate opening a sterile tray and placing sterile objects on the tray without contaminating the sterile field.

Student _____ Date _____

Technologist _____

Angiography Clinical Objectives

By the end of the one-week Angiography rotation the student will be able to:

Preliminary Exam Preparation

Properly evaluate the requisition.

Demonstrate room readiness.

Accurately enter the patient information.

Displays punctuality and dependability.

Patient Care and Handling

Demonstrate professionalism.

Identify the correct patient and introduce self.

Assist patients on and off the table.

Communicate effectively with the patient and staff.

Understand how to work within or around the sterile field.

Identify pertinent equipment used during the procedure: catheters, guide wires, dilators.

Discuss sedation analgesia with the nurse and gain understanding of the medications used.

Imaging Techniques

Effectively set up automatic injector.

Assist with positioning of patient for imaging sequences.

Accurately identify equipment controls.

Correctly identifies major arteries of the head and neck, the aorta and its main branches, major arteries of the upper and lower extremities.

Imaging and Image Manipulation

Correctly records, archives, and processes images.

Identifies means by which images are presented to the radiologist for interpretation.
Demonstrates an understanding of post-procedure care.

Angiography Checklist **Student:** _____

Please use this checklist to orientate the student to the angio environment.

Activity	Performed	Initial & Date
Department Information		
Identify department location		
Introduction to staff		
Explain patient scheduling and registration		
Discuss angio requisition		
Locate patient dressing area		
Patient Care & Preparation		
Review patient prep – advanced prep ▪ Dietary restrictions ▪ Lab work such as BUN, creatinine levels, PT, PTT ▪ History and Physical, vital signs ▪ Pre-medication		
Review patient prep – immediately preceding examination ▪ Patient identification ▪ Consent ▪ Correct site identification ▪ Site preparation (locate pulse, shave, disinfect)		
▪ Demonstrate techniques used when "scrubbing in": ▪ Open and set up of sterile tray ▪ Identify all pre-packaged items on tray ▪ Identify all items that need to be added to the tray		
Discuss Role of Radiology Nurse		
Discuss conscious sedation: ▪ Types of sedatives used ▪ Dosage ▪ Administration route ▪ Documentation		
Post procedure care: ▪ Pressure to puncture site ▪ Patient monitoring ▪ Immobilization		
Equipment		
Discuss overall room readiness		
Demonstrate aspects of the console to include: ▪ kVp and mAs selection ▪ Timing of imaging sequences to coincide with contrast injection and anatomy to be imaged ▪ Selection of focal spot sizes ▪ Selection of magnification modes		
Identify components of the fluoroscopy equipment: ▪ Single versus biplane ▪ C/arm angulation to include oblique and craniocaudal positioning ▪ Table movement		

▪ Radiation protection devices		
Review of techniques and devices used during procedure to include: ▪ Discuss Seldinger technique and needles ▪ Guide wires, catheters, dilators, adaptors, stopcocks, injector tubing		
Pressure injector: ▪ Types and amounts of contrast agent used ▪ Loading injector ▪ Heating cuff ▪ Controls on injector head ▪ Controls on injector console (flow rate, PSI, volume, etc.) ▪ Documentation of contrast usage		
Set up the imaging equipment (in angio suite) for the following procedures: ▪ Intracranial studies ▪ Aortic arch, common carotid, vertebral studies ▪ Upper and lower extremities ▪ Abdominal/pelvic studies		
Review accessory equipment to include, but not limited to: ▪ Contrast warmers, pulse oximeter, O_2, suction, EKG, display monitors		
Locate emergency crash cart		
Discuss procedure for calling a code		
Imaging Procedures		
Discuss how images are obtained and displayed for radiologist interpretation.		
Discuss arterial anatomy: ▪ Aortic arch, neck, head, abdominal aorta and main branches, pelvis, and the major vessels of the upper & lower extremities		
Review quality assurance mechanisms		
Other		
Review angio clinical objectives and competency forms		
Discuss documentation before, during and after the procedure to include charging and coding requirements		
Optional		
Cardiac Cath Lab ▪ Radiographic equipment (single vs. biplane c/arm) and imaging techniques ▪ Monitoring devices, contrast agents, catheters, guide wires ▪ Overview of diagnostic vs. interventional procedures ▪ Basic arterial anatomy		

Angiography Rotation Observation

Unacceptable = 1 Requires Improvement = 2 Acceptable = 3
By the end of the one-week Angiography rotation the student will be able to:

Preliminary Exam Preparation

1 2 3 _____ Properly evaluate the requisition.

1 2 3 _____ Demonstrate room readiness.

1 2 3 _____ Accurately enter the patient information.

1 2 3 _____ Displays punctuality and dependability.

Patient Care and Handling

1 2 3 _____ Demonstrate professionalism.

1 2 3 _____ Identify the correct patient and introduce self.

1 2 3 _____ Assist patients on and off the table.

1 2 3 _____ Understand how to work within or around the sterile field.

1 2 3 _____ Identify pertinent equipment used during the procedure: catheters, guide wires, dilators.

1 2 3 _____ Discuss sedation analgesia with the nurse and gain a basic understanding of the medications used.

1 2 3 _____ Effectively communicate with the patient and staff.

Imaging Techniques

1 2 3 _____ Effectively set up automatic injector.

1 2 3 _____ Assist with positioning of patient for imaging sequences.

1 2 3 _____ Accurately identify equipment controls.

1 2 3 _____ Correctly identifies major arteries of the head and neck, the aorta and its main branches, major arteries of the upper and lower extremities.

Filming and Image Manipulation

1 2 3 _____ Correctly records, archives, and processes images.

1 2 3 _____ Identifies means by which images are presented to the radiologist for interpretation.

1 2 3 _____ Demonstrates an understanding of post-procedure care.

Comments: _____

_____

_____ _____

Student Angiography Supervisor

_____

Date

COMPUTED TOMOGRAPHY
CLINICAL OBJECTIVES

By the end of the one week CT rotation the student will be able to:

Preliminary Exam Preparation

Properly evaluate the requisition.

Demonstrate room readiness.

Accurately enter the patient information.

Patient Care and Handling

Demonstrate professionalism.

Identify the correct patient and introduce self.

Obtain history and provide examination instructions.

Assist patients on and off the table.

Communicate effectively with the patient and staff.

Scanning Techniques

Effectively set up IV system.

Demonstrate proper positioning of patient for brain, chest, and abdomen.

Accurately utilizes equipment controls.

Demonstrates speed and accuracy in scanning.

Correctly identifies basic anatomy for brain, chest, and abdomen.

Filming and Image Manipulation

Demonstrates proper image labeling and windowing.

Correctly records, archives and processes images.

Computed Tomography Checklist Student:_____

Please use this checklist to orientate the student to the CT environment.

Activity	Performed	Initial & Date
Department Information		
Identify department location		
Introduction to staff		
Explain patient scheduling and registration		
Discuss CT requisition		
Locate patient dressing area		
Review informed consent form		
Discuss patient history form		
Review patient prep		
Evaluate patient lab results as per hospital protocol		
Equipment & Scan Room		
Discuss scan room readiness		
Identify components of the equipment		
Locate important supplies (blankets, linens, IV supplies, etc.)		
Locate gantry		
Demonstrate gantry controls		
Perform couch movements		
Demonstrate how to change the head holder		
Locate contrast media injector		
Demonstrate filling the contrast media injector		
Identify and discuss contrast media used in the CT department		
Locate emergency crash cart, oxygen, and suction.		
Discuss procedure for calling a code.		
Review technologist control area		
Discuss keyboard / mouse functions		
Explain patient log		
Image Processing		
Demonstrate proper image recording and processing procedures		
Review image labeling and windowing		
Scanning Techniques		
Review examination protocols		
Explain patient positioning (brain, chest, abdomen)		
Identify basic anatomy (brain, chest, abdomen)		
Review CT clinical objectives and competency forms		

Computed Tomography Rotation Observation

Unacceptable = 1 Requires Improvement = 2 Acceptable = 3
By the end of the one week CT rotation the student will be able to:

Preliminary Exam Preparation

1 2 3 _____Properly evaluate the requisition.

1 2 3 _____Demonstrate room readiness.

1 2 3 _____Accurately enter the patient information.

1 2 3 _____Displays punctuality and dependability.

Patient Care and Handling

1 2 3 _____Demonstrate professionalism.

1 2 3 _____Identify the correct patient and introduce self.

1 2 3 _____Obtain history and provide examination instructions.

1 2 3 _____Assist patients on and off the table.

1 2 3 _____Effectively communicate with the patient and staff.

Scanning Techniques

1 2 3 _____Effectively set up IV system.

1 2 3 _____Demonstrate proper positioning of patient for brain, chest, and abdomen.

1 2 3 _____Accurately utilizes equipment controls.

1 2 3 _____Demonstrates speed and accuracy in scanning.

1 2 3 _____Correctly identifies basic anatomy for brain, chest, and abdomen.

Filming and Image Manipulation

1 2 3 _____Demonstrates proper image labeling and windowing.

1 2 3 _____Correctly records, archives, and processes images.

Comments: _____

_____

_____ _____ _____
Student CT Technologist Date

MAGNETIC RESONANCE IMAGING
CLINICAL OBJECTIVES

By the end of the one week MR rotation the student will be able to:

Preliminary Exam Preparation

Properly evaluate the requisition.

Demonstrate room readiness.

Accurately enter the patient information.

Patient Care and Handling

Demonstrate professionalism.

Identify the correct patient and introduce self.

Review screening form, obtain history and provide exam explanation.

Assist patients on and off the table.

Communicate effectively with the patient and staff.

Scanning Techniques

Effectively set up IV system if needed.

Demonstrate proper positioning of patient for head, lumbar, and knee.

Accurately utilizes equipment controls.

Demonstrates speed and accuracy in scanning.

Correctly identifies basic anatomy for head, lumbar, and knee.

Filming and Image Manipulation

Demonstrates proper image labeling and filming.

Correctly records, archives and processes images.

Magnetic Resonance Imaging Checklist **Student:**_____

Please use this checklist to orientate the student to the MRI environment.

Activity	Performed	Initial & Date
Department Information		
Identify department location		
Introduction to staff		
Explain patient scheduling and registration		
Discuss MR requisition		
Locate patient dressing area		
Explain tesla and gauss		
Review informed consent form		
Discuss patient history and screening forms		
Review patient prep		
Explain the hazards / risks associated with MRI		
Equipment & Scan Room		
Discuss scan room readiness		
Identify safety gauss lines		
Identify major components of the equipment		
Locate important supplies (blankets, linens, IV supplies, etc.)		
Review magnet and oxygen alarm systems		
Discuss types of coils and their uses		
Perform table movements		
Demonstrate how to change surface coils		
Locate contrast media injector		
Demonstrate filling the contrast media injector		
Identify and discuss contrast media used in the MR department		
Locate emergency crash cart, oxygen, and suction.		
Discuss procedure for calling a code.		
Review technologist control area		
Discuss keyboard / mouse functions		
Explain patient log		
Image Processing		
Demonstrate proper image recording and processing procedures		
Review image labeling and filming		

Scanning Techniques		
Review examination protocols		
Discuss pulse sequences and basic MR principles		
Explain patient positioning (brain, lumbar, knee)		
Identify basic anatomy (brain, lumbar, knee)		
Review MRI clinical objectives and competency forms		

Magnetic Resonance Imaging Rotation Observation

Unacceptable = 1 Requires Improvement = 2 Acceptable = 3
By the end of the one-week MR rotation the student will be able to:

Preliminary Exam Preparation

1 2 3 _____Properly evaluate the requisition.

1 2 3 _____Demonstrate room readiness.

1 2 3 _____Accurately enter the patient information.

1 2 3 _____Displays punctuality and dependability.

Patient Care and Handling

1 2 3 _____Demonstrate professionalism.

1 2 3 _____Identify the correct patient and introduce self.

1 2 3 _____Review screening form, obtain history and provide exam explanation.

1 2 3 _____Assist patients on and off the table.

1 2 3 _____Effectively communicates with the patient and staff.

Scanning Techniques

1 2 3 _____Effectively set up IV system if needed.

1 2 3 _____Demonstrate proper positioning of patient for head, lumbar, and knee.

1 2 3 _____Accurately utilizes equipment controls.

1 2 3 _____Demonstrates speed and accuracy in scanning.

1 2 3 _____Correctly identifies basic anatomy for head, lumber, and knee.

Filming and Image Manipulation

1 2 3 _____Demonstrates proper image labeling and filming.

1 2 3 _____Correctly records, archives, and processes images.

Comments: _____

_____

_____ _____ _____

Student Date MR Technologist

MRI Rotation Observation Form B

List four hazards/risks associated with MRI:

1. _____

2. _____

3. _____

4. _____

What is meant by a "pulse sequence"?

_____

_____

_____

List three different types of coils used in this MR department:

_____

_____

_____

Identify the three scan planes:

_____

_____

_____

Student _____ MR Technologist _____

Date _____

Mammography Rotation Checklist Student:_____

Please use this checklist to orientate the student to the mammography environment.

Activity	Performed	Initial & Date
Department Information		
Identify department location		
Introduction to staff		
Explain patient scheduling and registration		
Discuss requisition form		
Locate patient dressing area		
Discuss patient history form		
Review patient prep		
Explain patient identification methods		
Equipment		
Discuss room readiness		
Identify components of the equipment		
Locate important supplies (linens, supplies, etc.)		
Discuss skin markers		
Locate mammography units		
Demonstrate hand and foot controls		
Perform tube movements		
Demonstrate how to change the IR		
Discuss standard precautions used in mammography		
Review technologist control area		
Discuss control panel functions		
Explain patient log and processing		
Image Processing		
Demonstrate proper image recording and / or processing procedures		
Review image labeling and windowing (if applicable)		
Locate radiologist reading area		
Positioning Techniques		
Review examination protocols		
Explain patient positioning for CC and MLO		
Identify basic anatomy for CC and MLO		
Review mammography clinical objectives and competency forms		

Mammography Positioning Observation

Poor = 1 Average = 2 Excellent = 3 Not Applicable = NA
By the end of the one-week Mammography rotation the student will be able to:

CC – Craniocaudal

1 2 3 _____Determine proper IR (film) size.

1 2 3 _____Stand on medial side of the breast to be imaged.

1 2 3 _____Elevate inframammary fold to its maximum height, adjust height of IR accordingly.

1 2 3 _____Slightly rotate patient's head away from side being imaged.

1 2 3 _____Using both hands, gently pull breast onto IR, never release the breast.

1 2 3 _____Center breast over photocell, with nipple in profile (if possible).

1 2 3 _____With other hand, drape opposite breast over the corner of IR.

1 2 3 _____ Make sure shoulder is relaxed and ensures patient does not pull away.

1 2 3 _____Apply appropriate compression.

1 2 3 _____Move photocell to appropriate position.

1 2 3 _____Effectively communicate breathing / positioning instructions.

1 2 3 _____Identify anatomy demonstrated on the CC image.

1 2 3 _____Critique overall image quality.

MLO - Mediolateral Oblique

1 2 3 _____Determine proper IR (film) size.

1 2 3 _____Determine degree of obliquity and rotate IR accordingly (parallel to pectoral muscle).

1 2 3 _____Rotate C-arm so that long edge of IR is parallel to pectoral muscle.

1 2 3 _____Adjust tray height to a few inches below humeral head.

1 2 3 _____Lift arm up and over corner of IR, place corner of IR in axilla.

1 2 3 _____Lift breast UP and OUT opening up the IMF.

1 2 3 _____Apply appropriate compression.

1 2 3 _____Move photocell to appropriate position.

1 2 3 _____Effectively communicate breathing / positioning instructions.

1 2 3 _____Identify anatomy demonstrated on the MLO image.

1 2 3 _____Critique overall image quality

Comments: _____

_____

_____

Technologist Interview Questions

1. Why is it important to know if a patient has implants?

_____

_____

_____

2. What does this facility do differently for a patient with implants?

_____

_____

_____

3. Describe the different skin markers that are used and what they are for:

_____

_____

_____

4. What is the average kVp range for the CC and MLO positions?

CC _____

MLO _____

5. What additional views can be performed to get the nipple in profile if it is not visualized on the CC and MLO?

_____

_____

Student:_____
(Date)

Technologist:_____
(Date)