CHAMPLAIN COLLEGE
Radiography Program

STUDENT HANDBOOK

TABLE OF CONTENTS

INTRODUCTION

Welcome to the Radiography Program sponsored by Champlain College. Along with the college catalog and "The Rudder", this handbook will inform you of the way in which your education here will be delivered. It will point out the rules that you are expected to live by, your rights and responsibilities as a student, and the expectations you may have of your instructors.

Because of its connection with two affiliated medical centers, Fletcher Allen Health Care (and its three campuses) and Northwestern Medical Center, this program may, at times, have expectations different from those of other programs here at Champlain College. It is important for you to be aware of those expectations so that you may enter this field with a realistic idea of its nature.

Therefore, it *is important for you to read this handbook very carefully*. The sections outlining the clinical objectives will not be very meaningful to you until you start participating in clinical rotations. They should, however, point out to you the scope of the activities in which you will be engaged and the skills you will acquire before completion of the program. As you begin each clinical practicum, you will need to review these objectives to remind yourself of what will be expected of you.

Pay close attention to the policy statements as you will be expected to abide by these rules while you are in the program. You will be asked to sign the agreement at the back of the handbook affirming that you will abide by the policies.

This handbook will be informative for you at this point in your education. It should be available to serve as a reference for you, should you have any questions regarding policies or expectations at some point in the future. If you have questions about its contents, please feel free to ask.

ACCREDITATION

Programs in Radiologic Technology are accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). Champlain College has chosen to undergo this voluntary accreditation procedure in order to afford its students the best possible education in Radiography and to provide its graduates with the highest possible chances for a successful career. The *Standards* of the JRCERT are included in this handbook for your review. The most recent full accreditation was granted in 2000 for a period of eight years.

COLLEGE PHILOSOPHY

The primary mission of Champlain College is to prepare students for successful careers by creating a physical and intellectual environment in which they have freedom to grow and are challenged to realize their full potential. While special emphasis is placed on the development of professional competence, the following are also seen as essential components of the College's responsibility to its students: to inform and stimulate the mind; to develop character, personality and ethical conduct; and to provide creative outlets through supervised extracurricular activities.

Therefore, the College is dedicated to providing students with a variety of educational experiences that will encourage them to develop as individuals, to foster their understanding and appreciation of all people, and to gain career skills that will allow them to contribute to the personal and professional communities in which they live and work.

Program Mission Statement

The mission of the radiography program is to prepare graduates to perform the skills necessary to assume an entry-level position in radiography. As the student progresses through the program, academic instruction is replaced with increased clinical practice, facilitating a smooth transition to the work setting.

Program Philosophy

The philosophy of the Radiography Program is consistent with the philosophy of the college in preparing students for a career in Radiography. The goals of this program are to address growth in knowledge, development of a mature and positive attitude, building of professional skills, and motivation toward life long learning.

The program has been developed using a competency based model. This model begins with the identification of the skills required for job performance. The curriculum, each course, and each learning activity are then designed to enable the student to achieve those skills. In the hospital, once the student has proven competency in a given procedure, s/he is allowed to practice that skill in a realistic setting with only indirect supervision. This clinical education allows for an easier transition into the work setting.

The program strives to provide an educational environment that all students will find welcoming and encouraging for professional growth. We seek to foster independence and versatility in professional practice by providing experiences at varied clinical sites and with a diverse group of radiographers and faculty. We encourage formation of a cohesive student population through peer mentoring and collaborative work groups

when appropriate. We recognize that active involvement promotes learning and strive to provide classroom learning experiences that support that belief. We expect students to accept responsibility for their learning, conduct themselves ethically and professionally, and hold them accountable for their actions.

Program Goals

1. Enroll an appropriate number of qualified students each fall semester.
    a. Limit academic attrition from the program to 15% for each incoming class averaged over a 5-year period.
    b. Maintain an 85% course completion rate averaged over a 5-year period.
    c. 100% of students who graduate will have completed the program within 3 years of matriculation into the major.

2. Graduate students with the knowledge, skills, and attitudes necessary to obtain employment as a radiologic technologist.
    a. Student pass-rate on the ARRT examination at 90% on the first attempt and 100% within one year of completion of the program.
    b. Maintain a job placement rate averaging 75% employment in field at 6 months post-graduation over a 5-year period.

Student Learning Outcomes

Upon completion of the program, the student will demonstrate the following at the required performance level.

1. Anticipate and provide basic care and comfort.
2. Recognize emergency patient conditions and initiate first aid and CPR as indicated.
3. Educate the patient about radiologic procedures and services, including the appropriateness of indicators for the procedure.
4. Practice radiation protection for the patient, self and others.
5. Demonstrate knowledge of human structure, function and pathology.
6. Operate radiographic equipment and accessory devices.
7. Position the patient and imaging system to perform radiographic examinations and procedures on children and adults.
8. Determine exposure factors to obtain diagnostic quality radiographs with minimum radiation exposure based on knowledge of x-ray production and interactions.
9. Exercise independent judgment and discretion in the technical performance of medical imaging procedures consistent with uniform standards of care.
10. Demonstrate knowledge and skill relating to quality assurance by evaluating the performance of radiographic systems, safe operation of equipment and proper reporting of equipment malfunctions.

11. Evaluate medical images for technical quality.
12. Process radiographs.
13. Use non-verbal, oral and written medical communications in patient care and professional relationships.
14. Practice in accordance with the Code of Ethics and Scope of Practice for the profession.
15. Practice in accordance with OSHA safety regulations.
16. Operate computers as needed to accomplish the imaging, information management, and financial responsibilities of the radiographer.
17. Represent his/her educational background, goals, and professional skills to potential employers.

ADMISSIONS POLICIES

In addition to the general admission requirements of the College, the radiography major requires a minimum of one year of high school algebra and one year of a high school lab science each with a minimum grade of "C" as pre-requisites to admission. The student must also qualify for English Composition and complete a four-hour shadowing experience prior to enrollment. Preference is given to those students who have also had high school Chemistry, Physics, Biology, Geometry, and Algebra 2 and have achieved grades of "B" or better.

DEGREE REQUIREMENTS

To be eligible for the associate's degree, a student must meet all of the following requirements:

1. Earn at least 60 credit hours (30 of which must be earned from Champlain College).

2. Achieve an overall cumulative quality point average (CQPA) of at least 2.0 in courses completed at Champlain College, as well as the specific grade requirements for courses within the Radiography Program as stated in the college catalog.

3. Satisfy all requirements for the particular program selected.

4. Complete an "Intent to Graduate" form prior to enrolling for last-semester courses. Forms are available at registration or at the Student Services Office.

CURRICULUM

	FIRST YEAR	CREDITS
	First Semester	
ENG 111	Critical Reading & Expository Writing	3
SCI 220	Anatomy & Physiology I	4*
RAD 130	Radiographic Science I	3*
RAD 110	Introduction to Radiography	1*
CMS 140	Introduction to Allied Health	2*
RAD 120	Radiographic Procedures I	2*
RAD 121	Radiographic Procedures 1 Lab	1*
		16
	Second Semester	
ENG 112	Critical Reading & Expository Writing 2	3
SCI 225	Anatomy & Physiology II	4*
COM 130	Interpersonal Communication	3
RAD 190	Radiography Field Experience I	3*
RAD 150	Radiographic Procedures II	2*
RAD 151	Radiographic Procedures II lab	1*
		16
RAD 195	**15 WEEK SUMMER INTERNSHIP** *	
	SECOND YEAR	
	First Semester	
RAD 160	Radiographic Science 2	4*
	Computer Electives	2
RAD 290	Radiography Field Experience II	4*
RAD 250	Radiographic Procedures III	2*
RAD 251	Radiographic Procedures III Lab	1*
RAD 360	Radiographic Pathology	2*
		15
	Second Semester	
	Psychology/Sociology elective	3
RAD 340	Advanced Imaging Modalities	1*
RAD 295	Radiography Field Experience III	5*
RAD 350	Radiography Seminar	2*
RAD 330	Radiobiology	2*
		13

*** Courses must be completed with a grade of "C-" or better.**

REQUIRED TEXTBOOKS: 2006

1. Adler, Arlene M. and Carlton, Richard R. Introduction to Radiologic Sciences and Patient Care. 3rd edition, Saunders, 2003.

2. Carlton, Richard R. and Adler, Arlene M. Principles of Radiographic Imaging: An Art and a Science. 4th edition, Delmar, 2006.

3. Ballinger, Philip W. and Frank, Eugene D. Merrill's Atlas of Radiographic Positions and Radiologic Procedures. Mosby, 2003.

4. Hayes, Steven G., Sr. Radiographic Anatomy Positioning and Procedures Workbook. Mosby, 2003.

5. DeAngelis, Robert. The Integrated Radiography Workbook. Health and Allied Science Publishers, 2nd edition, 2001.

6. Mace, James D. and Kowalczyk, Nina. Radiographic Pathology for Technologists. 4th edition, Mosby, 2004

7. Miller, Michelle G. and Malinowski, Sarah G. Competency Procedure Evaluations and Film Evaluations.

8. LaFleur Brooks, Myrna. Exploring Medical Language. 6th edition, Elsevier, 2005

GRADING

MID-SEMESTER GRADES: In conjunction with frequent evaluations, the mid-semester grades help students know their level of progress.

Grade Achievement Standard

S "C" or better
U Passing but not satisfactory
F Not passing

SEMESTER GRADES: At each semester's end, faculty members submit to the Registrar a final grade for each student.

Grade Range	Achievement Standard		Quality Points per Credit Hour
A	93+	Outstanding Quality	4.0
A-	90-92		3.7
B+	87-89	High Level of Quality	3.3
B	83-86		3.0
B-	80-82		2.7
C+	77-79	Acceptable Level of Quality	2.3
C	73-76		2.0
C-	70-72		1.7
D+	67-69	Pass - Below Quality Expected	1.3
D	63-66		1.0
D-	60-62		0.7
F	59-below	Failing	0.0
W	.....	Withdrawn before seventh week	not computed
WF		Withdrawn/failing after seventh week	0.0
WP		Withdrawn/passing after seventh week	not computed
I		Incomplete	Not computed

INCOMPLETE POLICY:

In the event a student is unable to complete coursework on time due to medical illness or other outstanding circumstances the student must follow the following college procedure:

The student must print out the *Request for an Incomplete Grade* from the Advising and Registration webpage. Fill out the form and bring it to your instructor to have them sign the form and attach any supporting documentation. Once completed return form to the Advising and Registration Center.

CUMULATIVE QUALITY POINT AVERAGE (CQPA): A student's CQPA is calculated by multiplying the credit hours for each course by the quality point per credit hour of that course as determined by the final grade. For example, a three-credit hour course in which the student receives a "B" (three quality points per credit hour) will equal nine quality points for that course. The cumulative quality point average will then equal the total quality points divided by the total number of credit hours.

Radiography Program Grading Policy

Because the national certification exam that is required in many states for licensure (Vermont is among those states) has a minimum passing grade of 75 (Champlain equivalent of a **C**) the student must achieve a minimum grade of "C-" in all Radiography courses and Anatomy & Physiology. If the student receives a grade of D^{+} or lower in any Radiography course, s/he may not continue in the program. This student is eligible to re-apply to the program for the following year, but is not guaranteed acceptance back into the program. A student who receives a grade of "D+" or lower in Anatomy & Physiology may continue on in sequence, but will have to repeat this course and obtain the minimum required grade.

A student receiving grades of "C" consistently must be aware of the possibility of his/ her not being able to pass the required written certification examination.

TRANSFER POLICY

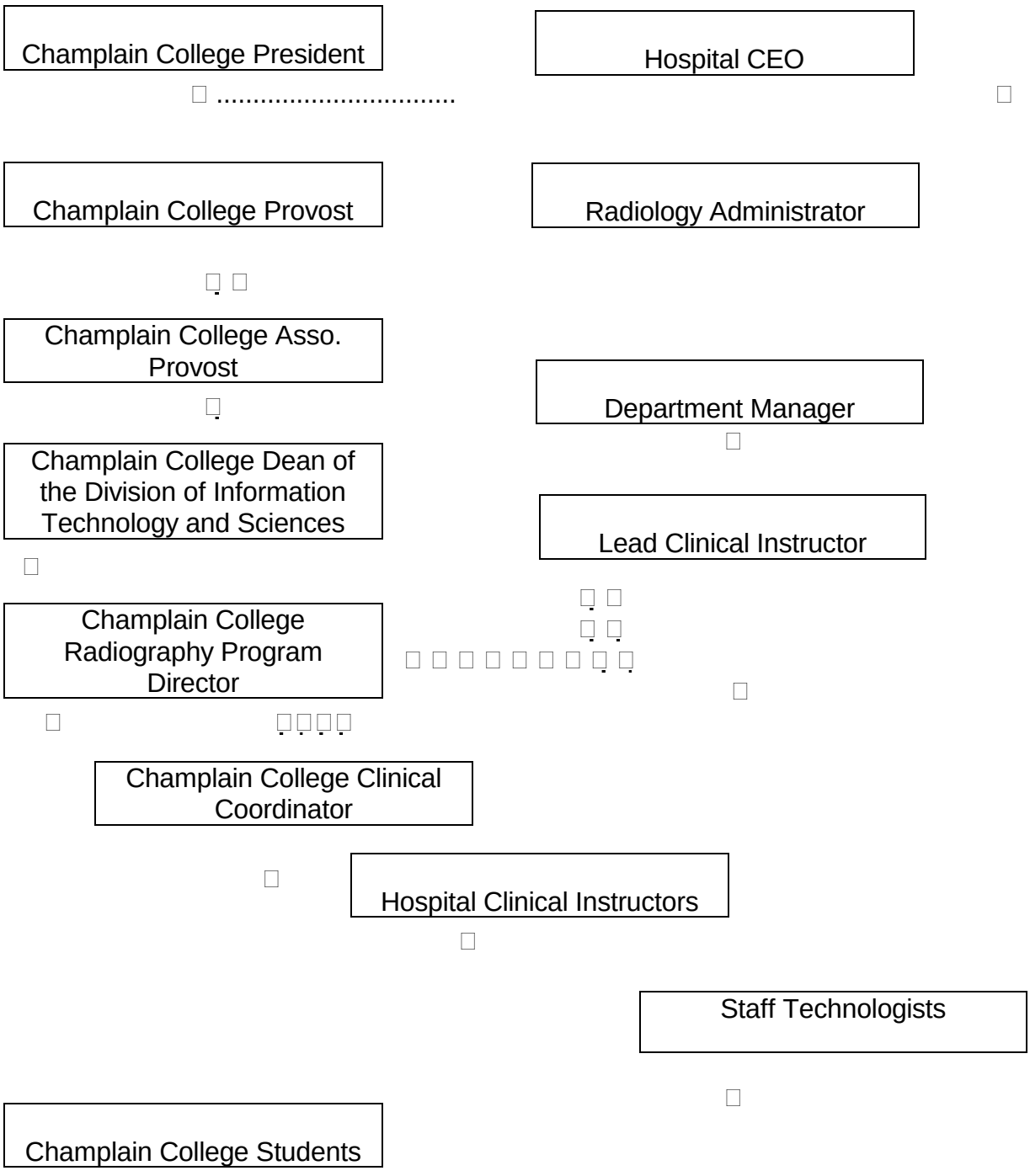
All applicants with prior college credits are required to submit an official transcript of high school and college records.

A student who transfers from another college may receive up to half of the required credit hours for a major, provided that similar required or elective courses are offered at Champlain College and that the student received a grade of "C" or better in the courses to be transferred. The decision of the Admissions Office regarding credit will be awarded based on criteria provided by the appropriate divisional dean.

Credit hours for transferred courses are given full value, but grades are not transferred to a student's Champlain College permanent record and do not become a part of a student's cumulative quality point average (CQPA) at Champlain College.

PROGRAM ORGANIZATION

I. Organizational Chart



II. Didactic

The didactic or classroom portion of the curriculum includes ten (10) radiography courses, five (5) liberal arts courses and Anatomy & Physiology. As the radiography and related courses prepare the student for the specific skills to be performed, the liberal arts courses give a depth to the curriculum which allows the student to expand personally, especially in the areas of communication and human relations. Because communication with others is such an important part of professional and community life, all courses are equally important to the radiography student.

III. Clinical

A. General outline

Students are allowed to participate in the performance of radiographic procedures with supervision. As the student progresses and proves certain levels of competency, the amount of supervision needed lessens. The following guidelines are established by the Joint Review Committee on Education in Radiologic Technology in regard to supervision of students:

"Until students achieve the program's required competency in a given procedure, all clinical assignments should be carried out under the **direct supervision** of qualified radiographers.

Indirect supervision is defined as that supervision provided by a qualified radiographer immediately available to assist students regardless of the level of student achievement."

Following are the parameters of **indirect supervision** as defined by the program:

1. The qualified radiographer reviews the request for examination in relation to the student's achievement;
2. The qualified radiographer evaluates the condition of the patient in relation to the student's achievement;
3. The qualified radiographer reviews and approves the radiographs.

In addition, **all repeat exposures and all exposures to pregnant patients must be made in the presence of a qualified radiographer**.

The clinical phase of the program is set up according to the following rotation schedule:

Clinical Rotations

Maximum of 15 students MCHV
Maximum of 2 students FAH
Maximum of 3 students UHC
Maximum of 3 students NMC

First Year/ First Semester

Orientation of one day each week for 6 weeks will be divided between the affiliation sites

First Year/ Second Semester

One-week room assignments
Four-week affiliation site assignments
During this semester, each student will be assigned to a maximum of 16 hours of evening (3:00 – 11:30 pm) clinical hours on the Medical Center campus of FAHC

Summer Internship

One-week room assignments
Four-week affiliation site assignments
During this time, each student will be assigned to a maximum of 48 hours of weekend clinical rotations, not to exceed 8 hours per day or 40 hours per week. Students will also be assigned to a maximum of 40 hours of evening (3:00-11:30 pm) clinical hours on the Medical Center campus of FAHC

Second Year/ First Semester

One-week room assignments
Four-week affiliation site assignments
During this semester, each student will be assigned to a maximum of 24 hours of evening (3:00 - 11:30 pm) clinical hours on the Medical Center campus of FAHC

Second Year/ Second Semester

One-week room assignments
Four-week affiliation assignments
During this semester, each student will be assigned to a maximum of 32 hours of evening (3:00 - 11:30 pm) clinical hours on the Medical Center campus of FAHC.

As stated, the radiography curriculum is a competency-based system. The clinical phase of education is particularly important and challenging in the competency model. Final competencies for the program are based on job tasks. Since clinical practica most closely simulate that work environment, it is logical that they are designed to accomplish the final competencies.

The structure and organization of the clinical practicum is based on the following:

1. Time requirements - Part of the concept of competency based education is that the amount of time spent in any one activity is based on the ability of the individual student to achieve competency. A pure competency model has no time constraints whatsoever. It is required, however, that the Radiography Program be based on a time period which allows reasonable accomplishment of competencies for most students. For this reason, clinical education is based on a 1700 hour plan.

2. Well rounded and equally distributed experience - Historically, students in radiography programs were "abused"; that is, they were required to perform menial tasks, work many shifts at odd hours, and work with the most difficult patients. There has been a successful movement to end this abuse of students. It is now commonplace to structure clinical practica to ensure that students get the needed experience in all areas of radiography and that all students in a program get approximately the same experience. Champlain College agrees with this philosophy and therefore, rotation schedules (samples of which are included in this handbook) are developed for all students in all semesters. Students will still perform all tasks, work weekends and evenings, and work with difficult patients, but in a quantity balanced with other critical skill areas.

3. Ensuring competency - The structured experience described above should allow each student to gain the amount of experience necessary to achieve the desired competencies. However, this must be evaluated to ensure that it has occurred. The student will undergo numerous evaluation measures in the three areas of learning; 1) knowledge, 2) attitudes, and 3) skill performance. The evaluation system used by Champlain College Radiography Program will be described in detail in another section of this handbook.

B. Specific clinical objectives

The following objectives describe for the student what is expected of him/ her in each clinical skill area as well as suggesting a time frame over which those should be accomplished. The suggested time frame is designed as a realistic plan for the average student. It is expected that there will be students who are both ahead of and behind this framework. The competency based system allows for individual

progression and adjustments will be made for those students working at a faster or slower pace than suggested. These specific clinical objectives may be revised as experience helps us to determine their accuracy.

UNIT I. ORIENTATION ROTATION

Upon completion of the orientation period, the student will be able to:

1. Identify by name and/or number the location and basic function of all radiographic rooms.
2. Identify the location of the following radiology support areas:
   a. reading room
   b. file room
   c. reception
   d. dressing rooms
   e. technologist station
   f. administrative offices
3. Identify the location of the following areas within the hospital:
   a. general patient care wards
   b. operating room
   c. specialty care units where applicable (SICU, MICU, ICN, ICU, CICU)
4. Explain all parts of a requisition and the information found there.
5. Identify the location of the following equipment/supplies:
   a. linen - clean and dirty
   b. urinals/bedpans/emesis basins
   c. crash cart
   d. oxygen and suction
   e. aprons, shields, and gloves
   f. sponges
   g. sliders
   h. image receptors/cassettes
6. Respond appropriately to the following emergency situations:
   a. fire (Plan Red or Code 62)
   b. cardiac arrest (Code 99)
   c. needs help with patient (emergency room call buttons)
7. Perform the following procedures in the rooms where the rotations have occurred:
   a. turn on machine
   b. warm-up tube
   c. make an exposure
   d. set basic controls necessary to make a correct exposure
8. Perform the procedures required for the processing of paperwork associated with a radiographic examination.
9. Prepare a cassette or image receptor for exposure and process the image

following exposure.
10. Locate and properly identify a patient for a radiographic examination.

METHOD: Unit Rotation Evaluation
COURSE: Introduction to Radiography (clinical segment)

UNIT II. PROCESSING OF IMAGES/RADIOGRAPHS

Upon completion of this clinical rotation, the student will be able to perform the following tasks in both a darkroom and daylight environment.

1. Correctly identify film/cassette sizes.
2. Correctly identify various screen types.
3. Use identification flasher properly.
4. Open cassette/film holder.
5. Remove film from cassette without damage to it or the intensifying screens.
6. Load film into an automatic processor correctly.
7. Wait for appropriate signal before processing another film or exposing to light.
8. Place film into cassette without damage to it or the intensifying screens.
9. Correctly identify various film types and their location.
10. Correctly reload film supply when needed.
11. If applicable, identify the location of and control for the safelight.
12. Monitor the work environment to ensure proper processing conditions.
13. Return cassette to proper storage area.

METHOD: Unit Rotation Evaluation
COURSE: Field Experience 2

UNIT III. PREPARATION OF THE PATIENT FOR EXAMINATION

Upon completion of this clinical skill area, the student will be able to:

1. Address a patient using socially acceptable titles.
2. Introduce oneself to the patient.
3. Assess the patient's ability to ambulate and meet the requests which will be made.

FOR OUTPATIENTS REQUIRING CHANGING:
4. Escort the patient to the appropriate changing area.
5. Provide the patient with the proper articles of clothing.
6. Correctly instruct the patient to remove necessary articles of clothing.

7. Instruct the patient as to where to place personal articles and what to do once they have changed.
8. Escort/transport the patient to the radiographic room.
9. Introduce patient to other persons in the room.
10. Instruct patient with regard to upcoming procedure according to your knowledge of that examination.
11. Assist the patient into the general position (recumbent, sitting, etc.) required for that examination.

METHOD: All competency exams
COURSE: Begin Field Experience 1

UNIT IV. RECEPTION

Upon completion of this clinical rotation, the student will be able to:

1. Answer the telephone identifying department and person speaking.
2. Transfer incoming calls to the appropriate extension.
3. Route phone calls to necessary persons in an acceptable manner.
4. Greet any person coming into the reception area.
5. Process a routine radiographic examination request.
6. Schedule procedures about which he/she has the required knowledge.
7. Locate a patient record in the appropriate filing system (computer or card).
8. Distribute patient preparations, following confirmation of appointment, with correct instructions about exam and prep.

METHOD: Unit Rotation Evaluation
COURSE: Orientation or Field Experience I - Fanny Allen

UNIT V. FILM LIBRARY

Upon completion of this clinical rotation, the student will be able to:

1. Identify color coding system.
2. Identify location of files according to chronology of the last examination completed and any other criteria used.
3. Locate specific file folders
4. File folders in the appropriate place.
5. File radiographic reports in appropriate folder.
6. Locate a report read results over the phone to the requesting physician if applicable.
7. Prepare films on alternators for physician interpretation.

METHOD: Unit Rotation Evaluation
COURSE: Orientation and Field Experience I (Spring) MC campus

UNIT VI. PATIENT TRANSPORTATION

Upon completion of this clinical rotation, the student will be able to:

1. Understand instructions to retrieve a patient for a radiographic examination.
2. Use the correct mode of transportation as required by patient condition.
3. Proceed to patient's hospital room.
4. Introduce oneself to the patient and inform them of your intentions.
5. Verify patient identification.
6. Assess the patient's physical condition and ability to assist with the transport.
7. Prepare all patient apparatus for transport.
8. Position and secure wheelchair or stretcher.
9. Using proper body mechanics and correct techniques, transfer patient to means of transport without endangering his/her well-being.
10. Cover patient to protect modesty.
11. Transfer all patient apparatus to the means of transport.
12. Transport the patient to the radiology department in a controlled manner.
13. Be attentive to the patient's requests during transport.
14. Monitor the patient's physical condition during transport.
15. Request nursing assistance if necessary.
16. Retrieve patient chart if required.
17. Follow appropriate procedures for informing nursing personnel of patient location.

METHOD: Unit Rotation Evaluation
COURSE: Orientation and Field Experience I (Spring)

UNIT VII. RADIATION PROTECTION PROCEDURES

Successful performance in this clinical skill area requires 100% accuracy in the following tasks:

1. Wear personnel monitors in the proper location at all times.
2. Interpret monthly film badge report.
3. Provide gonadal shielding for all patients when shielding will not obscure necessary diagnostic information.

4. Observe rules regarding student holding of patients.
5. Wear lead aprons when in the presence of ionizing radiation.
6. Wear lead gloves when hands are to be in, or in close proximity to, the primary beam.
7. Provide protective apparel for all persons who must remain in the radiographic room.
8. Ensure that only those persons necessary remain in the radiographic room.
9. When performing portable procedures, in addition to the above, ensure that the surrounding area is clear of all unprotected persons.
10. Question all females of child bearing age regarding the possibility of pregnancy.
11. Restrict the number of repeat exposures made.
12. Whenever possible, use technical factors which lessen the patient dose.
13. Use immobilization and essential communication to limit repeat exposures.
14. Close the doors to the radiographic room during all exposures.

METHOD: Unit Rotation Evaluation
COURSE: Summer Internship

UNIT VIII. ROOM RESPONSIBILITIES

During all clinical rotations, the student will perform the following in the radiographic room to which he/she is assigned:

1. Complete the equipment checklist with 100% accuracy.
2. Reboot the CR unit and initial
3. Stock plastic jackets.
4. Check lock on red med box on counter, and initial in yellow folder.
5. When CR is ready, reboot “clients” and perform secondary erasure on cassettes
6. Retrieve IVU schedule from front desk
7. Prepare your room(s) each morning and afternoon
8. Change linen between patients, stock and call for additional linen as needed.
9. Perform room warm-ups as appropriate.
10. Perform the Digital Diagnost Restart Procedure for room 14 and initial
11. Call up daily worklist for room 14.
12. Assure timely disinfection of rooms and equipment.
13. Ensure the safety of all equipment and accessories used.
14. Report equipment malfunctions to the proper person.

METHOD: Unit Rotation Evaluation
COURSE: Summer Internship

UNIT IX. PATIENT CARE

Upon completion of the clinical experience, the student will be able to:

1. Respond to the emotional, psychological, and physical needs of the patient in a helpful and acceptable manner.
2. Monitor the function of all apparatus which are being used by patient for his/her care.
3. Administer basic first aid and respond to medical emergencies in an appropriate fashion as required by the patient condition.
4. Monitor a patient's vital signs as required by the patient condition.
5. Practice proper universal or specialty precautions.

METHOD: Affective Evaluation
COURSE: All Clinical Practicum

UNIT X. GENERAL DIAGNOSTIC

Upon completion of the general diagnostic clinical rotations, the student will be able to perform the following on the non-trauma patient:

1. Identify radiographic rooms which are used for general radiography.
2. In each of those rooms, complete the equipment checklist with 100% accuracy.
3. Maintain a clean and neat working environment as described in the room responsibilities objectives.
4. Demonstrate proper patient care and radiation protection procedures as described in the objectives at all times.
5. Process images/radiographs taken.
6. Complete necessary processing of paperwork and images.
7. Complete the following radiographic procedures with 85% accuracy without assistance:

KEY TO CODES
1 Field Experience 1 eligible competency
2 Field Experience 2 eligible competency
S Summer Internship eligible competency
* Exam which is likely to be evaluated by simulation

Abdomen series - 1
*AC joints - 1
Ankle - 1

Cervical Spine - 1
Chest - 1
Clavicle - 1
Elbow - 1
*Facial Bones - S
Femur - 1
Finger -1
Foot - 1
Forearm - 1
Hand - 1
Hip - 1
Humerus - 1
Knee -1
KUB - 1
Lumbar Spine w/obliques -1
*Mandible - S
*Nasal Bones - S
*Orbits - 2
Os Calcis - 1
Pelvis - 1
Ribs - 1
*Sacrum/Coccyx - 1
*Scapula - 1
Shoulder -1
Sinuses - 2
Skull - S
*Sternum - 1
Thoracic Spine - 1
Thumb - 1
Tibia/Fibula - 1
Toe - 1
Wrist - 1

8. Critique the resulting images for acceptable quality with minimal assistance.
9. Identify anatomy and basic pathology seen on each image.

The student is expected to progress through these objectives at approximately the following pace:

<u>FIRST YEAR/ FIRST SEMESTER</u>

1. Complete objectives # 1, 3, 4, 5, and 6.
2. Assist to the highest degree possible in all exams.

FIRST YEAR/ SECOND SEMESTER

1. Complete objectives #1, 2, 3, 4, 5, and 6.
2. Complete objectives # 7, 8, and 9 with the required 85% accuracy in as many procedures designated "1" as possible (A minimum of 10 is required).
3. Assist to the highest degree possible with all examinations.

SUMMER INTERNSHIP

1. Complete objectives # 1, 2, 3, 4, 5, and 6.
2. Complete objectives # 7, 8, and 9 with the required accuracy in as many procedures as possible. No more than 4 procedures designated "1" should remain except those identified as simulations. By this time, 50% of procedures designate "S" should be completed (not including those identified as simulations).
3. Assist to the highest degree possible with those examinations designated "1" and "S."

SECOND YEAR/ FIRST SEMESTER

1. Complete objectives # 1, 2, 3, 4, 5, and 6.
2. Complete objectives # 7, 8, and 9 for all "1" and "S" procedures and as many procedures designated "2" as possible.
3. Assist to the highest degree possible with all examinations.

SECOND YEAR/ SECOND SEMESTER

1. Complete objectives # 1, 2, 3, 4, 5, and 6.
2. Complete objectives # 7, 8, and 9 for all general diagnostic procedures either through patient examination or simulation.

METHOD: Equipment Checklist, Procedure Competency Evaluation, and Affective Evaluation

COURSE: See above

UNIT XI. EMERGENCY RADIOGRAPHY

Upon completion of the emergency room clinical rotations, the student should be able to perform the following on the trauma patient:

1. Complete the equipment checklist with 100% accuracy for the room(s) used for emergency radiography.
2. Maintain a clean and neat working environment as described in the room responsibilities objectives.

3. Demonstrate proper patient care and radiation protection procedures as described in the objectives at all times.
4. Process images/radiographs taken.
5. Complete necessary processing of paperwork and images.
6. Complete the radiographic procedures outline in the general diagnostic radiography unit with 85% accuracy without assistance.
7. Adapt standard positions/procedures to the trauma patient.
8. Critique the resulting images for acceptable quality with minimal assistance.
9. Demonstrate organizational skills such that procedures on trauma patients are completed with minimal movement and in the shortest possible time.
10. Identify anatomy and basic pathology seen on the resulting images.

The student is expected to progress through these objectives at approximately the following pace:

FIRST YEAR/ FIRST SEMESTER

1. Complete objectives # 2, 3, and 4.

FIRST YEAR/ SECOND SEMESTER

1. Complete objectives # 1, 2, 3, 4, and 5.
2. Assist to the highest degree possible with all examinations, working toward independence in routine exams of the extremities.

SUMMER INTERNSHIP

1. Complete objectives # 1, 2, 3, 4, and 5.
2. Complete objectives # 6, 7, 8, 9, and 10 with the required 85% accuracy for all extremity and spine exams except those occurring rarely.
3. Assist to the highest degree possible with all examinations, working toward independence in trauma exams of the extremities.

SECOND YEAR/ FIRST SEMESTER

1. Complete objectives # 1, 2, 3, 4, and 5.
2. Complete objectives # 6, 7, 8, 9, and 10 with the required 85% accuracy for all spine exams.
3. Assist to the highest degree possible with all examinations, working toward independence in trauma exams of the extremities and spine and portables.

SECOND YEAR/ SECOND SEMESTER

1. Complete all objectives remaining.
2. Assist to the highest degree possible with all examinations, working toward independence in multi-trauma examinations.

METHOD: Equipment Checklist, Procedure Competency Evaluation, and Affective Evaluation

COURSE: See above

UNIT XII. FLUOROSCOPY RADIOGRAPHY

Upon completion of the fluoroscopy clinical rotations, the student will be able to perform the following:

1. Complete the equipment checklist with 100% accuracy in each room used for fluoroscopy.
2. Maintain a clean and neat working environment as described in the room responsibilities objectives.
3. Demonstrate proper patient care and radiation protection procedures as described in the objectives at all times.
4. Process images/radiographs taken.
5. Complete necessary processing of paperwork and images.
6. Prepare contrast materials with the proper material and consistency.
7. Explain the procedure to the patient in lay terms.
8. Assist the fluoroscopist to perform the fluoroscopy procedures in the manner expected.
9. Perform the after filming procedures for the following examinations with the required 85% accuracy without assistance:

Full Column Barium Enema	Myelogram
Barium Enema (Air)	Esophagus
Small Bowel	Upper GI Scout
Upper GI Series	Arthrogram

10. Critique the resulting radiographs for acceptable film quality with minimal assistance.
11. Identify anatomy and basic pathology seen on the resulting radiographs.

The student is expected to progress through these objectives at approximately the following pace:

FIRST YEAR/ FIRST SEMESTER

1. Complete objectives # 2, 3, and 4.
2. Assist to the highest degree possible with all examinations.

FIRST YEAR/ SECOND SEMESTER

1. Compete objectives # 1, 2, 3, 4, 5, 6, 7, and 8.
2. Complete objectives # 9, 10, and 11 with the required 85% accuracy for

the UGI scout and series examinations.
3. Assist to the highest degree possible with all examinations.

SUMMER INTERNSHIP
1. Complete objectives # 1, 2, 3, 4, 5, 6, 7, and 8.
2. Complete objectives # 9, 10, and 11 with the required 85% accuracy for all routine fluoroscopic examinations.
3. Assist to the highest degree possible with the remaining examinations.

SECOND YEAR/ FIRST SEMESTER
1. Complete objectives # 1, 2, 3, 4, 5, 6, 7, and 8.
2. Complete objectives # 9, 10, and 11 with the required 85% accuracy for all routine and as many specialty examinations as possible.
3. Assist to the highest degree possible with all fluoroscopic procedures.

SECOND YEAR/ SECOND SEMESTER
1. Complete all objectives remaining.
2. Assist to the highest degree possible with all fluoroscopic procedures, working toward independent operation of a fluoroscopic room.

METHOD: Equipment Checklist, Procedure Competency Evaluation, and Affective Evaluation

COURSE: See above

UNIT XIII. PORTABLE AND SURGICAL RADIOGRAPHY

Upon completion of the portable and surgical clinical rotations, the student will be able to perform the following:

1. Complete the equipment checklist with 100% accuracy for each mobile radiographic and fluoroscopic unit.
2. Demonstrate proper patient care and radiation protection procedures as described in the objectives at all times.
3. Process images/radiographs taken.
4. Complete necessary processing of paperwork and images.
5. Manipulate portable equipment into the proper position efficiently.
6. Correctly identify the location of all patient wards/rooms and surgical suites.
7. Move patients and equipment as required in a manner which does not compromise their safety or disrupt the operation of any treatment apparatus to which the patient may be connected.
8. In the surgical suite, manipulate equipment and accessories without contamination of the sterile field.

9. Position the patient for portable examinations to obtain image quality as close to standard procedures as is possible.
10. Perform the following portable/surgical procedures with the required 85% accuracy without assistance:

    Portable Chest (adult) Portable Chest (neonatal intensive care unit)
    Portable Extremity or Spine Portable Abdomen
    Abdominal/Thoracic Fluoroscopy in OR Operative Cholangiogram
    Operative Extremity or Spine Orthopedic Fluoroscopy in OR

11. Critique the resulting images for acceptable quality with minimal assistance.
12. Identify anatomy and basic pathology seen on the resulting images.

The student is expected to progress through these objectives at approximately the following pace:

FIRST YEAR/ FIRST SEMESTER
1. Complete objectives # 2, 3, 4, and 7.
2. Assist to the highest degree possible with all portable/OR examinations.

FIRST YEAR/ SECOND SEMESTER
1. Complete objectives # 1, 2, 3, 4, 5, 6, and 7.
2. Assist to the highest degree possible with all portable/OR examinations.

SUMMER INTERNSHIP
1. Complete objectives # 1, 2, 3, 4, 5, 6, 7, and 8.
2. Complete objectives # 9, 10, 11, and 12 with the required 85% accuracy for both portable and OR procedures.
3. Assist to the highest degree possible in all portable and surgical examinations.

SECOND YEAR/ FIRST SEMESTER
1. Complete objectives # 1, 2, 3, 4, 5, 6, 7, and 8.
2. Complete objectives # 9, 10, 11, and 12 with the required 85% accuracy for 2 surgical exams and remaining portable exams.
3. Assist to the highest degree possible in all portable and surgical examinations.

SECOND YEAR/ SECOND SEMESTER
1. Complete objectives # 1, 2, 3, 4, 5, 6, 7, and 8.
2. Complete objectives # 9, 10, 11, and 12 with the required 85% accuracy for all required procedures.
3. Assist to the highest degree possible in all portable and surgical

examinations.

METHOD: Equipment Checklist, Procedure Competency Evaluation, and Affective Evaluation

COURSE: See above

UNIT XIV. IVP/ UROLOGY

Upon completion of the IVP/ Urology clinical rotations, the student will be able to perform the following:

1. Identify the radiographic rooms which are used for IVP and urologic examinations.
2. In each of these rooms, complete the equipment checklist with 100% accuracy.
3. Maintain a clean and neat working environment as described in the room responsibilities objectives.
4. Demonstrate proper patient care and radiation protection procedures as described in objectives at all times.
5. Process images/radiographs taken.
6. Complete necessary processing of paperwork and images.
7. Prepare contrast media for use in the examination.
8. Take the required medical history of the patient.
9. Explain the procedure to the patient in lay terms.
10. Complete the intravenous urography procedure with 85% accuracy without assistance.
11. Critique the resulting images for acceptable quality with minimal assistance.
12. Identify anatomy and basic pathology seen on the resulting images.

The student is expected to progress through the objectives at approximately the following pace:

FIRST YEAR/ FIRST SEMESTER

1. Complete objectives # 1, 3, 4, and 5.
2. Assist to the highest degree possible in all urologic examinations.

FIRST YEAR/ SECOND SEMESTER

1. Complete objectives # 1, 2, 3, 4, 5, 6, 7, 8, and 9.
2. Complete objectives # 10, 11, and 12 with the required 85% accuracy for the IVU examination.
3. Assist to the highest degree possible in all urologic examinations.

SUMMER INTERNSHIP
1. Complete all objectives remaining.
2. Assist to the highest degree possible in all urologic examinations.

SECOND YEAR/ FIRST SEMESTER
1. Complete all objectives remaining.
2. Assist to the highest degree possible in all urologic examinations.

SECOND YEAR/ SECOND SEMESTER
1. Complete all objectives remaining.
2. Assist to the highest degree possible in all urologic examinations.

METHOD: Equipment Checklist, Procedure Competency Evaluation, and Affective Evaluation

COURSE: See above

UNIT XV. MAMMOGRAPHY

Upon completion of the mammography clinical observation, the student will be able to perform or describe the following:

1. Complete the equipment checklist for the mammographic unit(s) with 100% accuracy.
2. Attend to the special patient care needs of the mammography patient.
3. Critique the resulting images for acceptable image quality with minimal assistance.
4. Identify anatomy and basic pathology seen on the resulting images.
5. Describe daily quality control procedures.

The student is expected to progress through these objectives at approximately the following pace:

FIRST YEAR/ FIRST SEMESTER
no scheduled rotations

FIRST YEAR/ SECOND SEMESTER
No scheduled rotations

SUMMER INTERNSHIP
no scheduled rotations

METHOD: Classroom instruction and evaluation, and observation of procedure

Equipment Checklist and Image Evaluation
COURSE: Field Experience II (Fall) or III (Spring)

UNIT XVI. ANGIOGRAPHY

Upon completion of the special procedures clinical rotation, the student will be able to perform the following:

1. Identify the radiographic rooms which are used for each of the special procedures.
2. In each room, complete the equipment checklist with 100% accuracy.
3. Maintain a clean and neat working environment as described in the room responsibilities objectives.
4. Demonstrate proper patient care and radiation protection procedures as described in the objectives at all times.
5. Observe the rules of surgical asepsis and sterile technique.
6. Process radiographs taken.
7. Complete necessary processing of paperwork and films.
8. Explain the radiographic procedures to be performed using lay terms.
9. Operate accessory equipment (injectors and filming mechanisms) with minimal assistance.
10. Assist with positioning and technique selection for the routine radiographic projections.
11. Analyze the resulting radiographs for acceptable film quality, anatomy, and basic pathology.

METHOD: Unit Rotation Evaluation
COURSE: Field Experience II (Fall) or III (Spring)

UNIT XVII. TOMOGRAPHY

Upon completion of the tomography clinical rotation, the student will be able to perform the following:

1. Complete the equipment checklist in the tomography room(s) with 100% accuracy.
2. Identify the effect seen on the resultant radiograph from each of the tomographic controls.
3. Choose the proper tomographic conditions for a given procedure.
4. Maintain a clean and near working environment as described in the room responsibilities objectives.
5. Demonstrate proper patient care and radiation protection procedures as

described in the objectives at all times.
6. Process images taken.
7. Complete necessary processing of paperwork and images.
8. Assist with positioning and technique selection for tomographic procedures.
9. Change tomographic level between radiographic exposures.
10. Analyze the resulting images for acceptable image quality and anatomy and basic pathology demonstrated.
11. Perform tomographic evaluation with 85% accuracy without assistance.

METHOD: IVU competency exam
COURSE: Summer Field Experience or Field Experience 2

UNIT XVIII. PEDIATRIC RADIOGRAPHY

Upon completion of this area of clinical experience, the student will be able to:

1. Maintain a clean and neat working environment as described in the room responsibilities objectives.
2. Demonstrate proper patient care and radiation protection procedures as described in the objectives at all times.
3. Process images taken.
4. Complete necessary processing of paperwork and images.
5. Attend to the special emotional and psychological needs of the pediatric patient.
6. Ensure the safety and security of the pediatric patient throughout the examination.
7. Adapt routine radiographic procedures to the pediatric patient.
8. Use specialized pediatric immobilization devices properly.
9. List and describe radiographic procedures specifically designed for pediatric patients.
10. Complete the following procedure with the required 85% accuracy without assistance:

    Piggostat chest

11. Analyze the resultant images for acceptable quality and anatomy and basic pathology demonstrated.

METHOD: Procedure Competency Evaluation, Affective Evaluation, and Unit Rotation Evaluation
COURSE: Clinical Practica II - III, including Summer Internship

UNIT XIX. COMPUTERIZED TOMOGRAPHY

Upon completion of the computerized tomography rotation, the student will be able to:

1. Prepare patient for CT examinations.
2. Assist the technologist to the highest degree possible with positioning of patients for CT examinations.
3. Explain the practical applications of the terms window, level, and CT number.
4. Identify basic anatomy seen in the transverse dimension.
5. Interpret basic functions of the software and hardware of the CT system.
6. Identify indications for CT examinations which make particular exam preferable to the corresponding radiographic procedure.
7. Process images taken.

METHOD: Unit Rotation Evaluation
COURSE: Field Experience III (Spring)

UNIT XX. ULTRASOUND

Upon completion of the ultrasound clinical rotation, the student will be able to:

1. Prepare patients for ultrasound examinations.
2. Identify basic anatomy in the longitudinal and transverse dimensions.
3. Identify areas of echo production and absorption on the CRT and/or film.
4. Explain how various body tissues react with sound waves to produce their characteristic images.
5. Identify indications for ultrasound examinations which make particular exams preferable to the corresponding radiographic procedure.
6. Process images taken.

METHOD: Unit Rotation Evaluation
COURSE: Field Experience III (Spring)

UNIT XXI. MRI

Upon completion of the MRI clinical rotation, the student will be able to:

1. Describe basic differences between MRI and radiographic imaging.
2. State at least 3 contraindications for performing an MRI exam.
3. State what differences exist between MRI and radiographic contrast media

4. Name 3 equipment elements of an MRI unit.

METHOD: Unit Rotation Evaluation
COURSE: Field Experience III (Spring)

UNIT XXII. NUCLEAR MEDICINE TECHNOLOGY

Upon completion of the Nuclear Medicine Technology unit, the student will be able to:

1. Define a radiopharmaceutical and state how it is used in Nuclear Medicine
2. Describe the difference between a gamma camera and an x-ray unit
3. Locate each imaging room of the department and identify 1 exam done in each.
4. List 2-3 indications for performing a cardiolite stress test.

METHOD: Unit Rotation Evaluation
COURSE: Field Experience III (Spring)

UNIT XXIII. EVENING AND WEEKEND ROTATIONS

Upon completion of the weekend and evening rotations, the student will be able to:

1. Compare and contrast the operation of the radiography department on weekends and evenings to its operation during weekday work hours.
2. Be responsible for the complete processing and performance of a radiographic procedure from the time the request for the exam is received until the images are to be read and the patient is dismissed.
3. Perform routine radiographic procedures on severely traumatized patients.
4. Perform multiple radiographic procedures in an organized and efficient manner
5. Adapt routine radiographic procedures to non-routine patient conditions.
6. Perform a greater percentage of the uncommon radiographic exams than previously capable of.
7. Work more independently and responsibly in the radiology department.
8. Perform a greater percentage of orthopedic examinations than previously capable of.

The student is expected to progress through these objectives at approximately the following pace:

FIRST YEAR/ FIRST SEMESTER

1. Complete objectives # 1 and 2.

FIRST YEAR/ SECOND SEMESTER

1. Complete objectives #1 and 2. Observation of #3 should begin as working toward the trauma check-off which is done in the summer.

SUMMER INTERNSHIP

1. Complete objectives # 1, 6, 7, and 8. (Goals for objectives 6 and 8 should be to perform one more exam in each area than previously capable of.)
2. Assess one's abilities in objective # 2 and obtain experience in the necessary area(s).
3. Assist to the highest degree possible toward achieving objectives 3, 4, and 5, observing the supervising technologist's actions as an example.

SECOND YEAR/ FIRST SEMESTER

1. Complete objectives # 1, 2, 6, 7, and 8. (Goals for objectives 6 and 8 should be to perform one more exam in each area than previously capable of.)
2. Perform multiple exams involving the extremities and spine in an organized and efficient manner with minimal assistance.
3. Adapt routine extremity and spine procedures to non-routine patient conditions with minimal assistance.
4. Perform routine examinations of the extremities and spine on severely traumatized patients with minimal assistance (this would include cross-table laterals in these areas).

SECOND YEAR/ SECOND SEMESTER

1. Complete objectives # 1, 2, 6, 7, and 8. (Goals for objectives 6 and 8 should be to perform one more exam in each area than previously capable of.)
2. Complete objectives # 3, 4, and 5 in all body areas with minimal assistance.

METHOD: Procedure Competency Evaluation and Affective Evaluation
COURSE: Summer Internship and Clinical Practica II (Fall) and III (Spring)

UNIT XXIV. PROCEDURAL OBJECTIVES

For each required radiographic procedure, the student will:

1. Display proper organization of material and equipment.
2. Use the correct film/screen size and combination.
3. Use radiation protection procedures.
4. Use correct student, right or left and accessory markers.
5. Determine whether or not to use a grid/bucky mechanism.
6. Explain the examination to the patient in lay terms.
7. Use correct source image distance.
8. Use correct collimation.
9. Set technical factors correctly.
10. Correctly position patient.
11. Correctly position body part.
12. Center x-ray beam.
13. Align image receptor/beam/part.
14. Expose at proper respiratory phase.
15. Review requisition to determine procedure required.
16. Evaluate patient condition to determine necessity of procedural changes.
17. Make the exposure while observing patient.

METHOD: Procedure Competency Evaluation
COURSE: All Clinical Practica

UNIT XXV. READING ROOM

Upon completion of the reading room clinical rotation, the student will be able to:

1. For the following common examinations, identify anatomy and technical quality necessary for physician interpretation of the radiographic procedure:

    a. chest (routine, pediatric, and portable)
    b. elbow
    c. knee
    d. lumbosacral spine
    e. UGI
    f. IVP
    g. barium enema
    h. sinuses

2. Explain the legal implications of which the radiologist must take note when dictating the results of a radiographic procedure.
3. State and describe the radiographic appearance of a common pathological condition seen in each procedure named in # 1.
4. List common positioning and technical errors made by radiographers for each procedure named in # 1.
5. Describe the role of the radiologist in relation to the technologist, staff physician, patient, and hospital.
6. Communicate with the radiologist in a professional manner regarding technical, procedural, and pathological information.

METHOD: Unit Rotation Evaluation
COURSE: Field Experience III (Spring)

UNIT XXVI. QUALITY ASSURANCE

Upon completion of the quality assurance clinical rotation(s), the student will be able to:

1. Perform daily sensitometric procedures for processor control.
2. Use troubleshooting chart to determine cause of irregular sensitometric readings.
3. Perform other daily quality control procedures for the processor.
4. Assist in the performance of daily retake analysis.
5. Take the necessary actions for the following processing malfunctions:
   a. improperly loaded cassette
   b. double loaded cassette
   c. film stuck in unloader
6. Monitor the processing environment including function, developer and dryer temperatures, and solution levels throughout the day.
7. Identify proper functioning of the silver recovery unit.
8. Identify artifact in cassette and the method of determining which cassette is involved.
9. Assist in processor cleaning
10. Use proper procedure for reporting and recording equipment malfunctions.

METHOD: Unit Rotation Evaluation
COURSE: Field Experience III (Spring)

UNIT XXVII. PATIENT EDUCATION and COMMUNICATION

Upon working in various clinical settings and situations, the student will be able to:

1. Define communication.
2. Identify methods of communication and discuss how each can be utilized in patient education.
   a. verbal
   b. non-verbal
   c. patient interaction techniques
      -reducing distance
      -listening
      -therapeutic silence
      -restating and reflecting
      -observation
3. Identify patient communication problems and discuss how each can be overcome to provide patient education.
   a. language, hearing and vision
   b. impaired mental function, stress
   c. children, adolescents and geriatric patients
   d. cultural diversity, colloquialism, slang and jargon
   e. artificial and difficult speech
4. Given clinical situations provide explanations of radiographic examinations.
   a. positioning
   b. procedure
   c. communication systems
   d. machine movement and contact with patient
   e. auxiliary equipment and immobilization
5. Given clinical simulations, demonstrate explanations for patients with various communication problems.
6. Discuss radiation safety and protection questions patients might ask in connection with radiologic examinations and the radiographer response to each.
7. Given specific patient conditions and profiles, analyze the moods, expectations, and perceptions of the technologist-patient relationship.

METHOD: Introduction to Radiography course
Field Experience courses
Communications sessions during Procedures 3

COURSE: Procedures 3, Field Experience Courses

AFFECTIVE OBJECTIVES

1. COMPREHENSION OF PROCEDURES

The primary piece of information which must be interpreted for any procedure is the examination requisition. Initially, the student should evaluate the validity of the order according to the protocol established for the particular clinical education center. Secondly, the examination ordered and the patient history provided should be evaluated to determine the correct views to be taken based on the patient history; additionally, the patient history may indicate the degree of supervision which will be required for the student to perform the examination. These should be done in consultation with a registered technologist. Questions which arise that cannot be answered by the technologist should be directed to the referring physician or attending radiologist. The biographical information provided on the requisition should be verified with the patient at the onset of the examination. Any missing information should be obtained from the patient and/or referring physician. Initially, the requisition should be examined for any discharge instructions (stat interpretation, send films with patient, etc.) and films and paperwork checked with the registered technologist before discharging the patient.

The student's responsibilities during the examination are many and varied. They are described in brief behavioral terms in the patient care, patient communication, room responsibilities and procedural sections of the specific clinical objectives. In addition, all procedures require careful consideration of patient discharge and film distribution as well as attention to record keeping requirements. These procedures are the responsibility of the student in consultation with the supervising registered technologist.

Some procedures hold additional responsibilities for the student in that they involve the use of contrast media and/or fluoroscopy. In these procedures, the student is responsible for the preparation of the contrast media and for assisting with its administration under the direct supervision of a radiologist, radiology resident, radiology nurse, or registered technologist depending on the specific procedure. When this duty is required, the student must perform contrast preparation and administration following accepted practices for material identification and dosage, sterile/aseptic guidelines, and disposal of equipment, supplies, media, and containers as identified by the clinical education center. In assisting the fluoroscopist with procedures, the student is responsible for all of the normally required tasks identified in the first paragraph as well as serving as a direct assistant to the fluoroscopist and liaison to the patient. The student should assist the fluoroscopist with equipment set-up and manipulation, filming, administration of contrast media, patient instructions, record keeping, and patient discharge. Open

communication between the student and fluoroscopist regarding expectations and procedure are essential to successful completion of the procedure.

Procedures are taught in the classroom and practiced in the laboratory based on widely accepted and practiced protocols. These protocols may not meet the needs of each clinical education center. Therefore, the student must identify the protocol requirements at each site upon arrival at the site. It is because of these site differences that all levels of supervision require that requisitions be checked with a registered technologist before proceeding with the examination. During a particular rotation, the student should work toward committing protocol to memory and should identify differences immediately when changing sites. It is preferred that the student use departmental procedure manuals as the primary reference in determining protocol and then confirm with a staff radiographer if necessary.

Materials associated with procedure performance are considered to be contrast media and the supplies required for their administration and those required for delivery of patient care. The student should be able to select and prepare contrast media for the procedure and assist with its administration. To meet these criteria the student needs to know the location of the media, which media should be used, proper dilution or mixing of media, sterile/aseptic technique required for preparation and the protocol for administration of the media. The student should perform these tasks as much as possible from memory and should know where appropriate references are located in case of question. Additionally, communication with the individual administering the contrast media is advised when questions arise. Patient care equipment includes tape, slider boards, sponges, emesis basins and other supplies. Students should know the location of these supplies as well as proper cleaning, disposal, and storage of them.

With three clinical education centers, more than twenty different stationary and mobile radiographic/fluoroscopic units, equipment operation can be a difficult and often confusing task for the student. These varied machines are best approached from the perspective of similarities and differences. All control panels, tubes and tables have similar controls and characteristics; one must first identify what variables/controls need to be present and then determine how they operate on a particular piece of machinery. Then one must look for any special functions that the machine may be capable of. In any situation, the student must operate equipment with safety considerations for patient and self receiving a high priority.

Imaging equipment operation also requires the use of screens, films, grids, cones, filters and processors in the creation of radiographic images. The student should be knowledgeable about the characteristics of each piece of accessory equipment that s/he uses in order to make appropriate selections of equipment and conversions for different options selected. The student needs to have this

information at his/her ready access either in memory or in a personal reference.

Students must be able to read, interpret, and use a variety of technique systems including fixed and variable kVp charts as well as automatic exposure control charts. This skill is obtained by extensive use of charts as well as practice with charts and consultation with the registered technologist in non patient care situations. Students must work toward adaptation of charts to meet particular patient situations i.e. patient size, cooperation, habitus, pathology, and equipment. Again this skill is achieved by both experience in clinical situations and simulated patient care situations.

Students should seek assistance with an exam whenever there is doubt about its performance. The student is encouraged to try to use his/her knowledge and common sense to reason out the problem, but should not hesitate to ask for help if necessary. As in all circumstances, the assistance should be sought at the proper time, in the proper manner, and never in front of patient. As the student's education progresses, less assistance should be necessary. Students are encouraged to commit techniques to memory as soon as possible and to rely on references as little as possible, and to frequently review procedures, techniques, and positioning.

2. QUALITY OF WORK

Evaluates the student's accuracy, thoroughness, and neatness with procedures and paperwork as well as being focused on clinical tasks.

The student should combine knowledge and reasoning in the performance of the exam in order to ensure quality care and films. In the instance that a film is less than optimal, the student should evaluate the film quality and patient condition in order to determine if a repeat film is indicated. The student should not make this decision entirely on his/her own. Student films should always be reviewed by a staff technologist, faculty member, or radiologist. If a repeat is needed, the student should perform it willingly with respect for the person requesting the repeat. An explanation of the reason for the repeat, if not obvious, should be sought. The student should be certain of how to correct the error and must be accompanied by a technologist for the repeat film. The student should strive for the perfect film, accept the good film, and repeat the poor one if necessary.

While in the clinical setting, the student should be concentrating on those tasks which can only be accomplished in that environment. More specifically, the student needs to be focused on the procedure (s)he is involved with in order to perform in an efficient and well organized manner. There are innumerable details which need

attention for each radiographic exposure (including lead markers, patient identification methods, and shielding on all procedures). The student is expected to pay attention to all details nearly simultaneously in order to ensure an acceptable level of accuracy as evidenced by film quality which receives approval by supervising staff technologists, faculty members, or radiologists. The student should demonstrate concern over careless errors and take action to prevent their occurrence in the future. This is especially important when the student performs procedures with indirect supervision after the competency evaluation and must assume responsibility for adjusting all variables accurately to produce a quality radiograph.

Beyond accuracy and efficiency, patient, technologist, and student safety and well being may be jeopardized if the student's full attention is not focused on the patient and procedure which is in process. If a student finds that (s)he is unable to focus on the task at hand because a personal problem is interfering, (s)he should consult with the supervising technologist and/or Clinical Instructor to attempt to remedy the problem. In some circumstances, it may be necessary to remove the student from the clinical environment.

Patient care is also directly related to "quality of work" but is addressed in various other sections of this document.

3. ORGANIZATION OF PROCEDURES

Evaluates the student's ability to use time constructively and productively, follow instructions, and perform procedures efficiently and logically.

Organization in procedure performance contributes to quality of work in accuracy and efficiency. The first step in organization of procedures is for the student to be cognitively prepared for the upcoming rotation by reviewing notes and textbooks, being aware of the clinical assignment(s) associated with that rotation, and performing a self-assessment to set goals for the period.

In approaching a particular procedure the student should organize him/herself in advance of patient retrieval by verifying protocol, procuring film and supplies, and preparing equipment as much as possible in advance i.e. technique set, film placed and marked, tube adjusted, footstool in place. These tasks should be approached systematically and should require an amount of time consistent with the complexity of the procedure. The student should work toward an understanding of patient flow within each rotation such that exams can be initiated by the student without explicit direction from the supervising technologist.

During the procedure, again, tasks should be approached systematically and in a logical and efficient manner. The student should observe registered technologists

who have developed their own system and then critically evaluate each to form a personal approach which is most logical and efficient. The student should consciously look for ways to increase efficiency by reducing tasks performed, time taken to perform them, multiple tasks accomplished at one time, or by making good use of wait times or down times. The student should work toward an understanding of each procedure that allows the student to be a more helpful teamworker and work independently.

Completion of procedures in a timely and efficient manner is also an important responsibility. It requires that paperwork be completed quickly and accurately, films be distributed appropriately and the room be properly disinfected and prepared for the next procedure/patient. Again this must be approached systematically and with patient wait time in mind when schedules are tight or patient flow is busy.

The student will follow instructions given by staff technologists and faculty as completely and accurately as possible. In order to do this, the student must listen carefully, concentrate intently, and be conscientious about implementing the directions given. If the instructions as given are unclear to the student, it is his/her responsibility to obtain clarification BEFORE attempting to carry them out. Asking in advance is always better than making an error or guessing as to the intended meaning. The student should not be reprimanded or made fun of for asking clarifying questions. Any instance of this happening should be reported to the Clinical Instructor immediately. The student will be reprimanded for failure to carry out instructions when clarification was not obtained.

4. PATIENT COMMUNICATION

Evaluates the student's use of introduction, conversation, and explanation to meet the emotional needs of the patient.

A general attitude of respect for the patient as a human being is desired. Part of that includes respect when addressing a person with whom the student is unfamiliar. Upon initial contact, a patient should be approached using proper titles i.e. Mr., Mrs., Ms., Miss, Reverend, Sister, etc., and surname if the patient is older than the student technologist. Upon patient request, or after lengthy contact with the patient, the student may use a method of addressing the patient which is less formal. Children may be addressed on a first name basis in order to promote trust and cooperation. At no time are the use of slang terms i.e. honey, sweetie, dear, etc. to be used. The student will not reach the point of familiarity with a patient that would permit the use of such terms. The patient should be addressed by name throughout the procedure rather than by use of general terms such as ma'am or sir. This serves to increase the personal nature of the exam for the patient and also clarifies which patient is receiving instructions when examination rooms are in

close proximity to each other.

In light of the information that is available to the student regarding the patient and his/her condition, it is a common courtesy that the patient should know the name of the student technologist performing the exam. The student should introduce him/herself to the patient at the time of initial contact. This will also help the patient to feel that his/her needs are being taken care of. The patient may then ask the student technologist directly for assistance. If other persons become involved with the procedure the student should introduce them to the patient since the student has already established a rapport with that patient.

There are frequent occasions when the student must communicate with patients in a non-technical manner. In the hallways and during periods of waiting, general conversation is the appropriate communication. It is suggested that students converse with patients about such topics as current events, the weather, the patient's condition, hospital stay, occupation, or family. It is unacceptable to discuss issues of personal, prying, or controversial nature. Examples of such topics would be marital status, the student's personal life/hardships, and specific details of an injury/accident. Students should be careful to limit comments about operation of the equipment, the department, or the hospital to ones that are positive in nature. Conversation between two students/technologists working together should be limited to professional topics.

Considering the intimate nature of many of the examinations performed, essentially all portions of the x-ray exam should be explained to the patient. Judgment must be used by the student technologist regarding the scope and extent of the explanation based on the exam type, and the patient's comprehension level, age, and interest. The complexity of the procedure and the anxiety level of the patient should also be considered. Explanations should always be given regarding the general nature of the exam, any palpations made by the student technologist, and any movements required of the patient. In the interest of time and simplicity, short, concise explanations are best. However, when indicated by the exam and/or patient, lengthy and in depth explanations should be given. Care must be taken to use language which is consistent with the patient's level of comprehension. Jargon, acronyms, and scientific terms should not be used.

The patient should know the reason for any apparent delay in the exam progress. This is inclusive of any time when something is not actively being done for or to the patient. Common causes for waiting such as for a special room, a radiologist, films to be developed, the next film in a timed sequence, wet reading, paperwork, etc. should be explained to the patient. These simple explanations can help to alleviate the patient's fears and anxieties, thereby favorably affecting that patient’s opinion of the student, exam, and department.

5. PATIENT CARE

Evaluates the student's respect for patient modesty, provision of comfort, and performance of nursing care as required.

Students are expected to observe the patient's right to privacy and modesty as if s/he were the patient. This need should be met under all circumstances including transportation to the radiology department, within the radiology department, and during examinations. Patients should be covered as much as the procedure allows at all times. Examination room doors should be closed during all exams; the student should provide a method of restricted access to the room if patient modesty is especially compromised by the nature of the examination. Instructions to the patient should be given in private to prevent embarrassment to the patient.

During transportation, the patient should be provided with his/her bathrobe, if available and practical. If not, the patient should be provided with an alternate form of covering. Patients should also be provided with protection for their feet. It is inappropriate for patients to walk on hospital floors with bare feet. When a patient is transported by wheelchair, a blanket or sheet should be used to cover the patient's legs.

Outpatients should be provided with a patient gown that will provide the maximum coverage for that patient and each exam. Patients should remove only that clothing which is absolutely necessary for performance of the radiographic examination. Shoes and/or socks should be left on for all exams except those in which they would interfere with the performance or cleanliness of the exam.

The student is expected to demonstrate concern, in the forms of empathy and sympathy, for the patient's physical and emotional comfort. The most common complaint received from patients regarding their comfort relates to temperature of the radiographic room. Students should always inquire if the patient needs more covers in order to be comfortable. Physical comfort should also be achieved by providing support in the form of pillows, sponges, and/or chairs for the patient. Examinations should be performed in a manner that concentrates on patient comfort, not on ease for the student. Equipment should be arranged and technical factors should be set before the patient is positioned so that the patient remains in position for as short a time as possible. The patient should be made as comfortable as possible before the student leaves to check films or examination progress. Patients remaining in the department for long periods of time should be checked on frequently to assure patient comfort.

The emotional comfort of the patient is equally important, although harder to address. The student should keep in mind that the patient's primary concerns are more than just the outcome or progress of this examination. While it is not the student's responsibility to address all of a patient's emotional problems, (s)he should address those most often prevalent in the radiology department. Those areas include, but are not limited to, fear of results, fear of resulting disability, loss of self-esteem, and fear of the unknown.

Fear of the unknown is the easiest for students to dispel, simply by explaining the examination in lay terms and keeping the patient informed of the examination progress. Other fears may be partially dispelled by simply listening to them and providing reassurance without imparting confidential or false information to the patient. Students should encourage communication when appropriate by asking questions and conversing with the patient. The patient's need for self esteem should be met by allowing the patient to do as much as possible for him/herself without violating hospital policies. The student will need to use judgment in determining what the patient should be allowed to do; keeping in mind that patients will have varying degrees of disability.

The student should progress toward achievement in this section as (s)he spends more time in the hospital environment. Initially, the student is expected to respond to patient needs as voiced by the patient. As the student gains confidence in the psychomotor skills required for performance of the radiographic procedures, it is expected that (s)he will be able to anticipate the needs of the patient rather than merely react to them.

The student should use sound judgment when seeking help with difficult aspects of an examination. If the student is unaware of the required nursing skills in order to care for a given piece of equipment, assistance should be sought from a staff nurse, technologist, or faculty member. When transporting a patient the student should be certain which apparatus may be discontinued while in x-ray and which ones must accompany the patient before disconnecting anything. Once in the department, the student is responsible for the operation of the apparatus and should seek assistance from a staff technologist or faculty member should any problems or questions arise. When it comes to patient care, caution is preferred over negligence; therefore the student should not hesitate to ask for help. As the student progresses in his/her education a decrease in assistance should be strived for. Some areas of patient care where assistance may be needed are:

Isolation policies
IV operations
Chest tubes and suction
Naso-gastric tubes and suction

Oxygen administration
Catheter care
Disposal of body fluids

Patient care should also include other items beyond care of equipment. The student should also be concerned about the personal cleanliness of the patient if the patient is unable to perform those tasks alone. A patient should never be returned to the patient floor in an unclean state. Patients that are incontinent or without bowel control should be cleaned before leaving the department or in the patient's room before the student leaves. Outpatients as well as inpatients should be provided with necessary items to clean themselves of barium and should be assisted if necessary.

6. INTERPERSONAL RELATIONSHIPS

Evaluates the student's ability to communicate, interact and deal effectively with supervisors, peers, and other employees and accept constructive criticism.

Professional respect should be extended to the following persons: 1) Radiologists, 2) Staff Technologists, 3) Program Faculty, 4) Other Students, 5) Staff Physicians, 6) Hospital Staff, and 7) all members of the Radiology Department. In order to define "proper professional respect" with each group, a description of the relationship between the student and each group will be offered. For the purpose of these descriptions, the term "public" is assumed to mean any verbal or non-verbal indication of thought i.e. anything except that which exists only in the student's mind.

I. Radiologists

The student should recognize the symbiotic relationship that exists between the student technologist and the radiologist. The radiologist is highly trained in the area of interpretation of radiographs, while being minimally trained in their production. The student, on the other hand, is in the process of being highly trained in the area of production and only minimally in the area of interpretation. Therefore, one cannot exist without the other. It is imperative that each acknowledge the other's area of expertise. The respect that is granted to a person older and more educated than oneself is the minimum required.

Respect for the radiologist will be displayed by:

a. Introducing the radiologist to the patient in any exam in which the two come into contact.

b. Referring to the radiologist using proper title and surname at all times in the hospital setting.

c. Not questioning the radiologist's instructions regarding a specific examination. Clarification of instructions is appropriate and encouraged.

d. Not questioning the radiologist's interpretation of a film in a public way. The student's base of knowledge does not justify that disagreement.

e. When appropriate, questioning the radiologist about films, pathology seen reasons for requiring given projections, and film quality, etc. Questions which enrich the student's understanding of radiography and the radiologist's requirements are appropriate and encouraged. Questions which in any way "challenge" the radiologist's competence are not. Questions should be asked on an individual basis and when time allows (not during an exam).

f. Being loyal to and supportive of the radiologist's role and competence in public. Privileged information obtained in the hospital setting must be kept in the utmost confidentiality. Personal opinions of the radiologists must be kept as such - personal, not public.

II. Staff Technologists

Staff technologists should be viewed by student technologists as providers of information, examples to be followed, and authorities in the field. The student should recognize that radiography is an art, not an exact science; several different methods may achieve the same end. Students should not expect staff technologists to be the ultimate source of information, as recall of theoretical specifics may wane after the formal education process has ended. Students should keep in mind that the primary goal of the staff technologist is to get the job done, not necessarily to teach the student how to do it.

Respect for the staff technologist will be displayed by:

a. Accepting the technologist's decisions regarding positioning, procedure, and technique. This should be done without question (but not without curiosity) in light of the education and experience of the staff technologist.

b. Questioning of staff technologist's decisions in private and in the atmosphere of increasing knowledge, not passing judgment on the

competence of the staff technologist.

c. Recognizing that each staff technologist may have individualized any given procedure while keeping in mind the method that was taught to the student by program faculty.

d. Being loyal to and supportive of the staff technologist's role and competence in public. Privileged information obtained in the hospital setting must be kept in the utmost confidentiality. Personal opinions of the staff technologist must be kept as such - personal, not public.

III. Program Faculty

The student should view the program faculty as mentors and role models. The relationship between faculty and student must remain at a healthy professional distance in order to facilitate learning. Respect for the faculty is a fundamental assumption without which learning is compromised.

Respect for faculty will be displayed by:

a. Following all instructions given by faculty.
b. Questioning of instructions and decisions is not discouraged. However, questions must be asked privately and at the soonest appropriate time following the examination in question. Students should ask questions with the intent of gaining further knowledge and insight, not with the intent of questioning competency. The authority of the program faculty should be recognized without ignoring the student's right to disagree. The student should understand that acceptance is required while personal agreement with the faculty's philosophy is not.

c. Bringing discrepancies in positioning, procedure, and technique to the faculty's attention so that explanations my be offered.

d. Recognizing the faculty member's role as liaison with other parties involved in the educational process i.e., department personnel, hospital personnel, and college staff and faculty.

e. Being loyal to and supportive of the program faculty's role and competence in public. Privileged information obtained in the college or hospital setting must be kept in the utmost confidentiality. Personal opinions of the program faculty must be kept as such - personal not public.

IV. Other Students

The closeness of the working relationship among students in each class demands great care in dealing with other students. It is important that students realize the necessity of cooperating with each other while not sacrificing one's own education for the sake of another student. It is also essential that students understand that not everyone will progress at the same rate and that being ahead of or behind the group is just as dependent on experience as it is on ability.

Respect for other students will be displayed by:

a. Remaining in one's assigned rotation so as not to reduce the experience of another student. When "floating" into another rotation, recognizing the priority of the student already there.

b. Willingness to share the experiences available in an assigned rotation with other students.

c. Refraining from discussion of other student's behavior in clinic and classroom as well as outside of the educational setting.

d. Refraining from discussion of displeasure with persons or policies related to the educational program so that other students will not be adversely affected by the negative comments.

e. Being loyal to and supportive of other students' role and competence in public. Privileged information obtained in the college or hospital setting must be kept in the utmost confidentiality. Personal opinions of other students must be kept as such - personal, not public.

V. Staff Physicians

The relationship between student and physician is similar to that between student and radiologist in that a certain level of respect is assumed. The student should recognize the physician's special area of expertise and should acknowledge their role in the care of the patient. Generally speaking, the physician will be the coordinator of the care of the patient, and may be the only person who is aware of all facets of the patient's condition.

Respect for the staff physician will be displayed by:

a. Referring to the staff physician using proper title and surname.

b. Not questioning the physician's judgment or competence in areas where the student is not qualified to judge.

c. Recognizing the staff physician's role in the requesting of radiographic examinations.

d. Being loyal to and supportive of the staff physician's role and competence in public. Privileged information obtained in the hospital setting must be kept in the utmost confidentiality. Personal opinions of the staff physician must be kept as such - personal, not public.

VI. Hospital Staff

The student's relationship with the hospital staff should be reflective of an awareness of their given areas of expertise. An atmosphere of cooperation, not competition, is essential in order to facilitate the best possible care for the patient. The student should remember that the hospital and its staff are providing a service to the student by allowing the clinical phase of training to take place there.
Respect for the hospital staff will be displayed by:

a. Addressing hospital personnel by a method which is appropriate to the position of that staff member.

b. Not questioning the competency of hospital personnel in areas where the student is not qualified to judge.

c. Acknowledging the staff member's area of expertise and seeking the assistance of an appropriate member when the student's base of knowledge does not provide for proper care of the patient.

d. Being loyal to and supportive of the hospital staff's role and competency in public. Privileged information obtained in the hospital setting must be kept in the utmost confidentiality. Personal opinions of the hospital staff must be kept as such - personal, not public.

VII. Radiology Department Staff

The student's relationship with other Radiology Department staff should be

one of respect for the other's area of expertise. Radiology aides, transporters, and secretarial personnel should be acknowledged for their special skills and should be viewed as a source of information by the student. At no time during the student's training should (s)he display a condescending attitude toward these personnel. They are a vital part of the department without which the department would not function.

Respect for other Radiology department personnel will be displayed by:

a. Allowing personnel to perform their job to the best of their ability.

b. Asking for assistance in performing tasks - not demanding it.

c. Asking questions of the staff in an appropriate place and time to broaden the student's base of knowledge.

d. Not asking staff to perform tasks for which they are not qualified or are not allowed to perform.

e. Being loyal to and supportive of the department personnel's role and competence. Privileged information obtained in the hospital setting must be kept in the utmost confidentiality. Personal opinions of the department personnel must be kept as such - personal, not public.

7. INITIATIVE

Evaluates the energy and motivation displayed in starting and completing tasks.

An atmosphere of cooperation among staff and student technologists is essential to the operation of the radiology department. A student in clinical training must keep him/herself occupied as much as possible in order to intensify learning. At no time during the scheduled clinical hours should a technologist perform an exam unassisted while students are present in the lounge area, or otherwise occupied by non-clinical activities, i.e. studying. The only exception to this is when the students are involved in a structured clinical activity directed by a faculty member, i.e. practice sessions, laboratories, film critique class. The student's priority for using time while in clinic must be directed toward those activities which can only occur in the hospital; studying for classroom assignments should be the lowest priority of educational activities while in clinic.

It is especially recommended for students to assist with examinations which are beyond their clinical education level. This will enhance classroom learning in that subject area when it is approached. In these circumstances, it is important for the

student not to participate with a closed mind. The student should be inquisitive about positioning, centering, central ray angulation, and anatomy, as well as becoming familiar with departmental policy regarding the examination. These actions will increase the student's rate of learning as well as foster a positive attitude in the technologist regarding that particular student.

Students should be willing to offer assistance with tasks not directly educational in nature, but which aid the smooth operation of the department. Such tasks would include, but are not limited to:

a. helping to maintain equipment and facilities
b. helping to maintain and organize linens and supplies
c. helping to complete regular and extra paperwork/filing tasks
d. helping to wash cassette surfaces
e. helping to process films and complete paperwork on exams which the student is not involved in directly

Students are expected to seek responsible assignments--those which challenge the student and provide growth in the technical or professional areas. Acceptable behavior in this area will be demonstrated by the student taking the initiative to:

a. attempt to perform routine exams (ones which the student has been certified competent in and has had practice with) on a difficult patient.

b. attempt examinations for which the student has received classroom instruction, but not much clinical practice. The student should attempt to perform the exam as completely as possible with the technologist assisting when necessary rather that always watching what the staff technologist does.

c. assists the staff technologists with exams that are beyond the scope of classroom learning in the interest of learning about the exam before it is covered in class.

d. review interesting cases with technologists, faculty, or radiologists.

e. complete experiments both assigned and unassigned.

f. practice/review positioning and technical skills with other students, technologists, or faculty.

g. be aggressive in completion of competencies and independent practice following competency evaluation.

8. PERFORMANCE UNDER PRESSURE

Evaluates the student's ability to handle pressure, provide assistance, and remain calm in busy or crisis situations.

Pressure arises in the radiology department as a result of patient medical condition, patient flow, and performance demands. Students are expected to progress in their contribution to completion of procedures in pressure situations from the role of observer, to the assistant, to sharing responsibility with the registered technologist, and ultimately taking responsibility for procedures themselves. Initially, in the role of observer, the student should be of whatever help (s)he can and should be conscious of whether his/her presence is a hindrance to progress of the exam. As an assistant, the student should attempt to identify what tasks are left undone and perform or assist with those. The student should be willing to serve any function that (s)he is confident and comfortable with in order to speed the progression of exams or relieve some pressure. Finally, the student should be taking charge of progressively larger portions of the procedure.

In instances where quick concise decisions are necessary, the student should develop the ability to decide quickly based on the knowledge and the circumstances surrounding the examination. Such instances may range from the child patient to the disoriented older patient to the uncooperative emergency patient. The student should, as much as possible, remain calm and self-confident and perform the exam as routinely and efficiently as possible. The student should not revert to the role of observer. Experience will greatly help the student's ability to achieve this. Therefore, the student should observe and assist whenever possible with this type of examination.

Competency evaluations are also considered to be pressure situations for students. Students often become anxious when they must perform all tasks alone under the supervision of an instructor. In this instance the student who is overly anxious may forget details, become disorganized, or unnerved and may communicate little with the patient. In this case excessive anxiety is considered to be an indicator of marginal or limited competence and may affect the result of the evaluation. Students must maintain expected level of performance in all affective areas during the competency evaluation.

9. JUDGMENT

Evaluates the student's ability to reason, interpret, and use discretion in performing examinations with respect to technique, patient care, adaptability, professional decision making and communication.

The student is expected to perform examinations thoughtfully, attending to both theoretical and practical aspects of exam performance. While students are expected to follow departmental protocols, they should also evaluate protocols against theoretical bases of practice and question discrepancies. Both theory and prior experience are needed to adapt examination procedures to the special needs of each patient. As the student progresses through the program, greater theoretical knowledge and clinical experiences should be applied in adapting to patients with more ease and speed.

The student should be objectively evaluating his/her own level of competence. While students are encouraged to challenge themselves, they should not pretend they know how to do an exam of which they are unsure. Additionally, the student is expected to seek out clinical experiences that will provide growth for the student through consultation with faculty and clinical supervisors. This professional attitude also applies to situations in which the student must make personal decisions that impact such things as attendance, health, and ability to function in the clinical setting.

Decision-making as described in the section on performance under pressure is also a critical element of judgment. Pressure is experienced when a patient is unable to respond to our requests and the examination must be performed by an alternate method. In this situation, the student must be able to call on classroom learning and previous clinical experience rationally and quickly to apply it to the current circumstances.

Discretion is an important element of judgment in patient communication and interpersonal relationships in the work place. The student must decide if a certain topic is suitable for discussion with a patient or with co-workers as some issues are not appropriate for general conversation. These areas have been discussed fully in previous sections of this document.

10. DEPENDABILITY

Evaluates the overall attendance/promptness record and the student remaining in the assigned area.

Students are expected to meet all clinical assignments unless an emergency arises or illness would cause the student to perform at a substandard level or cause unnecessary risk to the patient population. Although the radiology department does not depend on students for its day to day functioning, the students are an important part of the department. Circumstances arise where the

assistance of a student would provide smoother and more pleasant operation. Additionally, there are times when a specific exam may be delayed (when appropriate) in order for the student to benefit during its performance. Failure of the student to meet scheduled clinical hours is seen as a reflection of his/her professionalism and commitment to the program. Dependability is one of the most admired and expected of attributes of any health care professional or student. Failure to meet expectations in this area carries over into other areas of the technologist's view of the student.

It is the student's responsibility to be aware of the attendance and punctuality requirements as printed in each semester's syllabus and the student handbook as well as the consequences of not meeting those requirements. Students are expected to keep track of their absence time and approach the clinical instructor and/or clinical coordinator as soon as possible when make-up time is indicated. Impromptu scheduling changes are disruptive and confusing and should be kept to a minimum.

Additionally, students should remain in their assigned area during the workday. It is the student's responsibility to inform the supervising technologist when (s)he will be leaving the area for any reason. Breaks and lunch times are to be coordinated with the technologists and are not at the sole discretion of the student. During a slow time, when the student might engage in an educational activity in another area, the technologist must be told of the student's location. A system of notifying the student when work comes in should be arranged; it is ultimately the responsibility of the student to keep abreast of the activity in the assigned area rather than expecting the technologist to seek him/her out.

11. ADHERENCE TO PROGRAM/CLINIC POLICIES

Evaluation of the student's awareness of and commitment to following the policies of the program and each clinical site.

Students in clinical training must observe the rules and regulations of the hospital and radiology department in which training is taking place as well as the college program itself. It is the students' responsibility to be completely familiar with the entire contents of each clinical course syllabus. While policies and procedures at clinical sites change regularly, the student should make every effort to keep current on policies and at minimum should know who to ask and where to find written policies. Areas of concern include, but are not limited to, the following:

a. parking
b. time logs
c. grading procedures
D.location of protocol&safety manuals

e. competency priority

f. assignment due dates
g. protocol for transportation of patients
h. reporting equipment failure
i. smoking regulations

Students are responsible for becoming aware of policies at the onset of the program by reading the student handbook and department procedures manuals. In order to keep current on policy changes and new policies, students should be attentive to the communication mechanisms at each site, read biweekly newsletters, and attend informational meetings and clinical conferences scheduled by program faculty throughout the year.

12. PERSONAL APPEARANCE

Evaluation of the student's grooming, cleanliness, and appropriateness of dress and that name tag(s), film badge, and markers are displayed appropriately.

The required student uniform is described in the student handbook. Individual taste will be allowed for as long as the uniform remains tasteful, neat, and professional. While uniforms need not be unattractive, they should also not be revealing of skin or body habitus in an excessive amount. Any time that a uniform is seen as inappropriate by a faculty member, a student may be asked to wear a lab coat or leave the clinical site to obtain an appropriate uniform. Students will not be penalized for attire which does not suit the taste of the faculty as long as it meets the code and is tasteful, neat, and professional.

Students are expected to observe normal and customary rules of hygiene. Hair should be neat, clean, and secured so as not to interfere with the exam. Body should be bathed daily and deodorant applied. Hands and fingernails should be kept scrupulously clean throughout the clinical time since hands are the most frequent cause and spreader of disease. In addition, personal cosmetic habits should be such that they are not offensive to the patient. Students should wear make-up, perfume, fingernail polish, and jewelry at a minimum subdued level as fragrances are especially repugnant to the ill. Bright colors (on nails and face) are usually offensive to the ill and are out of place in the hospital. Jewelry can harm patients (especially rings) or can be potentially harmful to the student, i.e. chains which can be easily grasped.

Students are expected to display name tags provided by the college in an easily readable place at all times. Identification badges required by individual clinical education sites must be visible. Film badge(s) should be worn in their appropriate place at all times, i.e. collar and/or waist. Student right and left markers must be available for use by the student at all times. It is the student's responsibility to

replace the markers as soon as possible after a loss occurs.

13. PROFESSIONAL ETHICS

Evaluates the student's integrity and loyalty and the impressions the student makes regarding professional demeanor.

Students are expected to follow all tenets of the code of ethics of the American Society of Radiologic Technologists. Discussion of that code of ethics is provided in the Introduction to Radiography course via textbooks and classroom experiences. Elaboration in this context would be repetitive and unwieldy. Violations of the code of ethics may result in serious disciplinary action including dismissal from the program. Any violation will be considered on an individual basis to determine the appropriate corrective action.

In particular, the student is expected to observe the rules of confidentiality of patient information. That information which should be kept confidential includes, but is not limited to, examination results, information in the patient's hospital record (chart), personal history, behavior in the radiology department, and any information obtained from the patient during the exam. The information should be passed on only to those professionals directly involved in the patient's care. Patient information is not to be discussed with co-workers not involved in patient care, other students, student's family and friends, or the patient's family. Students should not extend personal favors to family and friends based on their access to patients' radiology results and hospital records.

The student should take into consideration the site of conversation with or about patients. Discussions with co-workers need to take place in areas where confidentiality can be maintained. When patients need to be asked questions about preparation, previous exams, or pregnancy, the appropriate place is within the examination room, not in the hallway. Appropriate conversation while walking patients to the room does not include personal information about the patient.

Additionally, the student is expected to conduct him/herself with integrity consistent with the profession. At minimum, the student is expected to be truthful with respect to his/her behavior in the clinical setting. This is a critical aspect of being trusted with the care of patients. The student must take responsibility for his/her actions and be forthright in addressing those situations requiring the attention of the student's supervisor.

14. CRITICAL THINKING

Evaluates the ability to make judgments that are not “routine” but improve patient care and department flow using professional reasoning and thoughtful consideration. This factor is not evaluated until the second semester of the second year of the program.

PROGRAM POLICIES

I. Attendance

The Radiography Program observes the following absence policy for didactic courses. The policy allows four to six hours of absence per semester for a three (3) or four (4) credit course. When this amount is exceeded, the student's final course grade is automatically lowered by 5%.

In the interest of developing the desirable work habits of dependability and reliability, absences are not encouraged. This is one area of professional development in which the student should strive to excel in the early stages of the program. Employers are very interested in the attendance records of students they are considering for employment; a good record can give you the edge over an equally qualified individual with a less desirable history of dependability. Allowances will be made for illness and bereavement. Excessive absences will affect the student's grade in the clinical practicum courses; the policy will be defined specifically in each course syllabus.

A student who is unable to attend a scheduled clinical session must notify the appropriate Clinical Instructor prior to the beginning of the shift. If an appropriate Clinical Instructor is not notified within 30 minutes past the beginning of the shift, the student will receive a written warning, On the second offense, the student will receive a written warning and a **5% final grade penalty**. On the third offense, the student will receive a written warning and a **10% final grade penalty**. The fourth offense will result in dismissal from the course. Students who are working evening shifts are required to call in by 12:00 of the day of their shift. Students who are working the Swing shift should call in by 9:00 a.m. the day of their shift. Absences are accrued, meaning, students are not allowed to continue in the clinical course for the 4th absence in ANY clinical rotation.

If excessive absence requires that the student make up regularly scheduled hours, the Program Director and/or Clinical Instructor and student will work out a mutually agreeable schedule. Hours will be made up in a manner that most closely resembles the experience that was lost during the absences.

II. Tardiness

Tardiness is an unacceptable work habit and is, therefore, unacceptable in the radiography student. Students are expected to be ready to begin work at their scheduled time. A student is considered tardy if he/she is not "on the floor" available for scheduled assignments at the beginning of the scheduled shift. Excessive tardiness, defined as more than 15 minutes late more than 3 times in any grading period, or an established pattern of tardiness less than 15 minutes, will be reflected in the affective grade.

III. Holiday and Vacation Time

The program will observe the college's academic calendar each year including its observed holidays, recesses, and inter-semester breaks with the exception of the required summer internship. The summer internship will be scheduled by the Program Director/Clinical Coordinator each year. Students will receive a vacation period before, during, and after the internship.

IV. Compensatory Time Off

Students scheduled to evening and weekend shifts will receive compensatory time off from their regularly scheduled day-time hours so as not to exceed the maximum schedule of forty (40) hours per week.

V. Time Recording

Students are required to keep accurate logs of the hours that they spend in the clinical environment. This program documentation and record keeping is important for the structure of the program and to aid in legal accountability for the student, college, and hospital. There are circumstances when it is essential to know specifically when a student was at the clinical site. The student should write in the times indicating exactly when he/she began and ended work, not the times that were scheduled. Since these are important legal documents, accuracy is essential and honesty is assumed.

VI. Medical Leave of Absence

In the event that a student is seriously ill and misses more than the allowed days from clinical practicum, the student may request a medical leave of absence. The following policies will apply to the medical leave:

1. The request must be made to the Program Coordinator as soon as the student suspects that excessive absence due to illness will occur. The

illness must be documented by a physician and must require that the student miss a number of days greater than allowed before the grade is affected. A student who misses the maximum number of hours prior to grade penalty may be given the option of applying for medical leave when additional absence is incurred.

2. All absences which can be accredited to the specific illness must be made up. The normal allotment of absences will be retained for other illnesses or personal emergencies.

3. A make-up schedule will be arranged among the student, Program Coordinator, and Clinical Instructor at affected affiliate site. The schedule will be formalized by a letter from the Program Coordinator to the student and Clinical Instructor.

4. Make up time will be arranged such that it matches the clinical experiences missed due to absence. Shifts and rotations will be scheduled according to the student's initial schedule and will not interfere with another student's regularly scheduled rotation.

5. Since each clinical course serves as a pre-requisite to the next, all time must be made up prior to the beginning of the subsequent semester If make-up time is scheduled after the end of the term, a grade of incomplete will be given for the course until the time is completed. If the semester affected is the last semester of a student's program, time must be made up within 2 days before graduation ceremonies.

VII. Bereavement Leave

Bereavement leave is granted so that a student may grieve the death of a family member or someone living with them. This time does not affect the clinic grade or absence allowance. Make-up time for specialty rotations will be arranged within the clinical schedule. The following policies will apply:

1. Up to three (3) consecutive clinical days for the loss of an immediate family member (spouse, parent, sibling, child, grandparent, grandchild or in-law).

2. Up to one (1) day for the loss of aunt, uncle, or someone living in your household.

3. Program officials may determine that additional leave days are warranted for extenuating circumstances.

VIII. Patient Examination Records

As will be described further in the clinical evaluation methods section, students must keep track of all patients with which they have contact at the clinical site. This enables program faculty to ensure that sufficient numbers and variety of exams have been performed and also provides a record of patient contact should that be necessary for medical or legal reasons. The method by which these records are kept and used is described in the clinical evaluation section.

IX. Health and Accident Policy

Students are required to submit a health form to the college prior to the beginning of classes. This is essential documentation of the student's health status prior to entering the program. This is important information for providing health care for the student in the event of an illness and also can be an important legal document. In the clinical setting, students will be exposed to diseases that they may have the potential to contract. It is for this reason that the base health report, including immunization records, and the reporting of illness and accident are so important to both the student and the college.

Illness causing the student's absence from class and/or clinical should be reported to the Program Coordinator as soon as possible and must be reported prior to the scheduled arrival time for clinical sessions.

Communicable diseases should be reported to the Program Coordinator for consultation with the appropriate health officials regarding the students return to class and clinic. A student may be prevented from attending scheduled class and clinical sessions if the student's health condition would compromise the safety of students, patients, or personnel.

Incidents and accidents in the clinical setting should be reported immediately to the Clinical Instructor. These include incidents involving student, as well as patient, health and welfare. Reports of any potential medical or legal significance should be referred to the Program Coordinator by the Clinical Instructor and the appropriate documentation will be placed in the student file. As stated in the affiliation agreement, the hospital will provide basic emergency care (at the student's cost) to any student scheduled at the clinical site who requires such care.

X. Pregnancy Policy

This policy is designed to provide guidance for the female student regarding the issue of pregnancy during the educational program. Disclosure of a pregnancy is a completely voluntary decision on the part of the student. If the student chooses to inform the program of the condition, it must be done in writing to the program coordinator. At this time, the student will be issued a fetal monitor and

receive additional instruction about the potential risks of exposure to the embryo/fetus. The student may choose to continue with regularly scheduled clinical assignments or may choose to alter the clinical rotations.

To Declare a Pregnancy:

Notify the program coordinator in writing.

Once pregnancy is declared:

1. The student will be issued a fetal monitor. Dosage to this monitor shall not exceed 50 mRem (.5 mSv) in any one-month or 500 mRem (5 mSv) for the entire gestational period.

2. The student will receive additional instruction about the potential risks of exposure to the embryo/fetus. This instruction may come from the program coordinator, written material, or a radiation physicist.

3. In consult with program officials, the student will decide whether to:
   a. continue the field experience course without modification
   b. continue the field experience course with modification
   c. withdraw from the field experience course

4. Modifications to the clinical portion of the program may include rescheduling rotations in which the student is more likely to receive dose and may result in an incomplete grade in the field experience course until such rotations are made up.

5. Absences accrued as the result of the pregnancy, including post-delivery recovery, will be treated as a medical leave of absence.

To Revoke Declaration

1. A student may revoke the declaration of pregnancy at any time by submitting written notification to the program coordinator.

2. Upon notification, monitoring of the fetal dose will cease.

XI. Dress Code

The student Dress Code is implemented for 3 reasons: professional image, hygiene to protect the student and patient, and safety. *Though the student may not agree with the professional requirements of the dress code, they are required and those not adhering to the following policies may be required to leave clinic*

due to policy violation, which will result in absence time for the student.

The dress code, at the minimum, meets the code of the hospitals in which the students train. While the hospital policies are quite lenient in some areas, in order to have equal requirements of all students, the following policy will apply to radiography students when at the clinical site:

HYGIENE

1. Students shall observe the rules of personal hygiene described in the affective clinical objectives.
2. Long hair must be pulled up or back so it does not fall forward toward the patient when you lean over.
3. The following are not allowed while in clinic:
    a. bare feet/legs
    b. strong colognes/perfumes
    c. excessive jewelry (as more than 2 rings on one hand, more than 2 bracelets on one wrist, 2 earrings per ear, any large jewelry, etc.), excessive make-up or any colored nail polish (other than clear or flesh-tone)
    d. visible piercings anywhere other than the earlobe
4. Artificial nails of any type are not permitted.

SAFETY & SECURITY

5. Name tags and film badges must be worn. In the event that a student does not have their film badge, for whatever reason, s/he may either leave clinic to retrieve it and return, or leave for the day. In either case, absence time accrues for the clinical time missed.
6. Must wear white, leather/leather-type shoes which are kept clean and polished.
    a. No open toed shoes.
    b. No canvas sneakers/tennis shoes.
7. No cloth jewelry.

CLOTHING

8. Must purchase an appropriate number (equal to the number of scheduled clinical days) of approved "scrub -type" uniforms. These will include options for pants, tops, and dresses. Scrubs must be laundered daily and ironed. Scrub pants must be hemmed so that they do not touch the floor and may not be worn rolled up or tucked into hose/socks. Pants must be at the waist and cover underwear.
9. No visible tattoos allowed. All tattoos must be covered.

10. A solid-color white or navy short or long sleeve top may be worn underneath the scrub top. Shirts with advertising or artistic logos that show are not allowed. Short sleeved tops should not hang below the sleeves of the scrub top. *At no time should bare skin be visible between the scrub top and bottom. If the two do not meet when arms are raised or during bending, a tucked in shirt must be worn underneath the scrub top.
11. A white lab coat may be worn over the scrubs if desired.
12. Appropriate undergarments must be worn. Only full brief underwear is appropriate. Slips must be worn with skirts/dresses.
13. White or flesh-colored hose or socks must be worn.
14. Full OR scrub clothes provided by the institution must be worn when scheduled to work in OR and angiography. **.** If you chose to wear them outside for any reason, they must be changed before re-entering the OR. **A colored lab coat must be worn over full scrub suits in the joint, heart and spine rooms.**
15. If you wear your clinic shoes anywhere other than in the clinic, shoes covers must be worn in the OR.
16. OR hair covers and masks are found outside each room and are required for all sterile procedures. The hair covers must cover all hair.
17. No earrings or jewelry is permitted other than a watch.

XII. File Maintenance

In addition to the standard college records, the following student records will be maintained in the Program/Clinical Coordinator's office:

1. Copy of the entrance health report to which documentation of any subsequent illness or accident will be added
2. Time logs
3. Progress charts identifying student competencies
4. Laboratory evaluation forms
5. Affective evaluation forms
6. Film evaluations
7. Conference records - Each time the student meets with the Program Coordinator for advising, scheduling, evaluation consultation, and reprimand, academic warning, etc. a counseling form will be filled out and signed by both parties. This documents the conversations and agreements occurring between the student and faculty. All documents placed in the student file will be reviewed by the student as attested by the student's signature. Any conference forms not signed by the student may not be considered in academic actions.
8. Equipment checklists
9. Patient examination records
10. Procedure competency evaluations

All records maintained by the Program Coordinator will be in accordance with the provisions of the Family Educational Rights and Privacy Act of 1974 as fully outlined in "The Rudder".

The following records will be maintained at the clinical site by the Clinical Instructor:

Clinical Instructor's note log - a personal log of student progress aiding in completing evaluations

XIII. Radiation Safety

The following policies regarding radiation safety must be followed by all students at all times:

1. Students may not, at any time, hold patients during radiographic exposures.

2. Radiographic examinations may only be performed under the direction of a qualified physician.

3. Radiographic examination of patients who are pregnant must be performed in the presence of a technologist, regardless of the student's level of competence.

Because of the potential health hazards associated with the use of ionizing radiation, students are provided with a personnel monitor for use in the clinical setting. Radiation monitors must be worn at all times during clinical practica. A student who does not have the monitor with him/her will be sent home to retrieve the badge and may either return to clinic or take the rest of the time as absence time. In either case the time missed is considered absence time. In the event that the badge is lost or misplaced, the student will be provided with a temporary badge which will be recorded in the student's permanent radiation record.

The personnel monitor should be worn on the collar or at that same level. It must be clipped to an article of clothing so that the identification information faces forward in order for it to operate correctly.

Care of the monitor is the responsibility of the student. It should be kept away from sun, heat, microwaves, televisions, and radiation sources. Care should be taken to avoid laundering the monitor as this causes the loss of essential information.

The monitors are changed bi-monthly. It is the responsibility of the student to change his/her own monitor. This must be completed within two (2) days following the badge date. Monitors not changed during that time will be processed upon

receipt, but without the appropriate control badge, therefore producing inaccurate readings. In addition, failure to change the monitor will result in a loss of one point on the affective evaluation for each occurrence.

Following submission of the badge at the end of the period, the College will receive a report of radiation exposure. This report will be circulated by the Clinical Coordinator and must be reviewed and initialed by each student. Exposures in excess of 100 millirems for the 2-month period will require a conference with the Program Coordinator to discuss possible causes of high exposure.

XIV. Grievance Procedure

The academic grievance procedure as outlined in the college catalog applies as written to student complaints in all aspects of the radiography curriculum.

Since Clinical Instructors have the responsibility for student actions while at the clinical site, they also have the authority to discipline students and play an active role in the determination of the grade awarded for clinical practica courses. If a grievance should arise involving the Clinical Instructor, the student should first discuss the decision with that person. If an acceptable resolution does not occur, an appeal of that decision may be directed to the Program Coordinator. The student should then follow the grievance and appeals procedure as outlined in the college catalog.

EVALUATION POLICIES

I. Didactic - Evaluation of students in the classroom will vary from course to course. Specific procedures are outlined in the syllabus for each course.

II. Clinic

I. RECORD KEEPING

The following records are maintained by students and program officials in order to monitor the equity and relevance of the clinical education experience gained by each student in the program.

A. Patient Records: Students use a computerized data management program to record the medical record number and procedure performed for all patient activity on each clinical day.

Purpose: 1) patient contact for infection control and liability

2) competency pre-requisite experience verification
3) simulation eligibility
4) equity and suitability of clinical activities

Procedure: Students maintain a personal record of patient activity using a method of his/her choosing (flashcards, unused copies of exam request, written record or log sheet). Each week the student enters this information into the data management system using a computer housed at or near the clinical site and prints out two copies of the weekly record. One record is turned in to the Clinical Coordinator and the other is maintained by the student. **NO patient records are to leave the sites. They must stay on site at all times, other than when transferring from NMC to a FAHC site. This is in accordance with HIPPA regulations.**

B. Competency Progress Charts: Progress charts record the procedure competencies that each student has completed to date. Two versions of the competency progress record are kept. One is maintained in the student file in the Clinical Coordinator's Office and the other is displayed at each of the clinical sites.

Purpose:
1) Maintain records of competency progress for each individual student (both charts)
2) Provide supervising radiographers with a record of each student's completed procedure competencies (clinical chart)
3) Monitor clinical instructor and clinical education center activity and grading patterns. (file chart)

Procedure: Following completion of a procedure competency evaluation and verification of the pre-requisite clinical experience, the clinical coordinator will check off that procedure on the clinical progress chart and then make note of the date, grade, evaluator, and whether the competency was simulated on the student file progress chart. The clinical progress chart is updated weekly at each of the clinical education centers.

C. Film Evaluation Completion Checklist: Records the examinations on which each student has completed a film evaluation. Students have specific requirements each semester and are expected to evaluate most examinations on which they complete procedure competency evaluations.

Purpose: Verify an appropriate variety of examinations on which film

evaluations were completed by each student.

Procedure: The clinical coordinator will check off each examination that the student performs a film evaluation on. Students are expected to maintain their own records of completion; therefore, this chart is not posted at the clinical sites.

II. COMPETENCY EVALUATION

The following evaluations are used to ensure that each student has completed the program competencies that have direct clinical application.

A. Procedure Competency Evaluations: These evaluations are performed by clinical instructors and program officials to determine the students' ability to perform the specified procedure without assistance on the typical patient. The student must have been involved with three examinations of the type being evaluated prior to competency testing. This fact will be verified following completion of the evaluation process and may result in invalidation of the competency if proper experience cannot be documented.

Competency evaluation is required on 52 procedures, ten of which may be performed by simulation. For the purpose of grade determination, a specific number of competencies are targeted for completion in each semester; all competencies must be completed prior to graduation.

Procedure competency evaluations measure the student's ability to perform the requested examination according to the criteria outlined in the procedure competency evaluation form for that examination. Generally, these evaluations are limited to patient and equipment set-up for each required projection, but will include additional procedural criteria for examinations where physician interaction is required. A minimum grade of 85 percent is required for successful completion.

A student may automatically fail a procedure competency evaluation for serious error or for actions that would most definitely cause a repeat exposure to be taken. Some examples of these actions are omitting a view, double exposures, using the wrong screen type, and radiographing the wrong side of the patient. A more specific list of actions resulting in automatic failure is included in pertinent clinical course syllabi.

Purpose: To verify student competency in specified procedures, thereby allowing the student to perform with indirect supervision.

Procedure: The student will request a clinical instructor to perform the competency evaluation when s/he believes the pre-requisite experience, knowledge, and skills have been attained. The clinical instructor will interpret the requisition with the student, determine if the patient is appropriate for this testing situation, and observe the student from the point of room preparation and patient retrieval to completion of paperwork and discharge of the patient.

During performance of the examination, the instructor will observe the student's actions and allow the student to make final decisions regarding all aspects of the exam before making any necessary changes. Adjustments of a minor nature not substantially changing the outcome of the radiograph are not made during an evaluation, but will be noted with appropriate points deducted. An instructor makes changes of major significance during procedure performance if patient condition requires. An evaluation may be aborted by the instructor if indicated by patient condition or an obvious lack of skill by the student.

Examinations which generally occur less frequently may be evaluated for competency by simulation. This is true only for those exams which are designated to be simulatable by asterisks on the Competency lists. Simulations on extremity and spine examinations may be performed at the end of the third semester of clinical experience, while those of the head will be performed at the end of the final semester. If a student has been unable to attain the required pre-requisite experience (3 examinations), and a fourth examination for competency evaluation, a simulated competency will be performed. The simulated competency requires one student to position another for all but the exposure portion of the exam and then expose a radiographic phantom and critique the technical factors used. The regular competency forms are used for grading with two criteria added. Technical ability is graded since most technique charts do not included listings for these uncommon exams. Film critique is also graded to assess the student's ability to adapt a technique which may have been little more than a guess at the onset.

Review: The results of the competency evaluation are reviewed with the

student as soon as possible following completion of paperwork (usually that same day, occasionally the next day).

Remediation: If the procedure competency evaluation is computed at less than the required 85% or if an automatic failure has occurred, the evaluation must be repeated. A repeat may be attempted on the next clinical day and must be successfully completed prior to graduation. Penalties for competency failure are assessed in some field experience courses.

If a student fails to pass the competency evaluation twice, (s)he must formally review the procedure with a clinical instructor and document one additional patient examination prior to a third attempt at competency assessment.

B. Unit Rotation Evaluations: Clinical skills which cannot adequately be evaluated from the observation of one examination (as a procedure competency is) or that are not directly patient related are evaluated by unit rotation over an extended period of time. These evaluations are derived directly from the specific clinical objectives.

Purpose: 1) To evaluate professional and patient care competencies.
2) To evaluate skills which do not require direct patient contact.
3) To evaluate student performance in specialty imaging rotations.

Procedure: Procedures will vary greatly with each unit rotation. Unit rotations may be completed by specialists in the rotation area as described in the chart provided with the competency evaluation book of forms. Both the chart and the forms identify the site and rotation during which the evaluation should be completed. Students are responsible for initiating the evaluation process, although evaluators are familiar with the scheduling of students for rotation and assessment.

Competency is set at the 85% level, and evaluations scoring below that level must be repeated. The radiation protection unit rotation must be completed with 100% accuracy.

Review: Completed evaluation forms are reviewed as soon as possible, most often during the final hours of each rotation.

Remediation: If less than the required percentage is achieved, a clinical instructor or program official will determine the additional experience and activities necessary for completion and schedule with the appropriate

individual.

C. Equipment Checklists: Equipment checklists serve as both teaching and evaluation tools. They encourage the student to investigate equipment operation and later are used to test the student's skill at using the equipment. These are completed weekly during the first two semesters and are graded on completion only. A variety of checklists are used at different clinical education centers and for specific types of equipment i.e., mobile or mammography units.

Purpose: To ensure that students learn to operate the radiographic equipment with skill and accuracy.

Procedure: Equipment checklists may be completed by staff radiographers or second-year students upon request of the first-year student. The evaluator asks the student to perform each of the stated tasks either individually or in combinations likely to be used during procedure performance.

Review: Immediate review with evaluator. Clinical Coordinator reviews completed evaluations for patterns of unsatisfactory performance.

Remediation: The student receives immediate instruction for proper completion of the tasks on the checklist. Performance may be re-evaluated during the next scheduled rotation in that room/area.

D. Film Evaluations: These exercises are designed to develop the student's ability to critique radiographs. They include three steps in the process: 1) student critique, 2) review with instructor, 3) review of pertinent anatomy. A variety of evaluation experiences is ensured by requiring specific evaluations in each semester. The student uses the guidelines and forms included in the film evaluation book to complete this weekly assignment. The evaluation form used in the final semester is more detailed and evaluates against a higher standard than in previous semesters. Film evaluations do not have minimum scores established for competency.

Purpose:
1) To develop film critique skills.
2) To review radiographic presentation of anatomy.
3) To review imaging principles which directly impact on film quality.

Process: Each week, the student chooses an exam to evaluate from the required list and then consults the film collection on each site for a set of films for that procedure. The student completes a critique of

these radiographs based on criteria specified for that examination in the film evaluation book. When this is completed, the student will request an instructor to review the student's assessment of film quality according to the same criteria and determine the accuracy of the critique. The film evaluation grade is based on the instructor's agreement with the student's evaluation decisions. Following completion of this process, the instructor will ask the student to identify pertinent anatomy on the radiographs.

Film evaluations completed in the final semester use a more detailed form and ask the student to evaluate the films against "the perfect film" and to make suggestions as to how any less than perfect qualities could be corrected.

Review: Feedback on the student's film critique skills is provided immediately as the student reviews the assessment with the clinical instructor. Review usually takes place on the same day as or within one week of the student's critique.

Remediation: Upon review, the student learns what decisions on film quality were incorrect. Some examinations will be evaluated more than once providing the student the opportunity to practice the critique again. More often, the student will use the same skills to evaluate films from similar radiographic procedures.

E. Affective Evaluations: Affective evaluations are used to assess those program competencies related to professional and ethical behavior. Thirteen areas of competence, ranging from dependability to patient communication and professional competence. A comprehensive narrative establishes the objective base for this assessment and can be found in the Radiography Student Handbook.

Data for this evaluation is gathered from supervising radiographers, clinical instructors, program officials, and other personnel interacting with students. Evaluations serve as a developmental tool up to the point of the final affective evaluation which is considered a competency assessment.

Purpose: To evaluate a student's professional attitude as evidenced by their behavior in the clinical setting.

Process: Affective evaluations are completed twice each semester by those clinical instructors and program officials who have supervised or

received feedback on a particular student. The student is evaluated in each of the 13 areas of competence by choosing the statement which most closely describes the student's behavior during the period of interest. All evaluations completed during the specified period are compiled by the Clinical Coordinator and then presented to each student by one of the program officials.

Expected levels of performance have been established for each Field Experience course and are the basis for formulas which determine the course grade. A student who is meeting, but not exceeding, all expectations for a given semester would receive a grade of 90 on this evaluation. All grades assigned are averaged together for calculation into the semester grade.

Review: Evaluations are reviewed with the student within two weeks of their receipt and compilation for the given period. This review takes place at the clinical site where the student is currently scheduled and is performed by one of the program officials. If the student has questions about any of the criteria, progress notes may be referenced or the student may be referred to conference with the clinical instructor who completed the form.

Remediation: Normally, the forms are evident as to what the appropriate remediation is. In the case of a serious problem or an action which is not directly addressed by the affective criteria, a separate schedule of remediation activities may be developed and documented on the conference record attached to the affective evaluation packet.

III.UNSUCCESSFUL/UNCOMPLETED EVALUATIONS

Since the student must demonstrate competency in all required procedures before completion of the program, any failed procedure competency evaluation must be repeated. A second failure requires additional instruction by the Clinical Instructor and involvement in at least one more examination before a retest occurs.

Unsatisfactory affective evaluation will hold the following consequences:

1. Loss of points on the evaluation, therefore decreasing the clinical grade.
2. Discussion with the a program official occurs to establish a specific plan for correction of deficiencies if the combined affective grade is lower than 85% or any area is scored at the lowest possible rating.

Academic warnings for poor achievement will be issued if the student:

1. Has absence which will affect the clinical grade.
2. Misses more than 2 assignments in each of the following categories:
    a. experiment reports
    b. patient records
    c. film evaluations
3. Has OR competencies remaining after last scheduled OR rotation
4. Has unit rotations remaining after the last scheduled specialty rotation.

Students may be required to complete additional field experience if all competency requirements have not been fulfilled by the scheduled completion of the final field experience course.

ASRT Code of Ethics

A PDF document of this code of ethics is being sent along with the handbook for your reference. The ASRT is the national society for Radiologic technologists and helps to set standards and monitor government regulations of our profession.
It is important to become acquainted with this document to understand what will be expected of you ethically as a registered radiographer.

SIGNATURE PAGE FOR RADIOGRAPHY STUDENT HANDBOOK

As a student enrolled in the Radiography Program at Champlain College, I acknowledge receipt of the Admissions catalog, "The Rudder", and the Radiography Student handbook published by the program. I agree to abide by the policies presented in these publications as a condition of my continued enrollment in the program and the college.

SIGNATURE OF STUDENT _____

PRINTED STUDENT NAME _____

DATE _____