



The University of Utah

Department of Radiology and Imaging Sciences

UNIVERSITY OF UTAH HEALTH CARE

Department of Radiology

Technology Education Programs

**Nuclear Medicine Technology/CT**

2017-18

**Student Handbook**

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## Introduction

All students admitted into the University of Utah Health Care, Department of Radiology technology programs are expected to be knowledgeable of the policies and procedures of the program and clinical education centers that the student will attend.

This handbook is a summary of the more pertinent policies governing a student while participating in the program and useful information you may need in the future. **You are expected to read the policies contained herein and save them for future reference.**

Violation of any of the stated policies WILL result in one of the following: a warning; suspension; probation; or dismissal from the program without an opportunity to return at a later date. Cases of violations will be handled on an individual basis to ensure just and proper procedures. Appeals may be made following the Due Process Procedure.

## Overview

The Nuclear Medicine program is a 15 month hospital sponsored program that is accredited through the Joint Review Committee on Educational Programs in Nuclear Medicine Technology. (October 2010). Upon successful completion of the program the student will earn a certificate of completion in nuclear medicine and eligibility to sit for the national examinations with the Nuclear Medicine Technology Certification Board (NMTCB) and American Registry of Radiologic Technologists (NM-ARRT) and also will be eligible to sit for the national examination for CT-ARRT. The program combines didactic and clinical education that offers the student the knowledge and skills necessary to become a competent nuclear medicine technologist. Clinical education experiences occur at the University Hospital, Huntsman's Cancer Hospital, the Veteran's Administration Medical Center, and Primary Children's. A combination of highly qualified radiologists, health physicists, radiopharmaceutical experts and experienced technologists make up the program faculty. The sponsoring and affiliated medical institutions offer clinical experiences through a competency-based program that has state of the art imaging equipment to include PET/CT, SPECT/CT and cardiology studies. There is a required CT component to the program that occurs during the last 3 months.

## **BS in Health Education and Promotion with an Emphasis in Nuclear Medicine Technology**

The Department of Radiology, University Health Care and the Department of Health Education and Promotion, College of Health, University of Utah have developed an academic agreement that allows University of Utah students who have been accepted into the program to earn college credit for the course offered in the nuclear medicine program and apply to them to a BS degree in H EDU with an emphasis in nuclear medicine technology. The details of this arrangement are outlined in the academic agreement and in the office of Otto Casal, Technology Program Administrator of Radiology. (Education Director)

## **Nuclear Medicine Program Mission**

The nuclear medicine program mission is to provide an accredited, progressive and high quality comprehensive educational program in nuclear medicine technology and computed tomography technology servicing the community and the region.

## **Nuclear Medicine Program Objectives**

The purpose of the nuclear medicine technology program is to prepare graduates who are clinically competent and provide quality diagnostic imaging and therapeutic services to patients while maintaining compassion and respect. Graduates must have a thorough understanding in radiation protection, radionuclides and radiopharmaceuticals, instrumentation quality control, nuclear medicine diagnostic procedures and patient care and management. Graduates will be offered the opportunity to complete education and clinical experiences leading to CT certification.

## **Nuclear Medicine Program Goals**

1. Ensure that 100% of program graduates are clinically competent in diagnostic imaging and therapeutic studies.
2. Graduate competent entry-level nuclear medicine/CT technologists who are effective communicators, problem solvers and critical thinkers.
3. Maintain the following:
  - A credentialing examination pass rate of not less than 80% at first attempt.
  - A job placement rate of not less than 80% within 1 year of graduation.
  - A program completion rate of not less than 80%.
4. Maintain a full accreditation status with the Joint Review Committee on Educational Programs in Nuclear Medicine Technology. (current status granted in 2010)
5. Attain frequent evaluations from the student cohort to assess and ensure effective instruction from faculty, both academic and clinical, and to ensure that the material being given is aligned with current practice within the modality.
6. Graduate students who are satisfied with their nuclear medicine educational experience and feel that it was beneficial to their professional development and growth.

## **Program Evaluations**

To ensure that the program maintains an excellent learning environment for its students the program will conduct evaluations from the student in an on-going manner throughout each academic year and also post-graduation. This is a requirement given to us by the JRCNMT as part of our accreditation standards.

The student will be liable for conducting short evaluations on the programs courses and instructors, both clinically and academically. The evaluation will be given to each student to complete prior to any final examination the student will be involved in. The student must complete the evaluation prior to the exam date or will forfeit their opportunity to sit for the exam.

The program ensures that the student will have ample time to complete this process.

## Computed Tomography Program

### Overview

University Health Care, Department of Radiology, offers a six (6) month certificate program in Computerized Tomography (CT) for certified Radiologic Technologists R.T. (R), Radiation Therapists R.T.R. (T) or Nuclear Medicine Technologists R.T. (N) or NMCTB. Students will learn to create electronic cross-sectional images of anatomy as an aid in the diagnosis of disease and injury using ionizing radiation.

The University Health Care has a wide variety of state of the art Siemens scanners. The program offers a combination of clinical and didactic educational experiences that will provide the student with the necessary knowledge and skills to become a quality entry-level CT technologist. Clinical experiences are completed at University Hospital, Huntsman Cancer Hospital and South Jordan Hospital.

TUITION - REFER TO THE TUITION GUIDELINE DOCUMENT FOR CURRENT TUITION INFORMATION.

Certified radiographers, radiation therapists and nuclear medicine technologists (ARRT or NMTCB) are eligible to take the post-primary certification examination computerized tomography (CT) offered by the American Registry of Radiologic Technologists (ARRT).

### CT Program Mission

To provide a quality entry level educational program in Computerized Tomography (CT) that educates competent CT technologists to meet the staffing needs of the University of Utah Health Care, surrounding community and provide an educational opportunity for out-of-state students. Provide opportunities for nuclear medicine technologists to become competent and certified in CT.

### CT Program Objectives

The goal of the computed tomography program is to educate students to perform the duties and responsibilities of an entry-level CT technologist and produce graduates that will successfully pass the CT post-primary certification examination and work in the CT or PET/CT field.

### CT Program Goals

1. Ensure that 100% of the program graduates have completed the *clinical experience requirements* as specified by the American Registry of Radiologic Technologists.
2. Graduate competent entry level CT technologists who are effective communicators, problem solvers and critical thinkers.
3. Maintain the following:
  - A credentialing examination pass rate of not less than 75% at first attempt.
  - A job placement rate of not less than 75% within one year of graduation.
  - A program completion rate of not less than 80%.
4. Graduate students who are satisfied with their CT education experience and feel it was beneficial to their professional development and growth.

**University of Utah Health Care  
And other approved affiliate institutions  
Clinical Education Centers**

University of Utah Hospital  
(Nuclear, MRI, CT, Vascular)  
50 N. Medical Drive  
SLC, UT 84132  
581-2115

Primary Children's Medical Center  
(MRI, CT)  
100 N. Mario Capecchi Dr  
SLC, UT 84132

Veteran's Administration Medical Center  
(Nuclear)  
500 Foothill Drive  
SLC, UT 84148  
584-1225

Imaging and Neurosciences Center  
INC (MRI, CT)  
Research Park  
SLC Utah 84132  
(801) 465-7089

Huntsman Cancer Hospital  
(Nuclear, CT, MRI, Vascular, Mammo)  
SLC Utah 84132  
Orem, UT 84057  
(801) 714-6526

South Jordan Health Center  
5126 W Daybreak Parkway  
South Jordan, UT 84095

Orthopaedic Clinic  
(MRI)  
Research Park – Wakara Way  
SLC Utah 84132  
801- 587-5345

Clinical Neurosciences Center (CNC)  
Building between the University Hospital And  
Hunstman (Old Moran)

## Clinical and Classroom Attendance

The technology program administrator (Otto Casal) will establish and distribute a classroom schedule at the time of orientation.

The nuclear medicine program mainly hold classes during the first semester of the program to ensure background knowledge in radiation protection and patient care. For the remainder of the program, with some slight variance occurring the class days will be on Monday and Wednesdays (am) and clinical education on Tuesday, Thursday, Friday to equal approx 28-36 hours a week. **Students may not complete the program early.** The clinical start and end times will vary. Refer to the clinical manual for current information. A one week Radiopharmacy rotation is required and runs 4:30 am – 11:30 am.

For CT competencies, when counting total number of competencies you cannot count any exam that has one of two sign offs, a minimum of 2 is required.

The CT program will have one scheduled class day on Wednesdays 9:00 – 1:00 and clinical time is arranged. The student strives to complete a total of 450 clinical hours and a minimum of 25/59 CT examinations with a minimum total of 125, before a certificate of completion can be granted. The nuclear medicine students will be required to complete an additional clinical rotation in CT at the completion of the nuclear medicine curriculum. Students may be able to exit clinical with less than the required hours if the competencies are completed and clinical evaluations are above average. The technology program administrator has the final decision on early completions.

## Student Employment Policy

Many students may work part-time jobs. You must ensure that the job does NOT interfere with school schedules. The MRI and CT programs offer flexible clinical rotations. The nuclear medicine program requires strict adherence to attendance schedules.

### Nuclear Medicine

Nuclear Medicine students cannot be hired to work in the department until they have completed the program and are registry eligible for the NMTCB and/or ARRT examination.

### CT

In the event that a CT position becomes available through the University of Utah Health Care, a student who is currently enrolled full-time within the CT program who has satisfied the following criteria, may be eligible to apply and be hired for the position. The student must have successfully completed fifty percent (50%) of the total didactic and clinical program to include:

1. Fifty percent of the didactic classes (CT).
2. Two hundred twenty (250) clinical hours (CT).
3. Fifty percent of required competencies (CT).
4. Passing scores on all didactic modules and/or sections.

In addition, the student must:

1. Be a student in good standing.
2. Have the managers select them for the position.

In the event that the student is awarded the position, the following guidelines will apply:

1. The student will continue to complete their clinical education hours and be paid at a rate determined by the manager.
2. The student will work additional hours in the modality as agreed upon by the student and the manager.
3. The student will continue in a learning capacity, completing their competencies but will also assist in the overall function of the department they are assigned to under the direction of the manager or designated mentor.
4. The student will be released from clinical to complete didactic hours but they will NOT be paid during those hours.

In exchange, the student will be asked to:

1. Complete and successfully pass the appropriate certification examination within 6 months of program completion.
2. Complete all required clinical competencies.



## **Academic Guidance and Personal Counseling Services**

### **Academic Guidance:**

Students are encouraged to discuss their academic progress with the instructor who is teaching the unit. In the event that the student feels the discussion is not to their satisfaction, they are encouraged to discuss the situation with the program director and/or the Technology Program Administrator. Final decisions pertaining to academic grades/ and or instruction are granted to the technology program administrator. An appeals process is in place for students who want to appeal a grade and/or programmatic decision (See Appeals).

### **Nuclear Medicine Program Academic and Clinical Progress**

The nuclear medicine program is accredited by the JRCNMT and is more structured and formal in terms of grades, transcripts and documenting progress. At the completion of the program students will receive a certificate of completion and a University of Utah Health Care transcript that has grades for each of the courses/sections the student completes. The NMT Emphasis students will have the nuclear medicine courses and grades posted on their official University of Utah transcript to include the CT courses.

Students are admitted to the nuclear medicine program on the basis of their demonstrated ability to successfully complete both didactic and clinical education. Students must complete each course or section with a C- grade or better and obtain passing clinical scores with an overall 73% or an average of (3) or better. Failure to do so is terms for probation or dismissal depending on the severity, the number of units involved and student status in the program. An instructor has the right to scale the scores if a satisfactory distribution is not met.

Grading and counseling sessions are conducted on an ongoing basis to include the following:

- Clinical evaluations completed at the end of each rotation
- Quarterly clinical evaluations completed 4 times through the program
- Testing and percentage grades are granted at the end of each course/unit.
- Updated transcripts with grades are distributed at the end of the Fall, Spring and Summer (CT) sessions.

### **CT Programs**

Students are routinely given quizzes and practice exams which will provide them feedback on their progress. Success in the programs is largely due to the amount of time and effort the student wants to put into the program. Grades in the CT program are governed through quiz and exam scores. The student is preparing for the boards and successful passing of the boards is the common goal between the program and the students. College credit is not granted for the CT program and there is no official transcript. A certificate of completion is awarded to all those who successfully complete the program.

For NMT emphasis students, the CT portion of the nuclear medicine program will appear on an official transcript and the student will be granted a grade for CT Anatomy and Procedures, CT Physics and CT Clinical Education.

The following constitutes the scale for percentage to grade conversions for academic units:

- 93-100 A
- 90-92 A-
- 87-89 B+
- 83-86 B
- 79-82 B-
- 75-78 C+
- 73-74 C
- 70-72 C-
- 69-69 D+
- 68-68 D
- 0-67 E (Failure)

Students must pass each course or unit with a minimum of C- or better and earn overall acceptable evaluations in clinical education, however repeated C- grades or below 70% on clinical evaluations is not acceptable overall progress and will be terms for warning, probation or dismissal from the program. It is recognized that students may have difficulty in a course of study, however, repeated difficulties in many courses is not acceptable as the student is demonstrating that they will not be able to pass the NMTCB and/or ARRT and a grade better than a C- or 73% in clinical education compromises patient care. With that understanding, the following guidelines in regards to academic and clinical progress will be enforced: Students who earn:

1. A C- grade will be placed on warning.
2. Lower than a C- in one course/unit will be placed on probation and provided one opportunity to retake the course and/ or complete extra credit to earn a higher grade.
3. One quarterly clinical evaluation\* that is below average and equates to a C- or below is terms for probation.
4. Two C- grades in courses will be terms for probation.
5. Two quarterly clinical evaluations that are below average and equate to a C- or below is terms for dismissal from the program.
6. Two C- in courses and one below average quarterly evaluation is terms for dismissal from the program with no chance for enrolling at a later date.
7. Three or more below average clinical evaluations from the technologists in terms for dismissal.
8. Three C- grades in courses/units is terms for dismissal.
9. A dismissal will not be allowed to reenter or apply at a later date and relinquishes any tuition refund.
10. Final decisions on dismissal may be petitioned through due process.

\* Clinical evaluations are completed by the technologists the students are working with and it is policy to accept their judgment if the student is performing at an acceptable clinical level or not.

#### Personal Counseling Services

In the event that a student is having personal difficulties in which they may need assistance with, they are encouraged to discuss the matter with the program director or the technology program administrator who will assist the student in finding appropriate services.

## Radiation Protection Policies and Radiation Monitoring Service

All policies related to Radiation Protection are determined by the Radiation Safety Office of the University of Utah. Students will be required to complete educational sessions in Radiation Safety prior to their clinical education. Students will be issued dosimeters if they work in Nuclear Medicine or CT.

### Dosimeter Types

There are two types of dosimeters used here at the University of Utah.

The Luxel® - This type is worn as either a whole body badge, a waist badge, or a badge worn at the collar. The whole body badge is worn between the shoulders and waist with the person icon facing outward. The collar is to be worn outside of a lead apron to estimate exposure to the lens of the eyes. The waist badge is worn in conjunction with the collar badge and is worn under the lead apron.



TLD Extremity Rings - Worn with the label facing the palm of the dominant hand. If you are wearing gloves this ring is to be worn under the glove.



### Dosimeter Wearing Requirements

#### Personnel Issued a Dosimeter

Radiation workers (full and part time workers) who operate fluoroscopy units are required to wear one (typically a whole body badge) or more dosimeters. Other radiation workers who operate x-ray machines, administer radiation therapy, or are exposed to other sources of gamma or high energy beta radiation are generally required to wear one or more dosimeters.

The following table provides general guidelines on determining the need for a dosimeter, for those radiation workers who handle radiation sources or dispersible isotopes. If you have not been issued a dosimeter and feel that you should have a dosimeter please call our office (581-6141). Dentist, Dental Hygienists and Dental Technicians are not typically issued dosimeters since the expected doses to those personnel do not warrant issuing them a dosimeter. The same is true of workers operating closed cabinet x-ray units or x-ray diffraction units. However, a worker may request a dosimeter at any time.

<b>Isotope</b>	<b>Activity used per month</b>
3H	no badge issued
14C	no badge issued
32P	5 mCi
33P	45 mCi
35S	no badge issued
86Rb	5 mCi
125I	9 mCi

**Only personnel likely to receive 10% of their yearly dose limit are issued a badge. However if you would like a badge issued please call Radiological Health @ 1-6141**

#### **Wearing a whole body dosimeter**

Radiation users issued single whole body badges should wear them between their collar and waist with the label facing out.

Users of fluoroscopy units should have two badges, a collar badge and a waist badge. The collar badge will have a black icon and must be worn on the collar outside of the lead apron. The waist badge will have a yellow icon and must be worn under the lead apron at waist level. The purpose of the two badges is to provide additional information for accurately determining the effective dose equivalent received by fluoroscopy users wearing protective lead aprons, and to also assess the absorbed dose to the lens of the eye.

Persons issued radiation dosimeters are required to wear them **at all times** when working with radiation sources. When not being worn, they must be kept in a location protected from radiation and heat.

#### **Wearing a ring dosimeter**

The ring badge should be worn on a finger with the label facing the radiation source, i.e. toward the palm of the hand where the highest exposure is presumed to occur. Protect the ring badge from contamination (any type of contamination including biological, chemical or radioactive) by wearing it inside a glove. Check the badge as part of your routine survey for personal contamination. Ring badges are available in small, medium and large sizes; if a ring doesn't fit, please request a different size!

Persons issued radiation dosimeters are required to wear them **at all times** when working with radiation sources. When not being worn, they must be kept in a location protected from radiation and heat. Note: A finger ring badge is a supplemental badge and will only be issued in conjunction with whole body dosimeters.

## Dosimeter Issuing and Termination

### Issuing - How do I get a dosimeter?

New personnel or personnel who wish to request a dosimeter, who will use radiation sources must complete the "[RADIATION USER PERSONAL DATA](#)" form (RPR 1), if they have not done so already. When the Radiation Safety Office determines that a dosimeter is needed, it will be issued in approximately two weeks.

### Termination - How do I terminate a dosimeter?

Responsible users or Supervisors should ensure that individuals leaving their group or department, return their final dosimeters and notify Radiological Health of the employees termination from the program ([user termination checklist RPR 1C](#)). Dosimeters provided beyond the month of termination due to lack of notice may be subject to an additional charge billed to the departments account.

If you have any questions about dosimeter use or exchange, please contact our department at 581-6141.

## Dosimeter Limitations

### Detection limits –

**LUXEL+®** - The smallest amount of radiation that can be measured with a LUXEL+® is 1 mRem.

TLD – The smallest amount of radiation that can be measured with the TLD ring is 10 mRem.

**Luxel+® and TLD's** will only detect Gamma and mid to high energy Beta particles. They will not detect Alpha particles, low energy Beta particles, or Neutrons (special dosimetry can be purchased from our dosimetry contactor for neutron dosimeters).

**Luxel+®** dosimeters will only measure external radiation, it does not measure internal radiation uptakes. If you have questions about internal deposition please call our office at 1-6141.

## Dosimetry Instructions for Potentially Pregnant Workers

Current occupational radiation control rules impose a special dose limit specifically for the unborn child (embryo/fetus) of any radiation worker who formally declares her pregnancy. This dose limit is **500 millirem** during the entire term of the pregnancy. This is because the embryo / fetus is more sensitive to the potential harmful effects of radiation, the dose limit is a fraction of the occupational dose limit. These limits are well under doses at which harmful effects have been observed. It is also *recommended*, as a further precaution, that the dose to an embryo/fetus be further limited to no more than 50 millirem per month. Normally the dose limit for a non-pregnant radiation worker is 5000 mrem per year.

A pregnant radiation worker *is not required* to declare her pregnancy. However, for the RSO to apply a lower dose limit, and implement any control measures or issue dosimetry, the pregnancy must be declared in writing, providing the month and year of conception to the [Radiation Safety Officer](#) and the worker's supervisor.

Dosimetry is not always necessary for a *declared pregnant radiation worker*. If you would like to discuss this with a health physicist, please do not hesitate to contact our office at 581-6141.

[Additional information on this website for Pregnant Workers](#)

### Is there a special dose limit for pregnant workers?

The embryo-fetus is more susceptible to radiation effects than an adult and is, therefore, subject to a lower dose limit. The dose limit for the embryo-fetus is 500 millirems during the entire gestation period. As a further precaution, it is advisable to keep the monthly doses below 50 millirems. This degree of protection for the embryo-fetus can only be achieved with the cooperation of the employee and her supervisor, she should notify her supervisor as soon as the pregnancy is known. The limit is enforceable only if the pregnant employee gives written notice to the RSO and to her supervisor, who

shall also notify the RSO. Please see our [Pregnant Radiation Worker](#) page. The declaration may be withdrawn at any time for any reason, to withdraw the declaration the RSO must be notified in writing of the employee's wishes.

### **Student Pregnancy Policy**

The student has the right to not declare pregnancy and remain in the programs with no modification option.

Pregnancy during the course of the programs may present problems for program completion at the expected time. If the student continues to attend both class and clinic as scheduled during her pregnancy, minimal disruption will occur. If the student has difficulty maintaining the routine schedule of the program, advancement and completion will be jeopardized. It is the policy of the programs to be supportive to pregnant students. The student must understand that all program requirements must be completed in order for her to graduate and receive a Certificate of Completion.

#### **For students enrolled in any of the educational programs:**

Due to the potential danger to an unborn fetus from ionizing radiation, especially during the first trimester, the student is encouraged to inform the Technology Administrator, Program Director or any other member of the technology programs if they expect a pregnancy. Occupational MRI exposure to the fetus is considered safe, however, because MRI is a relatively new technology, all of the radiobiological questions are not completely answered. Pregnant health care practitioners are permitted to work in and around the MR environment throughout stages of their pregnancy however they are requested not to remain within the MR scanner room during actual data acquisition/scanning itself.

If the student declares a pregnancy, plans for program continuation and completion must be made. The student has the following options:

- A. Remain in the program as scheduled. This option requires the following:
  1. All courses must be completed with passing grade. Continued attendance and successful progress must be maintained.
  2. The student's clinical rotation will be monitored so that the student will NOT receive unnecessary radiation.
  3. The student will be allowed a leave of absence in length as agreed upon by the student and the program and in accord with the policies of University Health Care, Hospitals and Clinics. The student is encouraged to return to the classroom at the earliest possible date.
  4. If the student wishes to complete courses as scheduled, she must attend class on an ongoing basis during and after the pregnancy.
- B. The student may choose to take a leave of absence until after the pregnancy. The terms for this are as follows:
  1. The student will be allowed to take a leave of absence for a period of one year. At the end of the year, she must reenter the program as a full-time student or relinquish her position in the program.

2. Once a student voluntarily withdraws from the program due to pregnancy, she must reapply to reenter.

It is both policy and practice of the program and the clinical education setting to offer the utmost radiation protection to student technologists. The program will NOT assume liability in any case of pregnancy. Should a pregnant student choose to remain in the program, the program members will provide support to the student's completion of the program. The student will be given an additional radiation monitoring badge for the fetus and will be monitored so that the dose limit in one month does not exceed .05 rem and the total dose limit does not exceed .5 rem.

### **Dosimetry FAQ's**

#### **What does the dosimeter do?**

A radiation dosimeter measures the amount of high energy ionizing radiation a person has been exposed to during the wear period. These radiations include gamma radiation, x-radiation and high-energy beta radiation (such as P-32). The radiation dosimeter will not detect low energy beta emitters such as C-14 and H-3, therefore as a rule radiation workers using these isotopes will not be issued a dosimeter. The Dosimeter **does not** provide protection from radiation

#### **How do I apply to get a dosimeter?**

Complete [RPR form1A](#). Please call Radiological Health at 581-6141.

#### **When do I return my dosimeter?**

Dosimeters are exchanged every month. If dosimeters are not received by the second working day of the month, please call Radiological Health at 581-6141.

Dosimeters must be exchanged promptly and returned to our department within 5 working days so we can mail them to the processor in a timely manner.

Dosimeters that arrive in our office after the 5th working day of the month they are due are considered to be late and will be assessed a \$10 fee. Dosimeters returned more than 30 days late, or damaged, or misused in any way that invalidates the reading, are considered to be lost and will be assessed a \$15 fee. The fees are billed to the department, which is responsible for obtaining reimbursement from the individual.

#### **What are the dose limits for Radiation?**

The occupational whole body dose limit is 5,000 millirems per year for radiation workers, effective dose equivalent. The dose limit to the extremities (hands, fingers, etc.) is 50,000 millirems per year.

**Lost and Damaged Badges** – Lost and damaged badges must be reported to the Department of Radiological Health as soon as possible @ 1-6141

**Sharing badges** – You should never use a badge other than your own, all badges are directly link to *the* individual's dose of record.

**Do not expose your badge intentionally.**

**Do not wear it when you receive medical or dental procedures.**

## **Disciplinary Policy**

### **General Policy:**

The program strives to provide for an effective education of all students. Under program policies, disciplinary actions and terminations are expected to be handled in a manner to achieve the least adverse effects for the student and program.

In general, disciplinary sanctions will occur in the following order:

1. Student will be warned of infraction through discussion and a written contract will be created by the program faculty and the student which states the required expectations to correct the problem and the penalties if not resolved.
2. Failure to meet expectations will result in suspension and/or grade change or the penalty as stated on the written contract.
3. Repeated infractions are terms for dismissal even if they are unrelated.

### **Student Disciplinary Problems:**

Under circumstances which demonstrate the student's inability or unwillingness to meet his or her student responsibilities, sanctions WILL result for any of the following reasons: (BUT ARE NOT LIMITED TO THESE REASONS)

1. Negligence
2. Unsatisfactory progress
3. Excessive or unauthorized absence (AWOL)
4. MISUSE or misappropriation of college, program or clinic property
5. Disorderly conduct
6. Falsification of any type of documentation
7. Use of, or being under the influence of, alcohol or drugs while in the clinical or classroom setting.
8. Insubordination
9. Unjustified interference with the work of others
10. Conviction of a crime by a court of competent jurisdiction
11. Dismissal from a clinical education setting
12. Refusing to follow supervising decisions in the clinical education

Students who intend to terminate their status on a voluntary basis are encouraged to confer with the technology program administrator or modality specific program instructor. .



## **Student Grievance Procedure**

In pursuing an education and attending the University Health Care and affiliated clinical education centers, the student should be free of unfair and improper action by any member of the Hospital community. A grievance is a claim or charge of injustice, oppression or discrimination affecting the welfare or conditions of a student or group of students. Any student who feels that he or she has been denied rights by any member of the Hospital community can file a grievance action which is treated less formally than in a court of law. The purpose of a grievance hearing is to seek a workable solution to the problem without putting anyone on trial.

Should a problem arise with another individual (fellow student, supervising technologist, ancillary staff, etc.), the student is encouraged to discuss the issue directly with the involved individual with the goal of seeking a workable solution. If the problem is unresolved, it should be brought to the attention of the on-site clinical instructor. In the event of an unsatisfactory response, the student should consult the program faculty and/or the technology program administrator. Concerns regarding the actions of the radiology faculty should be directed to the technology program administrator. Concerns regarding the technology program administrator should be directed to the Director of Patient services in Radiology.

Should the student feel a problem is unsatisfactorily resolved, he or she should refer to the Procedures for Due Process.

### **Due Process**

If a student wishes to appeal a decision of the program administration, they have 48 hours from the time the infraction occurred to the time they must inform the technology program administrator that he/she is going to appeal the decision by telephone, e-mail or letter. This process should be reserved for the most serious of infractions to include dismissal from the program, removal from a clinical education center or other serious educational issues.

The technology program administrator will organize a meeting of the advisory committee no later than 7 days after the appeal has been made. During the appeal meeting the following will occur:

Technology Program Administrator will open the meeting by telling the advisory group that they are here to listen to the student's appeal of the programmatic decision which occurred on the date it happened and involved what actions.

A non-voting administrative person will take over the meeting ensuring that everyone abides by time standards and rules. The student has 20 minutes of non interruptive time (maximum) to present to the committee his/her appeal. The Board will have an opportunity to ask the student questions. During this time the student will not be allowed to ask questions of the board.

At the completion of the question phase, the student will be excused, while the advisory committee deliberates. The board will deliver a decision in writing through e-mail to the student within 24 hours.

The student has 24 hours to decide if they want to pursue the appeal to the next and final level which is the administrative committee chaired by the Radiology Chairman.

If the student appeals to this level, the process repeats itself and all decisions are final.

## **Policies and Procedures of Clinical Education**

### **Introduction**

The clinical experience is crucial to the development of confident and competent technologists. It is in the clinical environment that the student is given the opportunity to demonstrate clinical competency and assimilate further skills and knowledge. Do not forget that you are representing the University of Utah in the medical community!

One of the most important aspects of the program is the clinical experience. It is here the student applies what has been taught in the classroom and becomes accustomed to medical procedures while developing lifelong professional habits. It is also here that the student often has a tendency to be shy and reluctant, especially during the initial phases of the program. **DON'T BE!!** In being motivated and assertive, you will progress at a much greater pace. Much of your participation will be dependent upon how you strive to learn and master the clinical skills.

Clinical experiences are an educational process that requires responsibility. In order to complete training, your interaction and performance is essential. The technologists you are working with are also your didactic instructors and deserve respect, patience and team assistance when appropriate.

### **Professionalism and Electronic Devices**

#### **Classroom:**

The use of electronic devices such as, but not limited to: mobile phone, laptop, tablet, audio recorders must be approved by the instructor before they are used in the classroom setting. Also, any student using a laptop with internet capabilities must subject the device to the University of Utah Hospital encryption policy and must contain encryption software. There are **NO** exceptions to this rule. Devices that are not liable under this policy include mobile phones and tablets.

#### **Clinic:**

The use of electronic devices such as, but not limited to: mobile phone, laptop, tablet, audio recorders are **NOT** permitted while the student is in any clinical area. If there is an emergency or if you are expecting a call please inform your clinical instructor and exit to the hall to take the call.

Cell phones can be referred to on breaks and lunch-time. Department numbers are to be distributed for emergencies and concerns not routine conversation. If you are wearing a University of Utah badge and checked in for clinical, head sets are not acceptable. No personal use of University computers is allowed while on clinical or reading of personal literature to include magazines or novels.

If the student fails to comply he/she is liable for any disciplinary actions that occur (see Disciplinary Procedures, pg. 16)

### **Attendance**

The social and economic demands of the student are appreciated. However, the basic requirements are to be met by all! All students will be expected to complete the same number of clinical hours and complete all clinical competency requirements. Clinical schedules will be made in advance and posted in the department. If a student is unable to attend clinic or class on any assigned day, they must notify the appropriate manager for the area they were assigned to. Failure to call in is considered an unexcused absence, and **WILL** result in disciplinary action. Students will not be scheduled for more than forty hours per week of combined class and clinic. Any alteration of the clinical schedule must be approved by a site manager or the technology program administrator. **Dependability and responsibility is expected!!**

### Clinical Shifts

Clinical shifts for the MRI and CT programs are arranged through the program directors and/or clinical instructors. No amount of communication is ever too much. This is a large institution with many managers and area supervisors so at the least ensure that your immediate supervising technologist knows where you are or why you are not there.

### Time Missed

If a student must miss clinical due to illness or other reasons they must notify the site manager prior to the starting time of clinical. If a student knows ahead of time that they will miss clinical, they are required to inform the appropriate site manager or clinical instructor.

#### **Nuclear Medicine Students:**

**Nuclear medicine students are required to make-up all time they have missed clinically with the exception of 1 sick day a semester for a total of 4 throughout the program.** If the student does not use their sick day, they may add it on to their upcoming class break with the exception of the last semester where all students will remain in clinical until the last day. Nuclear medicine students are not allowed to terminate the program earlier than the scheduled program end date. Students are also not allowed to “bank hours” unless they have a scheduled time in which they need to miss class and clinical due to an arranged plan such as a marriage, birth, family reunion, etc.

#### **CT Students:**

CT students work on a positive hour curriculum. The hours they work are recorded until they reach their designated hourly requirement. Unlike, nuclear medicine, CT students are allowed to terminate the program earlier if all time, competencies and evaluations are positive. Classes will continue until they end of the program and attendance is mandatory.

Students must complete all clinical requirements to include hours, evaluations and competencies in addition to having all of their tuition paid off before a Certificate of Completion will be granted and their ARRT or NMTCB application will be signed.

### Attendance/Documentation

The student has a monthly calendar where they enter their hours on a daily basis and the time is verified by the supervising technologist by entering their initials. Students please ask the technologist you are working with if they would prefer to sign your hours at the end of each day or the end of the week. At the end of the month, CT and MRI students add up their time, circle the hours and hand the documentation to Otto Casal personally or slide it under his office door. Nuclear medicine students will also add up their clinical hours and indicate at the bottom if any hours are DUE or if a sick day was used. To be granted a sick day, the technologist who received your call or was informed will need to sign your attendance sheet. If the student is sick more than 3 consecutive days, a doctor’s excuse must be brought in. The technology program administrator will monitor contact hours, clinical competency and clinical experience requirements. Submit all documentation to Otto Casal.

### Leave of Absence

An LOA will be granted only in extreme circumstances of personal or health problems at the discretion of program faculty. Terms for completion of the program will be made after the student returns from LOA.

### Vacations

For nuclear medicine, it is hopeful that most personal vacations will be taken on scheduled breaks. If the student takes additional time, they will be held responsible for completing the total number of required contact hours by the end of the semester. MRI and CT are on a positive hour requirement and are free to be flexible with their clinical hours however, they will miss class time that could affect their progress.

### Holidays

Students will receive the same Holidays as other University of Utah HealthCare employees.

### Dress Code

In general, the clinical attire should be professional, conservative, and in compliance with the dress code of the department in which they are attending for clinical education. Each institution has similar standards, but they vary slightly. **Each institution has the right to determine if dress or behavior is considered appropriate.** Jeans and T-shirts are generally unacceptable. Hair styles, nail care, jewelry and perfume must be conservative. Scrubs are allowed. Some institutions do not allow, or limit, body and ear piercing. Long hair MUST be secured back away from the face, false fingernails are unacceptable and tattoos must be covered. There is a specific Professional Attire Guideline document that you should refer to.

Please refer to the University of Utah's Professional Dress Code: [UU DRESS CODE](#)

### Incident Reports

It is the student's responsibility to notify the site manager and technology program administrator any time they are involved in an incident (any unusual or potentially liable activity involving a patient) in the clinic. The site manager will assist the student in completing the appropriate paperwork and reports. The completion of an incident reports are essential when incidents occur.

## Communicable Disease Policy

### Education

At the beginning of the nuclear medicine program, prior to the student attending a clinical education, training regarding infectious diseases, infection control and standard precautions will be provided. The educational session will cover how diseases are transmitted, general principles of infection control, personnel protection, and standard precautions. The diseases discussed will include, but are not limited to: HIV, AIDS, TB, Hepatitis B, Measles and Chicken Pox.

The students are required to implement standard precautions when dealing with all patients and body substances and to use barrier techniques for all persons whether or not they have been diagnosed with an infectious disease.

All clinical education centers will make available to students personal protective equipment such as gloves, gowns, face shields, masks, eye protection, disposable mouthpieces, resuscitation bags or other ventilation devices. The technologists will be responsible for orientating students to the location of the protective equipment and will encourage its use.

### Immunizations

**All students are required to turn in documentation of immunization records to employee health center of the University of Utah Hospital, which is located on the A Level.**

**Please refer to the policy below:**

Please see the following University of Utah Hospital policy on immunizations below:

*University of Utah Hospitals and Clinics policy states that all employees will complete mandatory immunizations or provide documentation of immunizations within 15 days of hire. This policy is enforced to protect our patients and also to ensure compliance with state and federal recommendations/regulations. Individuals who are not compliant with requirements may be subject to removal from the work schedule, and/or discipline up to and including suspension of clinical privileges and/or termination.*

***What you need to do:***

***Visit the Employee Health Clinic located on the A level of the School of Medicine to obtain necessary immunizations or to bring proper documentation of immunizations. This documentation will be placed in your employee health record.***

However, if you do not have any documentation of prior immunizations we can draw blood to check immunity.

Please refer to the Occupational and Environmental Health and Safety Policy (Policy 3-300):

[UU POLICY 3-300](#)

## **ARRT and BLS Documentation**

Students are responsible for providing documentation of current CPR certification and ARRT certification, if appropriate to the technology program administrator the first week of class.

### **Protocol for Needle Sticks or Exposure to Infectious Disease**

If the student is exposed to an infectious disease either by the exposure to a body substance or a needle stick, she/he must complete the following protocol:

- Notify the appropriate site manager.
  - Report to the emergency room or appropriate clinical department
  - Follow the emergency room protocol for exposure to an infectious disease, which may include blood testing, evaluation, counseling and documentation.
  - Assist in the proper documentation of the incident.
  - Notify the technology program administrator of the occurrence

If the student contracts an infectious disease, the appropriate action is a “common sense” approach. If the possibility exists to infect a patient or co-worker, the student should NOT report to the clinic until the risk subsides.

## **Health Insurance and Workers Compensation**

Health Insurance: Students, UHC faculty and Program representatives shall be responsible for their own health insurance.

Liability Insurance: The State Division of Risk Management provides professional health care liability (malpractice) insurance to U of U Radiology students while they are placed in approved clinical training programs. This does NOT include out-of state facilities.

Worker’s Compensation: UHC is not responsible for any Worker’s Compensation or disability claim filed by a student. The students are not employees of UHC unless hired under a separate arrangement.

## Supervision Policy

The supervision policy has been developed in order to ensure quality clinical education and safe, effective patient care.

Until a student achieves and documents competency in any given procedure, all clinical assignments shall be carried out under the direct supervision of qualified practitioners. Direct supervision includes:

A qualified practitioner reviews the request for examination in relation to the student's achievement.

A qualified practitioner evaluates the condition of the patient in relation to the student's knowledge.

A qualified practitioner is present during the conduct of the examination

A qualified practitioner reviews and approves the procedure.

In support of professional responsibility for provision of quality patient care and radiation protection, unsatisfactory procedures shall be repeated only in the direct presence of a qualified practitioner, regardless of level of competency.

After demonstrating competency students may perform procedures with indirect supervision. This is defined as

That supervision provided by a qualified practitioner immediately available to assist students regardless of the level of student achievement.

Immediately available is interpreted as the presence of a qualified practitioner adjacent to the room or location where a procedure is being performed.

In order to provide the optimal learning environment for students and provide maximum safety to patients, the following policies apply:

1. All students must work under the direct supervision while completing their educational assignments within the clinical education setting until they have proven competency on each procedure.
2. The requirements which must be followed sequentially are:
  - a. observation of examination
  - b. assistance with exam to technologist
  - c. complete exam under direct supervision several times
3. Once the student has completed requirements from #2, they may pass off competency for procedures.
4. When students have documented competency in specific procedures, they are eligible to perform those procedures under indirect supervision.

5. The student has the right to request adequate assistance to complete a procedure if they are uncomfortable with their ability in specific situations.
6. Students shall not be used to substitute for regular staff.

### **Competency Based Clinical Education**

It is the intent of the programs to provide a format for the evaluation of clinical performance. This approach provides the student with the opportunity to progress at an individual rate consistent with his or her ability, knowledge and motivation so as to ensure meaningful clinical participation.

To ensure clinical competency of all procedures, the system involves completion of:

- Attendance requirements
- Completion of specific objectives
- A process of learning and participating
- Evaluation while performing examinations on patients
  - Demonstrated competency and repetition of competencies from a very specific list of examinations pertinent to area of study.

All areas covered will include:

- Class discussion
- Observation of procedures
- Assistance to technologists during procedure
- Completion of exam under supervision

Note: each program has their own separate standards and requirements for clinical competency which is included and explained in the clinical competency manuals.

### **Conduct**

#### **Clinical Evaluations**

Part of clinical education requires students to be evaluated for progress and attributes. Students will be evaluated monthly or at the end of a rotation. The technologist will complete the evaluation and either return it to the student or the designated clinical instructor. All evaluations are intended to assist the professional growth of the student. Please accept them as constructive. If a student feels they have been evaluated unfairly, they can discuss this with the technology program administrator.

#### **Comments on Conduct**

You are entering a profession. You have a rare opportunity to start a new beginning. Use it wisely. From the day you start class and walk into the clinical affiliates, new opinions and impressions are being formed of you that could impact your new profession. If you have a complaint or problem, discuss it with the appropriate manager or the technology program administrator so that it can be resolved. Criticism aggravates anxious feelings and is not conducive to learning or quality patient care.

It is important to remember that as a student, one may not always recognize the reason for a certain direction from a supervising technologist. However, it is expected that a student will follow the directions of an immediate supervisor or staff technologist first and inquire as to the reason after the fact. Failure to abide by these requirements concerning responsible behavior can result in either



probation or dismissal. Students should have a courteous, pleasant and positive relationship with patients, physicians, technologists, fellow students and faculty at all times.

The clinical education centers have the right to refuse or suspend students' clinical education from their facility if the student is viewed as problematic. If a student is removed from a clinical education center, one of the following will occur depending on the reason for the dismissal.

- Dismissal from the program
- A disciplinary contract establishing deficiencies, expectations and potential penalties
- If a student is currently under a disciplinary contract when they are dismissed from a clinical education setting, dismissal from the program will occur.

### **Relationships**

All relationships should be based on mutual respect

#### Student-Technologist

Many times technologists must concentrate on their work during peak periods to such a degree that the student may feel that they are receiving little directed attention in the clinical environment. Patient care is always our number one priority and students will quickly fall into the workflow of the department.

#### Student – Student

Students should make every effort to get along with their peers. You will assist each other as students and compete for jobs as colleagues.

#### Student – Modality or Site Managers

Site managers are lead technologists in the field. Students should pay due respect to all managers and technologists. If the student feels the respect is not mutually given, please discuss the situation with the technology program administrator.

#### Student – Instructors

Students must realize that instructors have accepted this assignment on a voluntary basis. They also have patient care responsibilities they must complete. I am sure you will be very pleased with the quality of our curriculum and the commitment of our instructors.

### **Satisfactory Progress for NMT/CT Program**

A student must maintain satisfactory progress in order to remain in the program. Satisfactory progress would include the following:

- Passing all courses/sections with a "C-" or better grade
- Completion of Clinical Competency requirements
- Completion of the required amount of clinical hours
- Be a student in good standing which is without cited incidents which may have placed them on probation

## **Graduation Requirements Nuclear Medicine Program**

In order to receive a Certificate of Completion and be eligible to sit for registry examinations conducted by the Nuclear Medicine Technology Certification Board (NMTCB) and the American Registry of Radiologic Technologists (ARRT-NM/CT), students must:

- Successfully pass each unit/course or complete remedial study and retesting as directed. See specific guidelines for nuclear medicine discussed under the academic guidance section.
- Complete the required nuclear medicine clinical competencies, clinical contact hours, without terminating the program, clinical experiences and acceptable clinical evaluations.
- Complete the required CT clinical experiences and clinical contact hours.
- Be in good standing as outlined by the Policy and Procedure Manual
- Complete all tuition liability.

## **Computed Tomography Academic and Clinical Performance**

In order to receive a Certificate of Completion students must:

- Maintain satisfactory progress in courses.
- Complete the required number of clinical hours (440) or considered competent and completed by program director or technology program administrator.
- Complete the *ARRT clinical experience requirements*.
- Complete all didactic courses.
- Complete the minimum requirements of clinical competency:  
Students need to submit online the *clinical experience requirement* documentation form with the appropriate signatures and number of cases in order to be eligible to complete the ARRT CT exam.

## **Tuition and Financial Aid**

The emphasis and certificate student will both pay a total fee of \$6,400 for four (4) semesters of didactic and clinical studies for the 2015/2016 academic year. To determine the total cost for the emphasis student, tuition must be included. Refer to the current tuition and fee rates for the 2016/2017 academic year to determine the total cost of tuition for the emphasis student.

### **Note:**

There WILL be financial aid assistance available for the emphasis student through the Financial Aid office of the University of Utah. Certificate students will need to visit the financial aid department and discuss their level in college and other information that will influence financial aid.

For the certificate student, if no financial aid assistance is available, three options are available:

1. Tuition paid in full during first week of the program;
2. Two (2) payments of \$3,200 paid in June and January of the program's academic year;
3. Or, Four (4) payments of \$1,600 due the first week of each new semester.

**Additional Fees**

Approximate costs include the following:

- Lab coats or scrubs: \$200.00
- Parking pass: \$130.00
- Textbooks: \$700.00
- Licensing fees: \$145.00

**Scholarships**

Scholarships for educational expenses are not available through the Department of Radiology. Scholarship opportunities are occasionally offered through [ASRT](#) and [SNMMI](#) and the University of Utah.

**Withdrawal Policy****Nuclear Medicine Student Withdrawal/Refund Policy**

Students may drop from the program and be entitled to a prorated refund less \$200 for administrative fees by the 2<sup>nd</sup> Friday each September. A student who is dismissed for poor academic or clinical performance or disciplinary problems waives the right to a refund.

**The following University of Utah policies apply to students taking credit and noncredit classes:**

Nonrefundable fees include application fees for admission and readmission fees. Courses with irregular start/end dates, workshops and short term courses, which do not correspond with the first and last weeks or the regular term, may be dropped if no more than 15 percent of the coursework has been completed. Refunds will be based on the length of the class.

Requests for medical withdrawals are reviewed individually with NMT program personnel and follow the University of Utah withdrawal policy.

**University of Utah Health Care  
Department of Radiology  
Technology Program**

**SIGNATURE SHEET**

I have read the Student Policy guidelines for the Program at the University of Utah Health Care, Department of Radiology. I understand my responsibility concerning the program. I am aware that my failure to abide by these guidelines will result in either probation or dismissal.

**Signature** \_\_\_\_\_

**Printed Name** \_\_\_\_\_

**Date** \_\_\_\_\_

I give my permission for the Program to release information regarding my student progress for the following reasons:

- Hospital or Program Accreditation
- Affiliate Rotations
- References for employment

**Signature** \_\_\_\_\_

**Date** \_\_\_\_\_