



Nuclear Medicine Technology Education Program

Student Handbook

2021-2022
Academic Year

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IMAGING SCIENCE EDUCATION PROGRAMS

Nuclear Medicine

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Nuclear Medicine Technology Education Program

Student Handbook



Introduction

IMAGING SCIENCE EDUCATION PROGRAMS**Nuclear Medicine****Preface**

West Virginia University Hospitals offers a 12-month Nuclear Medicine Technology Education Program designed to provide students with the basic knowledge of a wide variety of procedures in Nuclear Medicine. The Joint Review Commission on Education accredits our program. The Essentials and Guidelines for Accreditation are available for students to review and may be found in the office of the Program Director.

West Virginia University Hospitals, Inc. Nuclear Medicine Technology Education Program awards a certificate to each student who satisfactorily completes the required course of study. Upon graduation, students are eligible to sit for the American Registry of Radiologic Technology Certification Board in Nuclear Medicine and the Nuclear Medicine Technology Certification Board.

Students enrolled in the Program are regarded as mature, responsible persons seeking education in Nuclear Medicine. They are not considered employees of West Virginia University Hospitals, Inc. or students of West Virginia University. The following information has been prepared to inform the students of the policies and requirements of this educational endeavor.

To Students:

You forfeit your chance in life at its fullest when you withhold your best effort in learning. When you give only the minimum to learning, you receive only the minimum in return. Even with your parent's best example and your teacher's best efforts, in the end it is your work that determines how much and how well you learn. When you work to your full capacity, you can hope to attain the knowledge and skills that will enable you to create your future and control your destiny. If you do not, you will have your future thrust upon you by others. Take hold of your life, apply your gifts and talents, work with dedication and self-discipline. Have high expectations for yourself and convert every challenge into opportunity.

--The National Commission on Excellence in Education

Nuclear Medicine Technology Education Program

Student Handbook



Section 1

General Program Information

IMAGING SCIENCE EDUCATION PROGRAMS**Nuclear Medicine****Historical Overview & Organization Structure*****Historical Overview***

The Nuclear Medicine Technology Education program graduated the first class in 1974. The program has remained a hospital-sponsored program enrolling up to four students per academic year. Through the years this program has continually modified its efforts towards programmatic changes in order to update and improve the education process and provide an optimal learning environment. These efforts have at the very least produced entry-level technologists while striving towards expectations of providing our community with highly qualified and competent professionals in our health care systems. Our facility continues to grow with technology advancements as we perform a wide variety of procedures providing students with optimal exposure in the following areas: conventional nuclear medicine procedures and specialty areas such as sentinel node mapping, gated SPECT cardiac studies, Iodine 131 ablations, and pharmaceutical research. The department utilizes three state of the art cameras manufactured by Siemens Medical Systems: 3 Symbia Intevo SPECT/ CT cameras to perform an average of 4300 procedures annually. The facility also has an on-site PET/CT facility which houses 2 PET/CT imaging cameras. The PET/CT facility performs research studies and clinical patients with a combined number of approximately 3500 patients per year. Most recently, WVUH has opened the heart and vascular institute which includes two D-SPECT cardiac dedicated cameras. In summary, our strong commitment to education and continued efforts to remain technologically advanced, WVUH affords students in the Radiologic Sciences an excellent environment for developing academic, clinical, and professional expertise.

Organization Structure

The Nuclear Medicine program at West Virginia University Hospitals is a 12-month certificate program designed to provide students with a comprehensive education in Nuclear Medicine Technology through didactic instruction and applied clinical education. The program is accredited to enroll four students per year with classroom and clinical instruction averaging 40 hours per week. Improvements have been made to improve students in both areas while providing a variety of means to connect the knowledge with the clinical skills.

IMAGING SCIENCE EDUCATION PROGRAMS**Nuclear Medicine****Mission Statement**

The Nuclear Medicine Technology Education program at West Virginia University Hospitals is committed to providing students with a solid educational foundation in both the didactic and clinical components in which they will become professionally competent registered nuclear medicine technologists. Through education and development in the utilization of radioactive materials for therapeutic and diagnostic procedures, the students will expand their knowledge of the technical, professional, and philosophical aspects of Nuclear Medicine Technology and the health care environment.

Goals

1. The nuclear medicine graduate will demonstrate clinical competence in Nuclear Medicine.
2. The nuclear medicine graduate will practice effective communication skills.
3. The nuclear medicine graduate will employ critical thinking / problem solving skills.
4. The nuclear medicine graduate will exhibit professional behavior.
5. The nuclear medicine graduate will integrate professional growth and development practices.

WVUH ADMINISTRATIVE OUTLINE

Albert Wright

President and Chief Executive Officer

Nate Burt

Vice President, Operations

Amanda Pechatsko

Clinical Administrator

Gary Marano, M.D.

Medical Director, Nuclear Medicine

Jay S. Morris

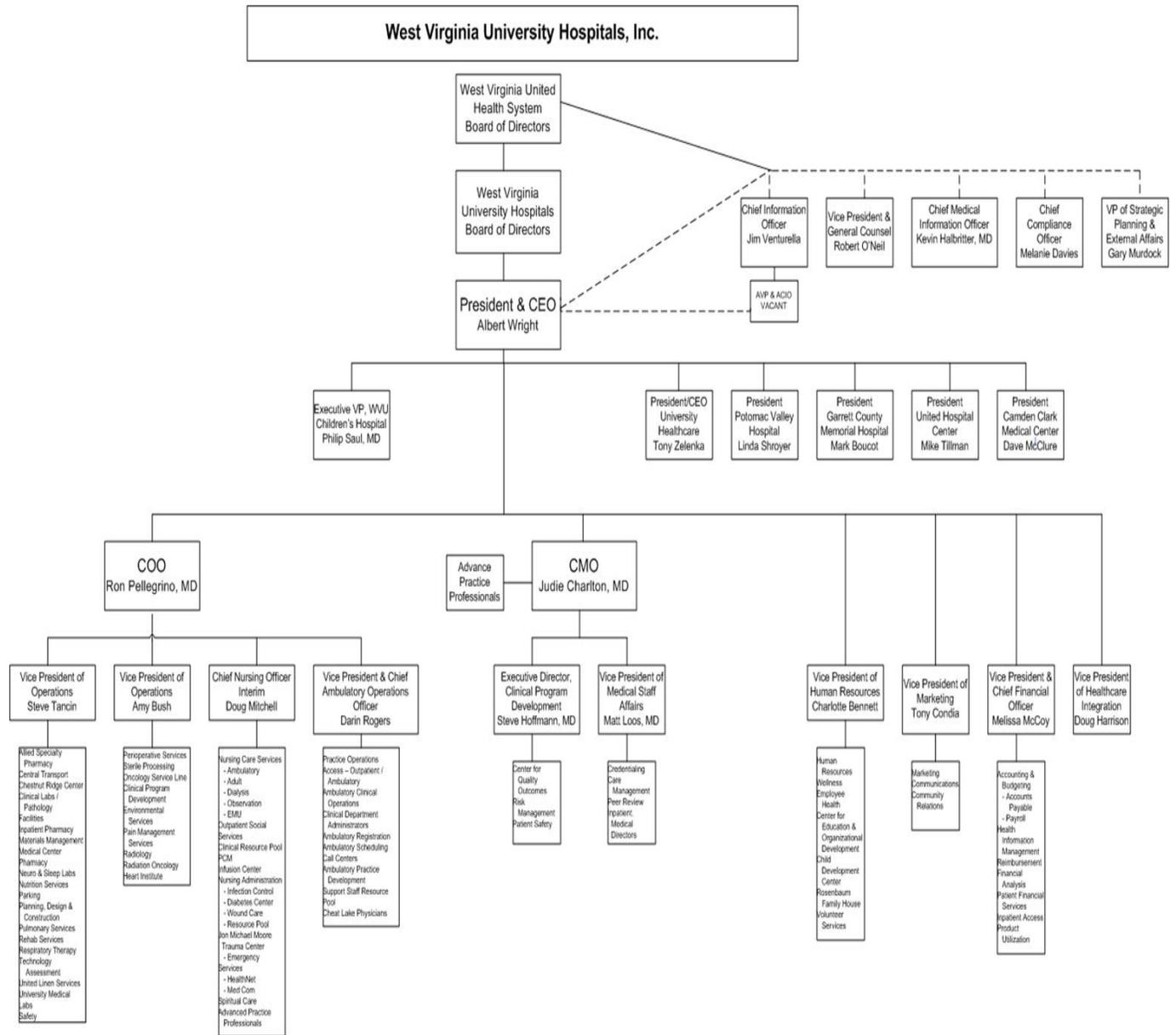
Education Manager

Tiffany D. Davis

Education Coordinator, Nuclear Medicine

IMAGING SCIENCE EDUCATION PROGRAMS
Nuclear Medicine

West Virginia University Hospitals Administrative Organization



IMAGING SCIENCE EDUCATION PROGRAMS

Nuclear Medicine

Education Advisory Committee

Nuclear Medicine Technology Education Program

Mathis Frick, MD
Medical Director, Radiology

Ron Linn
Clinical Coordinator, Radiology Ed.

Cara Bryan, MD
Medical Director, Ultrasound

Neal Humphries
Clinical Preceptor, Radiology Ed.

Gary Marano, MD
Medical Director, Nuclear Medicine

Tiffany D. Davis
Education Coordinator, Nuclear Medicine

Amanda Pechatsko
Clinical Administrator, Radiology

Christina Paugh
Education Coordinator, Radiation Therapy

Jay Morris
Education Manager

Candice Norris
Education Coordinator, Ultrasound

Joy Mason
Clinical Preceptor, Radiology Ed.

Brad Holben
Education Coordinator, MRI

Deb Ferencz
Clinical Preceptor, Radiology Ed.

Katie Colley
Education Coordinator, Echocardiography

Nuclear Medicine Student Representative

Ultrasound Student Representative

Radiation Therapy Student Representative

MRI Student Representative

Echocardiography Student Representative

Radiography Senior Class Student Representative

Radiography Junior Class Student Representative

IMAGING SCIENCE EDUCATION PROGRAMS**Nuclear Medicine****General Information****Certificate**

A certificate of completion of 12 months schooling in Nuclear Radiologic Technology is awarded to each student upon successful completion of the program.

Transcript

The student will be provided a transcript of grades upon satisfactory completion of the Nuclear Medicine Technology Education Program. Additional transcript of grades and other information will be forwarded upon written request.

Semester (Mid-Term/ End) Dates

Semester I:

Mid-Term	July 1 through September 30
End	October 1 through December 31

Semester II:

Mid-Term	January 2 through March 31
End	April 1 through June 30

Housing

Students are responsible for making their own living arrangements. University Housing is available. Please ask the program director for contact information regarding University Housing if interested.

Placement Service

The program cannot guarantee employment to the student based upon program completion, but assistance is provided in obtaining employment through posting of current job openings and listings.

Holidays

The West Virginia University Hospitals, Inc. Nuclear Medicine Technology Education Program will observe all official corporation holidays as follows:

- New Year's Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas Day

Class/Clinic Schedule

Monday – Friday (hours vary per rotation) 0630-1500, 0700-1530, 0130-1000*

*Students will complete a radiopharmacy rotation at PharmaLogic in Bridgeport, WV during the spring semester. This rotation is a midnight shift rotation for one week.

Vacation

Students are granted two vacations. Vacation periods will be determined at the time of the annual revision of the academic calendar.

IMAGING SCIENCE EDUCATION PROGRAMS

Nuclear Medicine

Radiation Badges

Each student technologist is furnished with a chest radiation badge and ring TLD. These badges must be worn in the clinical areas at all times.

Lockers

Each student is assigned a locker located in the hallway of the Imaging Science Education Suite (Basement, HSC), as space is available. The department and WVU Hospitals are not responsible for lost or stolen items.

Attendance of Educational Opportunities

Students may be granted time off to attend educational meetings deemed valuable by Program Officials. Each student is expected to provide written documentation of their attendance. Travel to and from educational meetings is done on your own recognizance. Attendance to a local Nuclear Pharmacy, Society of Nuclear Medicine Workshops (Pittsburg Chapter) is recommended. Each student is responsible for their own transportation and expenses.

Travel to and from educational opportunities is done on your own recognizance. Neither WVU Hospitals, the Radiology department, nor the Nuclear Medicine Technology Education Program may be held responsible for your safety and well being.

Libraries

A library of reference books and periodicals are maintained by the WVU Health Science Center Library. You have the privilege of using these materials for your studies.

All reference materials must be checked out and returned by the due date. A lost book or reference must be replaced at the student's expense prior to graduation.

Upon completion of the Program a "Library Release" form must be completed by the WVU Health Science Center Library and turned into the Education Coordinator. Students will not graduate if all books or reference materials have not been returned.

Telephone Use & Courtesy

Telephones in the department are intended for hospital business only. Personal calls must be made on a personal phone and in the Radiology break room, cafeteria, or main hospital lobby on the first floor. Messages will be taken for you during the school day. *Messages may be left at 598-4000 ext. 73179.*

When using the hospital phone for business, always identify yourself by stating your name and department (i.e., Nuclear Medicine, John Doe speaking, how may I help you).

Visitors

Students are not permitted to receive visitors in the department at any time. You are to ask your friends and family members to wait for you in the hospital lobby until you are dismissed for the day.

IMAGING SCIENCE EDUCATION PROGRAMS**Nuclear Medicine****2021- 2022 Academic Calendar****Date: 2021**

June 28

June 28-July 2

July 5

July 6

July 6

July 12-30

August 2

September 6

September 24

November 25 & 26**December 10**

December 10

December 10

December 13-15

December 20 – 31**Event:**2nd Year Radiology & DMS Students begin Sem. III clinic rotations

New Student Orientation (dates TBD)

Independence Day Holiday- No ClassTuition due – Modality & 2nd yr. Radiography studentsModality & 2nd yr. Radiography begin Sem.I & III didactic / clinical courses1st Year Radiography -clinical orientation and training (dates TBA)1st Year Radiography begin Sem. I didactic and clinical classes + Tuition due**Labor Day Holiday - No Class**

Mid-Term Grades due

Thanksgiving Holiday - No Classes**Graduation ceremony** – DMS program (tentative)

Last day of Semester I & III didactic courses

Final Grades due (Semester I & III)

Student Counseling Sessions

Student Holiday break**Date: 2022**

January 3

January 3

February 1

March 11

March 14-18**April (TBA)**

May 13

May 13

May (TBA)**May 30**

June 10

June 10

June 10

June 13-15

June 20-24**Event:**

Tuition due - Semester II & IV

All students begin Semester II & IV didactic / clinical courses

Application Deadline for 2022 Candidates

Mid-Term Grades due

Spring Break – 2nd year Radiography only**Spring Break - Modality Students**Last day of classes - 2nd year Radiography onlyFinal Grades due - 2nd year Radiography only**Graduation Reception** (Radiography graduates)**Memorial Day Holiday - No Class**

Final Grades due (Rad. Therapy, Nuc. Medicine, ECHO, & MRI)

Graduation Reception- (Rad. Therapy, Nuc. Medicine, ECHO, & MRI)Last day of Semester II didactic courses (1st year Rad, & Ultrasound)Student Counseling Sessions (1st year Rad & Ultrasound)**Summer Break - 1st year Radiology Students & US students**

This schedule is subject to modification if limitations or restrictions are imposed by institutional, local, state and/or federal authorities relating to the COVID-19 pandemic.

Nuclear Medicine Technology Education Program

Student Handbook



Section 2

Didactic Education

IMAGING SCIENCE EDUCATION PROGRAMS**Nuclear Medicine****Instructional Staff and Course List****Tiffany D. Davis, M.A., RT (R)(N), CNMT**

Introduction to Nuclear Medicine
Patient Care and Ethics
Medical Terminology
Conversions & Decay Calculations
Nuclear Medicine Procedures I & II
Nuclear Medicine Instrumentation and Computer Science I & II
Radiopharmaceuticals and Pharmacology I & II
Nuclear Medicine Board Review

Jenny Pettry, BA, RT(R)(N), CNMT

Positron Emission Tomography (PET): 511 keV Coincidence Imaging

Health Physicist

Radiation Physics I (Radiation Safety / Radiobiology / Atomic / Nuclear / Chemistry)

Chris Paugh

CPR (fall semester I)

Deb Ferencz

Image Analysis: Cross-Sectional Anatomy

IMAGING SCIENCE EDUCATION PROGRAMS**Nuclear Medicine****Course Descriptions***Nuclear Medicine*

2021

NMT 301 Introduction to Nuclear Medicine

This orientation course is designed to introduce the student to the Nuclear Medicine Technology Program at West Virginia University Hospitals. It will familiarize the student with the policies and procedures of the Hospital, the Radiology Department, as well as the Nuclear Medicine Department and the Education Program(s). During this course, the student and instructor will review the Student Handbook and Clinical Handbook in detail and review the process of achieving requirements clinical competencies. This course will also introduce the student to the methods used to maintain patient's nuclear medicine records (EPIC, NMIS), patient doses (handling and safely drawing), radiation safety, scheduling of patients, quality control results, intravenous catheter insertion, obtaining patient vital signs, and tour of facility including the WVU library.

NMT 302 Patient Care & Ethics

This course identifies patient care and quality improvement material covering a variety of topics including direct patient care skills and communication, medication administration, contrast media, ancillary equipment, quality management, and medical ethics.

NMT 303 Medical Terminology

This course consists of a series of lectures and quizzes which will familiarize the student with the basic terminology used in the field of Nuclear Medicine and the hospital environment.

NMT 304 / 314 Nuclear Medicine Instrumentation & Computer Science I & II

This course will familiarize the student with the basic radiation detectors, their applications, functions, and limitations. It will also include a study of instruments commonly used in Nuclear Medicine. A basic overview of the electronics of gas filled detectors, scintillation cameras, SPECT, SPECT/CT, CT basics, and a review of radioactive decay processes are also covered. Computer science is also covered to provide the student with a basic understanding of the image processing features designed for nuclear medicine procedures. Instruction will be provided in the usage of ROIs, filters, flexible display, and other processing techniques. An overview of the basic operations of computers and their components will be provided

NMT 305 / 313 Radiopharmaceuticals & Pharmacology I & II

This course covers radiopharmaceutical preparation, labeling information, methods of localization, record keeping and storage of radioactive materials, and an analysis of quality control of radiopharmaceuticals and federal drug regulations. It also includes an in-depth discussion of generator systems.

IMAGING SCIENCE EDUCATION PROGRAMS**Nuclear Medicine****NMT 306 Conversions and Decay Calculations**

This course is designed to instruct the student in the calculation of decay formulas. It will also encompass the conversion of basic units in to the metric system and S.I. Units. The student will be able to calculate activity problems and have the ability to determine the half-life of a radionuclide, given the activity at time zero and at a specific time. They will have the ability to utilize decay factors and be able to calculate decay factors for specific time frames. The student will know the basic activity and volumes to be added to radiopharmaceuticals and be able to calculate specific activity and concentration.

NMT 307 / 310 Nuclear Medicine Procedures I & II

This course consists of a series of lectures and images of various pathological conditions, specific examples of general types of disease, brief descriptions of the major classifications of disease and the identification of specific diseases and disorders that can be studied using clinical Nuclear Medicine Procedures. This course will familiarize the student with in vivo and in vitro procedures, as well as other relevant in-vitro procedures performed in Nuclear Medicine. A vast array of therapeutic procedures is also covered to acquaint the student with techniques to provide treatment for specific disease processes.

**NMT 308 Radiation Physics: Radiation Safety and Protection and Radiobiology,
Atomic and Nuclear Physics and Chemistry**

This course details the qualitative and quantitative effects of the human body following exposure to various amounts of ionizing radiation. It includes the potentially harmful effects and the benefits of the medical use of radiation. This course also presents a rationale for working with, and the handling of radioactive material. Basic concepts of organic and inorganic chemistry and biochemistry are discussed. It also includes a brief review of the concept of conversion from the British system of measurement to the metric. This course also covers the concepts and physical principles that apply to the atom and interactions of the various atomic particles. This includes a historical overview of events and theories that have led to current concepts of atomic structure and presentation of the interrelationships between matter and energy.

NMT 309 CPR

This course will teach the student how to externally support the circulation and respiration of a victim of cardiac or respiratory arrest through the use of Cardio-pulmonary resuscitation. They will also be instructed on foreign body airway obstruction management on an adult, child and infant with proper external techniques.

NMT 311 PET (Positron Emission Tomography): 511keV Coincidence Imaging

This course will briefly describe the major classifications of disease and the identification of specific diseases and disorders that can be studied using PET and / or 511 keV Coincidence Imaging. The course will include a basic overview of PET and 511 keV coincidence instrumentation, quality control and image manipulation, as well as the production of PET tracers.

NMT 312 Nuclear Medicine Board Review

This course will review the fundamentals of Nuclear Medicine, practical and current applications. The student will sit for mock boards and a comprehensive review will take place. The student is given time to prepare for their board exam(s). A specific section on Federal Regulations and Agencies will also be covered.

IMAGING SCIENCE EDUCATION PROGRAMS

Nuclear Medicine

RADT 123 Advanced Radiologic Physics II: CT Physics

This course will describe the basic operation of a CT scanner and identify its various development stages. The student will be able to identify the image characteristics specific to CT and their corresponding values. Also included is an overview of the CT # / Hounsfield unit system and its application in determining tissue values. The student will evaluate the basic dose units utilized in CT, their derivation, and equivalents.

RADT 133 Imagine Analysis III: Sectional Anatomy

This course is designed to introduce cross-sectional planes of the body. The student will be given the opportunity to identify and label different cross-sectional planes of the body including head, thorax, abdomen, and pelvis. Utilization of various CT and MRI images on-line from selected cross sectional anatomy software applications will aid the student in becoming familiar with the aforementioned. The course will also identify imaging modalities which utilize transverse anatomy

NMT 401/402	Applied Procedures: PET/CT Clinical, I & II
NMT 401	Applied Procedures: Radiation Safety Clinical
NMT 401/402	Applied Procedures: HVI Cardiac Clinical, I & II
NMT 401	Applied Procedures: Reading Room
NMT 402	Applied Procedures: Radiopharmacy
<u>NMT 401/402</u>	<u>Applied Procedures: Nuclear Medicine Clinical, I & II</u>

Under direct and indirect supervision, the student will develop clinical skills through observation and participation in Nuclear Medicine procedures, in-vivo and in-vitro. The student will rotate through general Nuclear Medicine, Radiation Safety, Reading Room, Cardiac Imaging, Radiopharmacy, and PET/CT to familiarize him/herself with these areas and their place in the field of Nuclear Medicine. (During the Radiation Safety, Radiopharmacy, PET/CT, and Reading Room rotations the student is to observe and participate as necessary.)

IMAGING SCIENCE EDUCATION PROGRAMS
Nuclear Medicine

Textbook List

Author	Title	Edition	ISBN-13	List Price***	Required (R) Optional (O)
McDermott, Orton	The Physics & Technology of Radiation Therapy	2 nd , 2018	9781930524989	\$164.99	O
Chandra	Nuclear Medicine Physics: The Basics	8 th , 2017	9781496381842	\$71.99	O
Waterstram- Rich, Gilmore	Nuclear Medicine & PET/CT: Technology & Techniques	8 th , 2016	9780323356220	\$176.00	R
Kowalsky/ Weatherman	Radiopharmaceuticals in Nuclear Pharmacy & Nuclear Medicine	4 th , 2020	9781582122830	\$249.95	R
Steves	Review of Nuclear Medicine Technology w/ Prep	5 th , 2017	9780932004956	\$130.00*	R
Prekeges	Nuclear Medicine Instrumentation	2 nd , 2012	9781449652883	\$105.95	R
Taber	Taber's Cyclopedic Medical Dictionary	23 rd , 2017	9780803659049	\$35.69	R
			Approx. Total Purchase Price:	\$676.23	

- The Review of Nuc Med Tech book is available for this price from www.snmml.org. You may wait until December to purchase this book (sometimes the SNMMI will have a holiday sale and this book will go on sale for much cheaper). You won't need this book until March, 2021 so you have plenty of time to get it!
- If you already have a medical dictionary, regardless of type, you do NOT need to purchase a new one.
- List prices reflect the price of each item at the time this document was drafted. Actual price may vary depending on the date of purchase.

August

2020

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3 7-12 Clinic 12-1 Lunch 1-3 Procedures I	4 7-8:30 Clinic 8:30-9:30 Physics 9:30-11 Clinic 11-12 Lunch 12-3:30 Clinic	5 7-8 Clinic 8-9 Physics 9-10 Radiopharm I 10-11 Instrumentation I 11-12 Lunch 12-3:30 Clinic	6 7-12 Clinic 12-1 Lunch 1-2 Med Term 2-3 Pt. Care	7 7-8 Clinic 8-9 Physics 9-11 Clinic 11-12 Lunch 12-3:30 Clinic	8
9	10 7-12 Clinic 12-1 Lunch 1-3 Procedures I	11 7-8:30 Clinic 8:30-9:30 Physics 9:30-11 Clinic 11-12 Lunch 12-3:30 Clinic	12 7-8 Clinic 8-9 Physics 9-10 Radiopharm I 10-11 Instrumentation I 11-12 Lunch 12-3:30 Clinic	13 7-12 Clinic 12-1 Lunch 1-2 Med Term 2-3 Pt. Care	14 7-8 Clinic 8-9 Physics 9-11 Clinic 11-12 Lunch 12-3:30 Clinic	15
16	17 7-12 Clinic 12-1 Lunch 1-3 Procedures I	18 7-8:30 Clinic 8:30-9:30 Physics 9:30-11 Clinic 11-12 Lunch 12-3:30 Clinic	19 7-8 Clinic 8-9 Physics 9-10 Radiopharm I 10-11 Instrumentation I 11-12 Lunch 12-3:30 Clinic	20 7-12 Clinic 12-1 Lunch 1-2 Med Term 2-3 Pt. Care	21 7-8 Clinic 8-9 Physics 9-11 Clinic 11-12 Lunch 12-3:30 Clinic	22
23	24 7-12 Clinic 12-1 Lunch 1-3 Procedures I	25 7-8:30 Clinic 8:30-9:30 Physics 9:30-11 Clinic 11-12 Lunch 12-3:30 Clinic	26 7-8 Clinic 8-9 Physics 9-10 Radiopharm I 10-11 Instrumentation I 11-12 Lunch 12-3:30 Clinic	27 7-12 Clinic 12-1 Lunch 1-2 Med Term 2-3 Pt. Care	28 7-8 Clinic 8-9 Physics 9-11 Clinic 11-12 Lunch 12-3:30 Clinic	29
30	31 7-12 Clinic 12-1 Lunch 1-3 Procedures I					



Imaging Science Education Programs

Nuclear Medicine

Course / Clockhour Profile 2020-2021

Semester I

Course #	Title	Clock Hours
NMT 301	Introduction to Nuclear Medicine	45
NMT 302	Patient Care & Ethics	16
NMT 303	Medical Terminology	16
NMT 304	Instrumentation & Computer Science I	20
NMT 305	Radiopharmaceuticals & Pharmacology I	20
NMT 306	Conversions & Decay Calculations	24
NMT 307	Nuclear Medicine Procedures I	40
NMT 308	Radiation Physics I (Rad Saf/Rad Bio, Atomic/Nuclear)	58
NMT 309	CPR	4
Total Didactic		243
NMT 401	Applied Procedures: Nuclear Medicine Clinical	471
NMT 401	Applied Procedures: PET/CT Clinical	80
NMT 401	Applied Procedures: HVI Cardiac Clinical	85
NMT 401	Applied Procedures: Radiation Safety Clinical	28
NMT 401	Applied Procedures: Reading Room Clinical	6
Total Clinic		670
Semester I Educational Clockhour Total		913
Holidays	July 4th, Labor Day, Thanksgiving	Total Holiday 24
Vacation	Christmas & New Years Week	Total Vacation 40
Semester I Clockhour Total		977

Semester II

Course #	Title	Clock Hours
NMT 310	Nuclear Medicine Procedures II	40
NMT 311	PET/CT: 511keV Coincidence Imaging & Quality Control	10
NMT 312	Nuclear Medicine Board Review	40
NMT 313	Radiopharmaceuticals & Pharmacology II	16
NMT 314	Instrumentation & Computer Science II	16
RADT 133	Imaging Analysis III: Sectional Anatomy	24
Total Didactic		146
NMT 402	Applied Procedures: Nuclear Medicine Clinical	439
NMT 402	Applied Procedures: PET/CT Clinical	90
NMT 402	Applied Procedures: HVI Cardiac Clinical	90
NMT 402	Applied Procedures: Radiopharmacy	37
Total Clinic		656
Semester II Educational Clockhour Total		802
Holiday	Memorial Day	Total Holiday 8
Vacation	Spring Break	Total Vacation 40
Semester II Clockhour Total		850

Nuclear Medicine Technology Education Program

Student Handbook

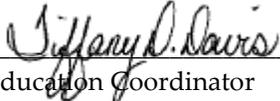


Section 3

Nuclear Medicine Policies

Policy Change

The administration of the West Virginia University Hospital's and the Faculty of the West Virginia University Hospital's Program of Radiologic Technology reserve the right to change any of the stated policies as necessary and/or when advisable for improvement of or to meet new standards within the program.



Education Coordinator

Admission Policy

West Virginia University Hospitals and those responsible for the administration and management of the Imaging Science Education Programs consider each applicant for admission without regards to age, sex, race, color, religion, ancestry, national origin, handicap, or veteran status. Although accredited to enroll 4 students per academic year, program officials reserve the right to limit enrollment based upon the quality of the applicant pool and current employment market conditions. Due to the academic structure and length of the program, the Nuclear Medicine Technology Education Program does not accommodate part-time students, transfer students, advanced placement students, or early release from the program. Admission to the Nuclear Medicine Technology Education Program sponsored by West Virginia University Hospitals is governed in accordance with the following minimum admission requirements.

Requirements for Admission Consideration

All of the following criteria are required for admission consideration and all documentation must be received on or before February 1st of the year in which the candidate is applying for admission.

1. Completed and signed application form.
2. Three letters of personal reference
3. Copy of United States high school transcript and diploma or equivalent
4. Transcript(s) from all post-secondary education (college, radiography, technical school, etc.)
5. Copy of Associate's degree or higher. Applicant must possess a minimum of an Associate's degree to be national registry examination eligible and this degree must be awarded prior to admittance into the Nuclear Medicine program.
6. Applicant must be a graduate (or pending graduate) from a JRCERT accredited program in Radiologic Technology. A copy of certificate must be given to program director as soon as it is available to the applicant.
7. Satisfactory completion of the following college level courses:
 - a. Chemistry with laboratory
 - b. Mathematics
 - c. Physics (radiography physics qualifies)
 - d. Human Anatomy and Physiology (2 courses, with laboratory)
 - e. Written Communications

The above post-secondary (college level) courses are a prerequisite for admittance into the program and must be completed prior to the start of the academic year in which the applicant has applied. The program reserves the right to rescind any offer made to an applicant if the applicant fails to successfully complete any of the above courses prior to the program start date.

8. Official American College Test (ACT) *or* Scholastic Aptitude Test (SAT) exam scores:
 - a. Minimum recommended composite score: **ACT – 19, SAT - 900**
 - b. ACT school code – **4549** SAT school code – **3863**
9. Proof of American Registry of Radiologic Technologists (ARRT) certification in Radiography if applicable. Students who are currently enrolled in a JRCERT accredited Radiography Program and have not yet taken the ARRT exam may apply in accordance with the Non-Registered Student Admissions Policy. Students who do not pass must withdraw from the Program and can only regain admission by entering the applicant pool in subsequent enrollment years, provided they have retaken and passed the ARRT exam. A copy of this certification must be given to the program director as soon as it is available to the applicant.

Application Evaluation:

1. Applicant(s) meeting the aforementioned admission requirements will obtain a score in a preliminary screening process. Program officials utilize an established, objective screening mechanism to assign academic points to a candidate based on their current level of academic achievement. This score is obtained by combining the point value assigned to each of the items below (see Weighted Values for Applicant Selection form).

- A. ACT/SAT Score:
 - i. Minimum recommended composite score for admission consideration (ACT 19; SAT 900 (V+M)).
 - B. Radiography / College / University grades to include:
 - i. Physics (radiography and/or college) (cumulative)
 - ii. Chemistry with laboratory (cumulative)
 - iii. Human Anatomy & Physiology with laboratory (cumulative)
 - iv. Written Communications (cumulative)
 - v. College Mathematics (cumulative)
 - vi. Applied Radiographic Procedures, clinical (cumulative)
 - vii. Radiographic Positioning & Procedures (cumulative)
 - viii. Applicable Science (cumulative)
 - ix. Applicable Healthcare (cumulative)
 - x. Cumulative GPA (college/university + radiography, average)
 - C. College / University Degree
 - i. Graduate degree vs. Baccalaureate degree vs. Associate degree
 - F. Healthcare Experience other than Radiography school
 - G. Military Service / VA Benefit Eligible: For applicants that will potentially be using VA educational benefits if accepted, WVUH will accept, review and maintain a written record of previous education and training for each candidate. Such materials will be reviewed to determine if credit towards admission or program completion is possible.
2. Those applicants meeting all admissions criteria will be granted a personal interview. The program reserves the right to limit interviews to the top ten candidates (based upon academic points awarded according to the weighted values for applicant admission points policy) meeting the minimum requirements. At least three members from the Nuclear Medicine Education Admissions Committee (Program Director, Staff Technologist(s), Nuclear Medicine Manager, and/or member of the Education Advisory Committee) will conduct the interview(s). All candidates will be scored based on an academic and interview point system. The points will be totaled and entered on the candidate's Weighted Values for Student Selection Form. The interview portion of the evaluation process will be based on the candidate's: appearance, demeanor, emotional stability, personality, communication skills, learning ability, knowledge about nuclear medicine technology, drive to succeed, and demonstrating initiative to improve chances for program admission.

Selection Process:

Each candidate will be ranked according to the number of points accumulated from the academic and interview sections.

- A. Four candidates with the highest point total will receive the status of 'Accepted' and be offered a position in the program.
 - i. Although accredited to enroll 4 students per academic year, program officials reserve the right to limit enrollment based upon the quality of the applicant pool and current employment market conditions.
 - ii. The Program reserves the right to re-evaluate and potentially rescind an offer of admission should adverse conditions involving the student's academic, clinical, and/or professional performance develop between the time of notification and the start of the program.
- B. Those candidates chosen for admission will receive the following:
 - i. Acceptance Letter
 - ii. Copy of the updated Student Handbook
 - iii. Statement of Intent to Enroll (to be signed and returned)
 - iv. Non-registered student admission policy and agreement (to be signed and returned)
 - v. Invoice for Admission Fee
 - vi. Essential Performance Standards form
- C. Additionally, two candidates will receive the status of 'wait-list' according to their point totals.
 - i. The 'wait-list' candidate(s) with the highest point total will be offered a position should a vacancy occur on the original roster of accepted candidates.
 - ii. The 'wait-list' candidates will receive written notification of their status.
- D. All candidates receiving the status of 'denied' will receive written notification of their status.

Tiffany D. Davis
Education Coordinator

Weighted Values for Applicant Admission Points

The following values will be assigned to the applicant’s previous academic achievements and the personal interview. Points assigned to each candidate will be summated and utilized as criteria for admission consideration:

I. ACT/SAT scores

<i>ACT Composite Score</i>	<i>SAT Score</i>	<i>Points Assigned</i>
≥ 30	≥ 1350	4
≥ 26	≥ 1200	3
≥ 22	≥ 1040	2
≥ 18	≥ 899	1
< 18	< 899	0

II. College level coursework

Applicants are awarded academic credit points towards admission for each of the following course categories based on the following letter grade scale:

<i>Course</i>	<i>Letter Grade</i>	<i>Points Assigned</i>
Physics	A	5
Chemistry	B	4
Anatomy & Physiology	C	3
Written Communications	< C	0
College Mathematics		
Applied Radiographic Procedures (Clinical)		
Radiographic Positioning & Procedures		
Applicable Science (cumulative)		
Applicable Healthcare (cumulative)		

III. Radiography / College / University Credits

Points are awarded to applicants based on the applicant’s average GPA (cumulative college/university plus radiography). Points are awarded based on the following scale:

<i>Associate Degree</i>		<i>Baccalaureate Degree</i>		<i>Graduate Degree</i>	
<i>GPA</i>	<i>Points Assigned</i>	<i>GPA</i>	<i>Points Assigned</i>	<i>GPA</i>	<i>Points Assigned</i>
≥ 3.59	3	≥ 3.59	6	≥ 3.59	9
≥ 2.99	2	≥ 2.99	5	≥ 2.99	8
≥ 1.99	1	≥ 1.99	4	≥ 1.99	7
< 1.99	0	< 1.99	0	< 1.99	0

IV. Healthcare Experience

Points are assigned to candidates that document healthcare related work experience not including their radiography clinical education:

<i>Category</i>	<i>Points Assigned</i>
Health Related \geq 3 years	3
Health Related \geq 2 years	2
Health Related \geq 1 year	1
No Health Related Experience	0

V. Personal Interview

Individual interviewer points in the following categories are summated and averaged to obtain an overall average interview score (see interview form). Points are assigned based on the range below:

<i>Category</i>	<i>Points Assigned (see Interview form)</i>
Appearance	1 – 5 points
Affability/Attentiveness	1 – 5 points
Emotional - Stability	1 – 5 points
Personality	1 – 5 points
Communication Skills	1 – 5 points
Comprehension	1 – 5 points
Knowledge of Profession	1 – 5 points
Initiative & Drive to Succeed	1 – 5 points
Initiative towards Program Admission	1 – 5 points

VI. Programmatic / Institutional Fit

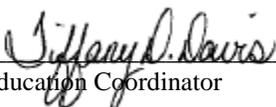
Points are awarded by the Admission committee relative to the candidates programmatic fit and projected ability to successfully complete the program.

<i>Interview Score</i>	<i>Points Assigned (see Interview form)</i>
> 40	5
> 35	3
< 35	0


Education Coordinator

Orientation Policy

It is the policy of the West Virginia University Hospitals Radiologic Technology Education Program in Nuclear Medicine to provide basic hospital and nuclear medicine department orientation information to new students. Orientation is mandatory for all students; however, in the extraordinary event that a student would not be able to attend, he or she will be required to use their personal time off in accordance with the Attendance Policy. PDO time in the amount of 8 hours for each day missed will be charged. The student is solely responsible for obtaining any information missed during new student orientation.



Education Coordinator

Attendance Policy

A student's daily attendance is vitally important in order for them to maintain satisfactory didactic and clinical performance. Students that miss exceptional amounts of clinic time will find it difficult to acquire the exams needed to fulfill their clinical education requirements. Students need to realize that poor attendance during their education can have a negative effect on their future. Employers tend to be wary of student applicants that have a record of excessive absenteeism. It is natural to relate absenteeism with a poor work ethic and a lack of commitment to the profession.

Personal Days Off: (PDO)

Personal days off (PDO) may be utilized for unscheduled absences (illness, personal emergency, etc.) and scheduled absences (job interviews, doctor appointments, etc.).

Twelve-month programs:

The student will be allotted six (6) personal days off (48 hours PDO) for a twelve-month program. In addition, each school year will include three (3) weeks of leave to include: 2 weeks over the Christmas / New Year holiday, and one week in the spring.

Eighteen-month programs:

The student will be allotted nine (9) personal days off (72 hours PDO) for an eighteen-month program. In addition, each school year will include four (4) weeks of leave to include: 2 weeks over the Christmas / New Year holiday, one week in June, and a final week in the fall which is determined by the education coordinator.

Scheduled & Unscheduled Absences:

1. It is the student's responsibility to notify both the Program Director and Clinical Rotation site when calling to report off for illness or other personal emergencies. Notification must be received by a Program Official no later than 30 minutes prior to the beginning of the student's assigned shift. Failure to call a Program Official in a timely manner will result in the student receiving an unexcused absence for that day. Students are required to leave a message on the phone mail system of the Program Director and the clinical rotation site.
2. In addition to calling off, students must document their absence by completing a Personal Leave Request form in Trajecsys. Comp time may not be utilized for unscheduled absences.
3. Students that miss consecutive days due to an illness will be charged only one (1) personal day off (8 hours PDO) for every three (3) days of absence, providing the student has a valid medical excuse from a physician stating the amount of time that the student is excused. The provision does not apply to time missed due to illnesses or incapacitation related to elective procedures or surgeries. Please refer to the Medical Leave of Absence policy regarding extended illnesses.
4. PDO and comp time shall be granted in minimum increments of 1 hour for both scheduled and unscheduled absences, unless previously approved by the Program Director.
5. Students requesting time-off for non-emergent reasons should pre-schedule PDO or comp time with program officials by the end of their shift at least one (1) day prior to the requested time off. Students should complete a

Personal Leave Request form in Trajecsys and inform the Program Director as soon as the form has been submitted to ensure prompt review.

Excessive Absenteeism

This policy serves to identify the procedure and criteria implemented when a student exceeds their allotted number of personal days off (PDO).

1. Excessive absenteeism will not be tolerated. If a student exhausts their allotted PDO days, they will be subjected to the following disciplinary action.

Twelve-month programs:

- a. If the 6 allotted PDO days are exhausted, the student will receive documented counseling regarding their attendance and 1 point will be deducted from their overall clinical grade.
- b. If 2 additional days are missed (total 8), the student will receive a second formal written warning regarding their position in the Program and 2 additional points will be deducted from their overall clinical grade (total 3).
- c. If 2 more additional days are missed (total 10), the student will receive a final formal written warning regarding their position in the Program and 2 additional points will be deducted from their overall clinical grade (total 5).
- d. If the total amount of days absent exceeds 10, then the student will be dismissed from the Program if any additional absences occur. Students will be evaluated on an individual basis as to the circumstances causing the absenteeism.

Eighteen-month programs:

- a. If the 9 allotted PDO days are exhausted, the student will receive documented counseling regarding their attendance and 1 point will be deducted from their overall clinical grade.
 - b. If 2 additional days are missed (total 11), the student will receive a second formal written warning regarding their position in the Program and 2 additional points will be deducted from their overall clinical grade (total 3).
 - c. If 2 more additional days are missed (total 13), the student will receive a final formal written warning regarding their position in the Program and 2 additional points will be deducted from their overall clinical grade (total 5).
 - d. If the total amount of days absent exceeds 13, then the student will be dismissed from the Program if any additional absences occur. Students will be evaluated on an individual basis as to the circumstances causing the absenteeism.
2. In the event that a student exceeds their allotted PDO days, their clinical education will be extended beyond graduation so that all clinical requirements can be satisfied. However, the clinical education process cannot be extended beyond 5 days after graduation. All absences over the allotted PDO days will be considered as unexcused absences and will result in documentation of unsatisfactory attendance on the final transcript.
3. In accordance with the Standards of an Accredited Educational Program in Radiologic Sciences, with regard to the maximum hours of clinical and didactic instruction, students will not be permitted to make-up their excessive missed time by extending their hours in clinic on a daily basis.

Unexcused absences

Unexcused absences are classified as the following:

1. Leaving the facility grounds without a program official's permission.
2. Leaving your assigned clinical area without program officials or a staff technologist's permission.
3. Failure to notify program officials prior to your assigned shift of an unscheduled absence.
4. Absences that occur as a result of disciplinary action (e.g. suspension) or those in excess of the allotted 6 PDO days for twelve month programs or 9 PDO days for eighteen month programs.

In the event that a student incurs an unexcused absence, the Disciplinary Action policy will be implemented. It is mandatory for all students to make-up, after graduation, any time missed as a result of an unexcused absence so that all clinical requirements can be satisfied. As with the excessive absenteeism policy, the clinical education process cannot be extended beyond 5 days after graduation for unexcused absences.

Tardiness

Students are required to be in their assigned clinical or didactic area and fully prepared to begin the daily clinical assignments prior to or by their designated starting time. Students should be aware that falsifying attendance records is grounds for immediate dismissal.

Tardiness is subject to the following guidelines and provisions:

- a. Tardiness is considered as any arrival time that is more than 7 minutes past the designated start of the student's shift.
- b. Tardiness beyond 30 minutes will result in the student being charged 0.5 days (4 hours) of PDO.
- c. Failure to notify program officials 1 hour beyond the designated time of arrival will result in the student receiving a written warning.
- d. Excessive tardiness will not be tolerated and will result in a reduction in Clinical Points which will negatively affect the student clinical grade. Continued abuse will additionally result in disciplinary action and will result in documentation of "unsatisfactory attendance" on the final transcript.
- e. Exceptions to this policy will be at the program official's discretion and will be limited to unforeseen events.

Tardiness will be governed by the following limits and corresponding corrective actions:

Twelve-month programs:

- a. Upon the occurrence of three incidences of tardiness, the student will be issued an oral warning and 1 point will be deducted from their clinical grade.
- b. Upon the occurrence of three additional incidences of tardiness (total of 6), the student will be issued a formal written warning and 2 additional points will be deducted from their clinical grade (total 3).
- c. Upon the occurrence of three additional incidences of tardiness (total of 9), the student will be issued a second formal written warning and 2 additional points will be deducted from their clinical grade (total 5). At this level, the student's attendance will also be marked as "unsatisfactory" on their final grade transcript.
- d. Upon the occurrence of one additional incident of tardiness (total of 10), the student will be issued a third formal written warning which will result in their subsequent dismissal from the program.

Eighteen-month programs:

- a. Upon the occurrence of three incidences of tardiness, the student will be issued an oral warning and 1 point will be deducted from their clinical grade.
- b. Upon the occurrence of three additional incidences of tardiness (total of 6), the student will be issued a formal written warning and 2 additional points will be deducted from their clinical grade (3 total).
- c. Upon the occurrence of three additional incidences of tardiness (total of 9), the student will be issued a second formal written warning and 2 additional points will be deducted from their clinical grade (5 total). At this level, the student's attendance will also be marked as "unsatisfactory" on their final grade transcript.
- d. Upon the occurrence of three additional incidences of tardiness (total of 12), the student will be issued a third formal written warning which will result in their subsequent dismissal from the program.

Funeral Leave

Students will be given a maximum of three (3) days excused absence for deaths in their immediate family. Immediate family shall include: husband, wife, child, mother, father, brother, sister, mother-in-law, father-in-law, and grandparents. Exceptions to this policy may be granted only by the Program Director.

Students needing to utilize funeral leave will be required to submit a Leave Request form in the Trajecsys Report System and notify a program official of submission as soon as possible, prior to being absent.

Military Leave

West Virginia University Hospitals supports the Military Services of the Government of the United States and provides the following provisions for students serving in the Military Reserves during their enrollment in the program.

- a. Students serving in any branch of the U.S. Military Reserves are allotted 2 weeks (10 days) of leave per academic year to fulfill their required military commitment. Students that miss additional time (>10 days) due to military service will be required to utilize personal leave or arrange an acceptable time frame in which to make-up the time missed so that the program's clinical requirements can be fulfilled. Make-up time is subject to the Education Coordinator's discretion and subsequent approval.
- b. Students are responsible for all didactic and clinical course materials presented during their absences related to military service.
- c. In the event that a student is called-up to active military duty, the program will reserve a position for that student so that they can be re-enrolled upon the completion of their active duty assignment.

Vacation and Holidays

Twelve-month programs:

Students are granted three (3) weeks of vacation during their 12 month enrollment in the Program. Vacations are scheduled as two (2) weeks over Christmas/New Year's and one week in the spring. Program officials reserve the right to alter vacation dates.

Students are granted seven (7) holidays per year which include the following:

New Year's Day
Memorial Day
Independence Day (July 4th)

Thanksgiving AND Friday after Thanksgiving
Labor Day
Christmas

Eighteen-month programs:

Students are granted one (1) week of vacation during each semester enrolled in the Program. Vacations are scheduled as two (2) weeks over Christmas/New Year's, one (1) week in June and the final week of vacation being held in the fall. The final week in the fall is determined by the education coordinator. Program officials reserve the right to alter vacation dates.

Students are granted seven (7) holidays per year which include the following:

New Year's Day

Memorial Day

Independence Day (July 4th)

Thanksgiving AND Friday after Thanksgiving

Labor Day

Christmas

Attendance Documentation

Students are required to document their attendance by using the Trajecsyst Report System.

Using PDO or Compensatory Time:

Students desiring to use PDO or Compensatory Time will be required to submit a Leave Request form in the Trajecsyst Report System and notify a program official of submission by the end of their shift at least one (1) day prior to the requested time off. The exact number of hours to be taken must be marked, appropriate designation must be selected (PDO, comp, military, medical, funeral), and student must provide time of day they wish to use their time if not a whole day (i.e. 2 hours PDO, 2pm-4pm, leaving early). A comment box will be provided on the leave request form for further information, if necessary.

Interview Day:

Students desiring to use the one allotted Interview day will be required to submit a Leave Request form in Trajecsyst by the end of their shift at least one (1) day prior to the interview date. The student will also be required to complete necessary forms which can be located and printed from the "Documents" section of Trajecsyst. These forms must be signed by a member of the interview committee and returned to the Program Director the next school day immediately following the interview. If the signed document is not returned, the absence will be considered unexcused and PDO will be taken. If additional interview days are needed, PDO must be used.

Policy Enforcement:

Accurate evaluation and interpretation of student attendance can only be accomplished if students are methodical and precise in their documentation. For this reason, the following guidelines have been established and will be strictly enforced.

1. Each student must clock in and clock out in the Trajecsyst Report System to document daily attendance times upon their arrival and departure of clinical duties.
2. Students that fail to document accurately and timely will be counted absent until they notify the designated Program official. All time not accounted for (missed documentation) will be deducted from the student's PDO balance and disciplinary action may be enforced in accordance with the excessive absenteeism policy.
3. **Logging attendance must be performed on an approved hospital computer. Logging attendance with a mobile device is unauthorized and will be considered falsification of attendance documentation unless approved by a program official under special circumstances. Falsification of attendance documentation is grounds for immediate dismissal from the program in accordance with the disciplinary action policy.**
4. **Time exceptions will be considered unauthorized unless approved by a program official under special circumstances.**

5. Any student failing to properly utilize the attendance system (failing to clock in and clock out in Trajecsys, failing to comment on early dismissals, etc.) will be subject to the following:

Twelve-month programs:

- a. Upon the occurrence of three incidences of failing to log attendance, the student will be issued an oral warning and 1 point will be deducted from their clinical grade.
- b. Upon the occurrence of three additional incidences of failing to log attendance (total of 6), the student will be issued a formal written warning and 2 additional points will be deducted from their clinical grade (total 3).
- c. Upon the occurrence of three additional incidences of failing to log attendance (total of 9), the student will be issued a second formal written warning and 2 additional points will be deducted from their clinical grade (total 5). At this level, the student's attendance will also be marked as "unsatisfactory" on their final grade transcript.
- d. Upon the occurrence of one additional incident of failing to log attendance (total of 10), the student will be issued a third formal written warning which will result in their subsequent dismissal from the program.

Eighteen-month programs:

- a. Upon the occurrence of three incidences of failing to log attendance, the student will be issued an oral warning and 1 point will be deducted from their clinical grade.
- b. Upon the occurrence of three additional incidences of failing to log attendance (total of 6), the student will be issued a formal written warning and 2 additional points will be deducted from their clinical grade (3 total).
- c. Upon the occurrence of three additional incidences of failing to log attendance (total of 9), the student will be issued a second formal written warning and 2 additional points will be deducted from their clinical grade (5 total). At this level, the student's attendance will also be marked as "unsatisfactory" on their final grade transcript.
- d. Upon the occurrence of three additional incidences of failing to log attendance (total of 12), the student will be issued a third formal written warning which will result in their subsequent dismissal from the program.

The Program Director has the discretion to make changes to this policy at any time based on the situation.

Clinical Standards Policy

The Nuclear Medicine Technology Education Program recognizes that the student's clinical performance is a valid indicator of professional progress and achievement. The students are required to achieve and maintain competency status in the Applied Radionuclides Procedures courses (NMT 401 & NMT 402). This policy serves to identify those standards and define the method by which the clinical grade is formulated.

This program's clinical education provides the student with the necessary clinical background involving: manipulation of equipment, handling and administering of all types of radiopharmaceuticals, appropriate patient care skills, computerized processing of data, quality assurance procedures, and office/lab procedures. These clinical standards are designed to create a bridge between all academic courses with the clinical component. All areas of these basic skills must be mastered before the student can successfully complete the program and be eligible to be certified by the American Registry of Radiologic Technologists and/or the Nuclear Medicine Technology Certification Board.

Overall Weighted Average / Semester

Each student is required to achieve a minimum overall weighted clinical average of **86%** (B) at the end of each semester in order to successfully complete the clinical education component of the program. Due to the progressive nature of the clinical education component, no provisions are provided for repeating a clinical level. Each clinical education level must be completed before advancing to the subsequent semester; therefore, students who fail to achieve an 86% weighted clinical average at the end of each semester will be dismissed from the program. Students are counseled by the Program Director regarding their clinical progress at mid-term, semester end, and/or as needed; however, it is the student's responsibility to maintain awareness of their clinical progress at all times.

Clinical Grade Calculation

The student's clinical grade consists of several components that assure a comprehensive evaluation of clinical performance. The following components and weighted averages are utilized:

<u>Component</u>	<u>Weighted Average Semester I/Semester II</u>
Weekly Performance Checklists	10% / 10%
Quarterly Evaluations	20% / 20%
Clinical Education Coordinator Points	10% / 10%
Qualifying Exams	10% / 10%
Competency Exams	40% / 40%
Random Competency	10% / 10%

Each clinical grading component and related forms are included and explained in the student Clinical Handbook for each performance level.

Clinical Grade Scale

The following scale will be utilized as an objective evaluation mechanism for representing the student's clinical grade and performance.

<u>Percentage Grade</u>	<u>Letter Grade</u>
100% - 93%	A
92% - 86%	B
85% - 78%	C
77% - 70%	D
< 70%	F



Education Coordinator

Clinical Education Policy

The clinical education component of the program requires students to demonstrate a level of competency in clinical activities identified in this document. Demonstration of clinical competence is defined as the program director or clinical instructor observing the student perform all aspects of the procedure in an independent, consistent, and effective manner. All procedures must be performed on patients or equipment as applicable with the exception of the following being simulated: patients care activities, therapeutic thyroid treatments (option only starting on June 1st), and CPR.

Students must achieve competency status in the following:

- 8 Patient Care Procedures
 - 10 Quality Control Procedures
 - 26 Diagnostic Procedures
 - 4 Radiopharmacy Procedures
 - 4 Miscellaneous Procedures
 - 1 Therapeutic Procedure
- 53 Total Competency Procedures***

*Please refer to the Competency Schedule following this policy to determine the timeline of competency completion.

Once a competency has been achieved, the student must maintain that same level or higher of competency for that procedure. Failure to maintain the initial level of competency will result in the competency being revoked and require the student to be re-evaluated on procedure performance and achieve competency again. Patients are to be chosen at random for competencies and the clinical instructors reserve the right to approve/disapprove a given patient for evaluation. When preparing for the competency evaluation, the student needs to be aware that he/she is responsible for both clinical and didactic information pertaining to the procedure. The student will be evaluated on his/her level of competency status at the end of each semester by performing a random competency observed by the program director.

All competencies must be achieved by the second Friday in June, with the exception of the Venipuncture (intravenous catheter) and patient care competencies, which must be completed by the second Friday in September.

Competency Completion Timeline

It is the student's responsibility to ensure the required competencies have been completed by the end of each semester. The student will not be able to move forward with second semester competencies until all first semester competencies have been successfully achieved.

Note: Second semester competencies cannot be attempted until all first semester competencies are complete without written permission from the Program Director. Attempting these competencies will result in automatic failure.

The student must have successfully completed rotations through the PET/CT Center, Nuclear Medicine, Radiation Safety, Radiologist Reading Room, and Radiopharmacy.

The above requirements are mandatory graduation requirements. Students not in compliance are subject to dismissal from the program in accordance with the Clinical Standards Policy.



Education Coordinator

Mandatory vs. Elective Procedures

2021-2022

Semester I – Fall 2021

Mandatory Competencies:

All items listed below must be completed by **December 10, 2021**. Failure to comply with the deadline will result in a “0” score for any item(s) incomplete.

1. CPR Certification
2. ECG Placement
3. Vital Signs (Pulse, BP, Temp, Resp., O2)
4. Venipuncture **Must be completed by Sept. 17, 2021.*
5. Stress Lab Injection (Exercise)
6. Stress Lab Injection (Pharm)
7. Skeletal #1/2: WB Bone
8. Skeletal #2/2: 3-Phase Bone
9. SPECT #1/2: Bone SPECT
10. GI #1/3: Hepatobiliary Scan
11. Endocrine #1/2: Thyroid Uptake
12. Endocrine #2/2: Thyroid Scan
13. PET or PET/CT #1/1: Tumor WB
14. Elective #1/8: WBC
15. Elective #2/8: Parathyroid
16. Elective #3/8: Thyroid Metastatic Survey
17. Elective #4/8: Student Choice (see list on last page)
18. SPECT Gamma Camera (uniformity/resolution)
19. Dose Calibrator (constancy)
20. Well Counter/Uptake Probe (energy calibration)
21. Survey Meter (battery check & constancy)
22. I-Stat Patient Testing/QC
23. Glucometer Patient Testing/QC

Semester II – Spring 2022

Mandatory Competencies:

All items must be completed by **June 3, 2022**. Failure to comply with the deadline will result in a “0” score for any item(s) incomplete.

1. GI #2/3: Gastric Emptying
2. GI #3/3: GI Bleed/Meckels/Liver-Spleen
3. Cardiovascular #1/2: MPS Rest
4. Cardiovascular #2/2: MPS Stress
5. GU #1/1: Renal Function (Lasix renal)
6. Respiratory #1/2: Lung Ventilation (aerosol)
7. Respiratory #2/2: Lung Perfusion
8. SPECT #2/2: Brain (DaT, Neurolite, Diamox)
9. Tumor #1/1: (Ga, Lympho [must include images in dept.], MIBG, Octreo)
10. TX Procedure #1/1: I-131 (ablation/hyperthyroid)
11. Elective #5/8: Gated Blood Pool (MUGA)
12. Elective #6/8: SPECT (Ga, Lympho, MIBG, Octreo if not used in tumor #1/1)
13. Elective #7/8: CNS (PET/CT Dedicated Brain)
14. Elective #8/8: Student Choice (see list on last page)
15. SPECT Gamma Camera (COR/Monthly)
16. Dose Calibrator (Linearity)
17. PET or PET/CT (reference or blank scan)
18. Generator Elution / Moly Assay
19. Radiopharmaceutical Kit Preparation / QC

Elective Procedures:

All elective procedures may only be performed once. Elective procedures do NOT require a qualifying exam to be performed prior to the competency exam, however practice on the exam is recommended before attempting competency.

1. Liver-Spleen (if not used as GI #3/3)
2. Gastric Reflux
3. GI Bleed (if not used as GI #3/3)
4. Meckel's Diverticulum (if not used as GI #3/3)
5. DMSA Renal
6. Captopril Renal
7. Quantitative Lung Scan (Lung Perfusion only with ROIs and quantification)
8. OctreoScan (if not used as Tumor #1/1 or Elective #6/8)
9. MIBG (if not used as Tumor #1/1 or Elective #6/8)
10. Lymphoscintigraphy (breast or melanoma, must include images in department) (if not used as Tumor #1/1 or Elective #6/8)
11. Cisternography: Routine
12. Cisternography: CSF Leak with pledgets, blood draw
13. Shunt Patency (VP or LP)
14. NaF Bone PET/CT
15. Y-90 SIRT MAA Liver/Lung Shunt Study
16. Nuclear Arthrogram Study
17. Bone Marrow Study
18. Salivary Gland Imaging
19. DaTscan (if not used as SPECT #2/2)
20. Neurolite Brain (if not used as SPECT #2/2)
21. Diamox Brain (if not used as SPECT #2/2)
22. Cardiolite Brain (if not used as SPECT #2/2)
23. Thallium Brain (if not used as SPECT #2/2)

*If you have questions about other exams eligible for elective competencies not listed above, please ask the program director for approval.

You are NOT allowed to perform the following studies as any type of graded procedure:

- Y-90 Blob scan
- Brain Death Study (never allowed to perform without direct supervision)
- Y-90 TX
- Lutathera TX
- Any Scan or TX dose if refused by PD or Clinical Instructor due to various conditions such as but not limited to patient condition, time restraints, unfamiliarity of exam/TX

Direct / Indirect Student Supervision Policy

This policy serves to identify the current guidelines for clinical supervision of a nuclear medicine student in reference to the direct and indirect provisions stated in the Essentials and Guidelines set forth by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology.

Direct Supervision

A student is required to perform all nuclear medicine imaging procedures and all radiopharmaceutical administrations under direct immediate supervision until they have achieved and documented successful completion of a competency exam for a particular procedure (imaging/radiopharmaceutical administration).

Indirect Supervision

After achieving and documenting successful completion of a competency under direct supervision, the student may perform that particular procedure (imaging/radiopharmaceutical administration) under indirect supervision*.

* *Indirect supervision is defined as supervision that is provided by a registered nuclear medicine technologist / clinical instructor immediately available** to assist the student regardless of the level of student achievement.*

** *Immediately available is interpreted as the presence of a registered nuclear medicine technologist (clinical instructor) adjacent to the room or location where the nuclear medicine procedure is being performed.*

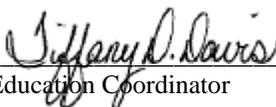
Supervision Parameters

Direct Supervision:

1. A registered nuclear medicine technologist (clinical instructor) reviews the procedure request and condition of the patient in relation to the student's level of clinical competence.
2. The clinical instructor is present during the radiopharmaceutical administration and imaging procedure to offer advice and assist the nuclear medicine student as needed.
3. The clinical instructor reviews and approves all nuclear medicine procedure images including computer-processing techniques prior to radiologist review.
4. The clinical instructor is present during presentation of the case to the radiologist if procedure requires technologist and physician communication.

Indirect Supervision:

1. A registered nuclear medicine technologist (clinical instructor) verifies the student's ability to perform under indirect supervision.
2. The student evaluates the procedure request, patient condition, and if necessary consults with the clinical instructor.
3. The student performs the nuclear medicine procedure under indirect supervision.
5. The clinical instructor reviews and approves all nuclear medicine procedure images including computer-processing techniques prior to radiologist review.
4. No provisions are made for performing the following nuclear medicine procedures under indirect supervision. Direct supervision guidelines must be followed regardless of the student's level of clinical competence:
 - a. Brain Death Studies
 - b. Sedated Renal Studies (sedation portion of exam)
 - c. Voiding Cystourethrograms
 - d. Diamox Brain Studies
 - e. VP Shunt Studies (injection portion of exam)
 - f. Therapies
 - i. I-131 (Ablation)
 - ii. Bone Pain (Palliation)
 - iii. Intracavitary
 - iv. Y-90


Education Coordinator

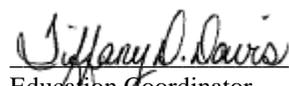
Clinical Education Make-up Policy

This policy serves to identify the procedure and criteria for making up clinical education when absences in excess of the allotted 6 personal days off (PDO) occur. Absences in excess of the 6 days must be made up by the student in order to complete the clinical education component of their education and receive the recommendation of the Education Coordinator to sit for the ARRT and/or NMTCB examination.

The following guidelines will be utilized by the student to re-establish their good standing in the clinical education component of their education.

- a. The student may convert compensation time to account for excess personal leave, or
- b. The student's clinical education will be extended beyond graduation to account for the number of days or hours in excess of the allotted 6 personal leave days not to exceed 5 days.
- c. In all cases, unexcused absences must be made up after graduation.

These guidelines will be used by the education program to provide the student with a mechanism to complete their clinical education when the student's attendance has been affected by adverse circumstances (ex: extended illness). Chronic attendance problems will be governed by the Attendance & Disciplinary Action policies.


Education Coordinator

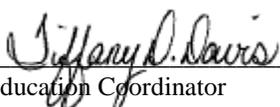
Hours of Academic and Clinical Education

This program limits clinical and academic education to not more than 40 hours per week. Unless utilizing personal leave or compensatory time, students are required to attend all scheduled clinical and didactic hours.

Students will attend clinical and academic course work during weekdays only. Students will not be scheduled to clinical rotations on evening shift (second shift), weekends, or designated student holidays.

Routine educational assignments will require the student to be in attendance Monday through Friday, hours may vary from 6:00am-4:00pm. Students will be assigned to participate in at least one early morning rotation (equivalent to one week) in PET/CT to perform daily quality control on scanners from 6:00 am. to 3:00 pm. Students will be assigned to participate in at least one early morning rotation (equivalent to one week) in HVI to perform daily quality control on scanners from 6:30am-3:00pm. Students are also required to participate in one midnight shift (third shift) rotation (equivalent to one week) at the Radiopharmacy to perform generator elutions, radiopharmaceutical preparations, and quality control procedures. The hours for this rotation will be 1:30am-10:00am daily , Monday – Friday.

The student will only be required to attend a total of 8-hours per day. Compensatory time off will be given in the event a student electively exceeds the 40-hour week.



Education Coordinator

Course Lecture Sessions Makeup Policy

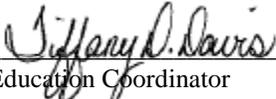
The program officials and instructors will abide by the following procedure for permitting students to make-up course work missed as a result of being absent from a scheduled lecture session. This policy serves to eliminate, as much as possible, any potential advantage that a student may achieve by being absent from a scheduled lecture session and thereby obtaining a greater amount of study and/or preparation time, for the scheduled activities of the class, than those students in attendance.

1. The student is solely responsible for the lecture material covered and for making up any examinations, quizzes, homework assignments, etc. which occurred during their absence from the lecture session.
2. All examinations and/or quizzes must be made up on the student's first regular scheduled day of attendance (Monday thru Friday) following their absence from the lecture session.

The student must follow the following procedure:

- a. Contact the course instructor by 8am on the day of your return and inform the instructor that you are presenting yourself to make-up the missed examination and/or quiz.
 - b. In the event that the course instructor is not available, contact the program director or program clinical coordinator immediately and inform him/her to this affect.
 - c. Instructors may submit the examination and/or quiz to a program official who will proctor the make-up session for the instructor. Instructors who anticipate that they will not be available for the make-up session must arrange in advance for the program director and/or clinical instructor to proctor the session.
3. Failure of the student to follow the aforementioned make-up guidelines imposes a mandatory requirement upon the instructor to record a percentage grade of zero for the examination and/or quiz.
 4. A student who fails to meet an assignment (e.g. term paper) deadline as a result of being absent on the deadline day must submit the assignment on the first regular scheduled day of attendance following the absence. The equivalent of a 10% reduction in grade will be imposed as a penalty for missing the deadline. If the student fails to submit the assignment as described above, the instructor is required to enter a percentage grade of zero for the assignment.

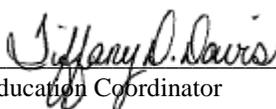
This policy and procedure will be followed in all cases except where the Program Director and Instructor have agreed to waive this policy because of special extenuating circumstances.



Education Coordinator

Recruitment Policy

As part of the requirements of the Essentials and Guidelines for an Accredited Program of Nuclear Medicine Technology, adequate announcement and advertising that accurately reflects the program must be practiced. To comply with this, our program information is available on the WVUH Radiologic Technology Education Programs' website. We provide application packets upon request. Letters and advertising material are sent to many radiography programs in the state and surrounding areas.



Education Coordinator

Pregnancy Policy

It is the policy of the West Virginia University Hospitals Radiologic Technology Education Program in Nuclear Medicine to provide reasonable radiation protection to nuclear medicine technology students occupationally exposed to radiation. Pregnant students are encouraged to follow the additional protective measures detailed below which have been developed to restrict the fetal radiation dose below the maximum permissible dose (MPD) as recommended by the National Council on Radiation Protection (NCRP) and the Nuclear Regulatory Commission (NRC).

Furthermore, it is the policy of this Program to grant a leave of absence, upon verification of pregnancy, to students who do not wish to take the biological risks to the fetus associated with prenatal radiation exposure.

1. Upon initial enrollment to the Program, all female nuclear medicine technology students will receive an orientation / in-service in regard to prenatal radiation exposure as currently recommended by the National Council on Radiation Protection (NCRP) and the Nuclear Regulatory Commission (NRC). This orientation / in-service will be given by a Radiation Safety Officer during student orientation week.
2. Upon medical verification of her pregnant condition, disclosure of the said condition to program officials is the student's responsibility and is to be initiated voluntarily. Students have the right to refuse disclosure of medical information; however, in the event that a student chooses not to disclose information regarding pregnancy, the student is acknowledging that they are assuming all responsibly for their condition and the potential complications that may arise.
3. If the student chooses to voluntarily disclose information regarding her pregnancy, the Education Coordinator will contact the Radiation Safety Officer to arrange for the student to review her previous radiation exposure history and to review protective actions as well as the risks associated with radiation exposure to the fetus. The student shall be issued an additional dosimeter which is to be worn at the level of the pelvis to monitor fetal dose. The student also shall read appendix to NRC 8.13-3 (instruction concerning prenatal radiation exposure). The student shall contact the Radiation Safety Officer within five (5) days of notifying the Education Coordinator of her pregnancy.
4. Upon medical verification that a pregnancy exists, students have the following (3) three options:

Option #1 – Choose Not to Disclose Information Regarding Pregnant Condition

By choosing this option, the student implies acknowledgment that she has chosen to disregard the recommendations made by the Radiation Safety Office and the Program and that she is assuming responsibility for all potential risks and related complications. No policy or performance exceptions will be allowed should the student choose this option.

Option # 2 – Request a Leave of Absence during pregnancy.

If the student so decides, she may elect to leave the Program during the pregnancy period.

- a. If the student decides to accept this option to leave the Program, she must notify the Education Coordinator and the Radiation Safety Officer immediately.
- b. The terms and conditions of the leave of absence are specified in the Medical Leave of Absence policy.

Option # 3 - Remain in Program throughout pregnancy. If the student so decides, she may continue in the Program under the following conditions:

- a. The student shall wear additional exposure monitoring devices as determined by the Radiation Safety Officer's recommendation.
 - b. The student shall wear a wrap-around lead apron during clinical procedures. Lead aprons of 0.5 mm lead equivalent are considered sufficient to attenuate 88% of the beam at 75 kVp. Above 75 kVp, aprons with 1.0 mm of lead equivalent are recommended.
 - c. The student shall participate in all scheduled clinical rotation areas as assigned.
 - d. The student shall not participate in Iodine 131 / 125 procedures and nuclear generator activities during the Nuclear Medicine clinical rotation (Level III).
 - e. The student shall not participate in source implant procedures during the Radiation Therapy clinical rotation (Level III).
 - f. Absences due to pregnancy are governed by the Attendance and Medical Leave of Absence policy
5. The Education Coordinator shall document the student's decision in regards to Options #2 & #3.
6. For Option #3, the student shall complete and sign the attached form acknowledging receipt of information and associated documentation in regard to the pregnancy. All documentation shall be entered into the student's permanent personal file.



Education Coordinator

West Virginia University Hospitals

Pregnancy / Radiation Safety Protection
Verification Form

I verify by my signature below that :

1. I have notified both the Education Coordinator and the Radiation Safety Officer of my pregnancy.
2. I have been advised by the Radiation Safety Officer in regard to protective actions as well as the risks associated with radiation exposure to the fetus. I have also read the appendix to NRC 8.13-3.
3. I have received an additional film badge which I am wearing at the level of the pelvis to monitor radiation dose to the fetus.
4. It has been explained to me that by wearing a 0.5 mm lead equivalent protective apron, the dosage to the abdomen/pelvis can be reduced by more than 88% at 75 kVp. It also has been explained to me that a lead apron with 1.0 mm of lead equivalent should be worn when the beam is above 75 kVp.
5. I have had the opportunity to discuss questions concerning radiation safety during my pregnancy with the Radiation Safety Officer. Furthermore, I understand that should additional questions arise, I may again consult with the Radiation Safety Officer.

_____ I understand the potential risks involved to myself and my fetus during my pregnancy in. I elect to remain in the Program and adhere to the requirements as stated in Option # 3 of the attached Pregnancy Policy.

_____ I do understand the risks involved to myself and the fetus during my pregnancy in regard to pregnancy related radiation safety. I elect **not** to remain in the Program and that a leave of absence from the Program has been granted to me. I have read, understand, and agree to the conditions specified in the Medical Leave of Absence policy.

Student

Date

Education Coordinator

Date

Radiation Safety & Exposure Monitoring Policy

West Virginia University Hospitals, in accordance with the rules and regulations established by the National Council on Radiation Protection and Measurements (NCRP) and in Part 20 the Nuclear Regulatory Commission (NRC), has implemented policies and procedures to assure that health care professional can work safely with or near sources of ionizing radiation.

Education

Program officials identify that appropriate education is critical to providing the level of understanding necessary for students to practice radiation safety and protection for themselves and their patients. Radiation safety and protection is comprehensively covered through the following mechanisms:

1. Orientation:
 - a. Introductory Radiation Safety In-service conducted by Radiation Safety Officer or other Radiation Safety Department Personnel.
 - b. Related policy review by Program Director.
 - c. Discussion of the radiation safety & protection procedures employed in the clinical environment by Clinical Coordinators.
2. Didactic & Clinical Curriculum
 - a. Program adopts the Society of Nuclear Medicine Technologist Section curriculum, which incorporates radiation safety and protection practices and procedures via various course objectives.
 - b. Formal Radiation Physics Course (Radiation Safety / Radiobiology) conducted in Semester I.
 - c. Annual Radiation Safety in-service (institutional requirement).
 - d. Program clinical experience and evaluation process.

The Nuclear Medicine Technology Program conforms to these rules by issuing an OSL Dosimeter film radiation monitor (chest) and TLD ring badge per student, which will be sent to the manufacturer (Mirion Technologies) to be evaluated for radiation exposure. A report is then sent to the program director and the program director delivers to the student for review. The student is required to initial the report upon completion of review. Any student receiving an exposure in excess of any applicable limit as set forth in the regulations or in the license, will be investigated as to why the exposure occurred and after the investigation, will be counseled as to the procedure to follow to be more cautious.

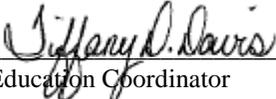
At the beginning and end of each workday, a room survey is taken to ensure that no spills have occurred. If so, decontamination process will be executed.

Guidelines for Dosimeter usage:

1. The OSL dosimeter film radiation monitor (chest) and the TLD (ring badge) should be worn whenever you are in the vicinity of ionizing radiation. If you lose your badge(s) or if it is temporarily not available, you should get a temporary replacement from the Radiation Safety Office. Do not lend your badge(s) to another student.
2. Badges must not be left in the vicinity of sources of radiation when the wearer is not present. The most common reason for exceptionally high dosimeter readings at this institution has been accidental exposure of badges left on lab coats or lead aprons. Do not wear it when you are having medical or dental x-rays of yourself.
3. Badges should not be subjected to extremes of heat or cold. Do not launder. Do not attempt to open or break the seal around the dosimeter. Please refrain from writing or placing other information on the badge. It is important that we be able to read both your name and all numbers typed on the badge.
4. The OSL dosimeter is exchanged once every 3 months and the TLD ring badge every month.

For additional information or questions, please contact Radiation Safety Office, Health Sciences Center North, Room G-139. Phone # 304-293-3413 or <http://www.hsc.wvu.edu/rsafety/>

Copies of all NRC licenses held by West Virginia University Hospitals are available in the Radiation Safety Office.


Education Coordinator

Transfer Credit / Advanced Placement / Part-Time Student Policy

This policy serves to identify the Program's philosophy relative to transfer of credit, advance placement of students and part-time student attendance.

With respect to the following considerations:

1. The Nuclear Medicine program length of 12 months;
2. The specificity of the course content;
3. The precise correlation between the didactic curriculum and clinical education;
4. The sequential and progressive nature of the curriculum format;
5. The competitive nature of the enrollment process; and
6. The operational hours of the clinical facility.

The Nuclear Medicine program at West Virginia University Hospitals does not make provisions for transfer credit, advance placement status, or part-time enrollment.



Education Coordinator

Access or Release of Student Records Policy

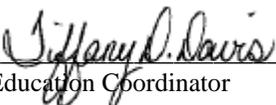
The Accreditation Standards for Nuclear Medicine Technologist Education released by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology requires that records be maintained permanently for all didactic and related courses attempted and/or completed by all students. The student's permanent record file shall contain the following:

1. Admission Documents: application, weighted values calculation sheet, signed acceptance letter, essential performance standards
2. Transcripts and associated records
3. Physical examination reports
4. Counseling records
5. Transcripts of didactic, laboratory and clinical achievement in nuclear medicine
6. Records of attendance, clinical rotation and grades for all courses in nuclear medicine
7. Documented evidence of student clinical competency
8. Copy of certificate from ARRT (R) certification
9. Copy of CPR certification card
10. Copy of associates degree

Our program is re-evaluated and re-accredited every seven years. A site-visit team assigned by the Joint Review Committee will re-evaluate the program at the end of the seven year accreditation period. The site visit team will request access to student records to assure that each student's records have been properly maintained. Due to the Family Education Rights and Privacy Act of 1974 also known as the "Buckley Amendment" it is necessary that we obtain prior authorization from the student to allow access to the student's personal records. Your signature on the attached " Authorization for Access or Release to Student Record Information" will provide our program with the aforementioned authorization.

The following provisions will be followed to assure the students privacy:

1. A record of disclosure will be maintained and kept with the educational records of the student whose personally identifiable information was released.
2. This record must identify the parties who obtained the information and the reasons why these parties needed the information.
3. In addition, the party to whom the information was disclosed must not disclose the information to any other party without prior written consent of the student or his or her parents. The information taken from the records may be used by the organization only for the purpose for which the disclosure was made.
4. If the organization does release personally identifiable information for other purposes, it must also maintain a complete record of disclosures.



Education Coordinator



Imaging Science Education Programs

Radiography, Radiation Therapy, Nuclear Medicine, Ultrasound, & MRI

Educational Records Release Form

Student/Graduate: _____

Institution, Program or Individual to which records are to be sent:

Address: _____

City, State, Zip: _____

Educational records to be sent: (WVUH can only release **WVUH transcripts** to outside agencies)

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

“In accordance with the Family Education Rights and Privacy Act of 1974, my signature below authorizes West Virginia University Hospitals Radiologic Technology Education Programs to release the aforementioned “Educational Records” to the institution(s) and/or individual(s) indicated above.

Student Signature: _____ Date: _____

Program Director: _____ Date Sent: _____

Program Effectiveness / Outcome Assessment Policy

The Nuclear Medicine Technology Education Program evaluates programmatic effectiveness and performance by projecting and measuring outcomes relative to each academic year. These outcomes serve to provide assurance of successful achievement of the Program's mission and goals. Programmatic goals are developed by evaluating past performance and establishing 'benchmarks' or 'quality indicators' on which to evaluate current performance. In the event a programmatic goal is not met, action will be taken in an attempt to facilitate performance improvement. The basis for these measurement procedures is derived from Standard E: Assessment, as provided by the JRCNMT. The data collected is presented in the annual Outcomes Meeting Report.

Quantitative and Qualitative Outcomes

1. Student Retention / Attrition Rate

Description

Student retention is calculated as the percentage of students who have remained enrolled over the past one year time frame. Attrition is calculated as the percentage of students who resign, withdraw, or are dismissed over the past academic year and over an averaged 5-year period.

Programmatic Goal

Retention = $\geq 75\%$

Attrition = $\leq 25\%$

Data Collection Mechanism

Current enrollment numbers

2. Faculty Retention / Attrition Rate

Description

Faculty retention is calculated as the percentage of faculty who has remained employed over the past one year time frame. Attrition is calculated as the percentage of faculty who has resigned, retired, or were dismissed over the past year and over an averaged 5-year period.

Programmatic Goal

Retention = $\geq 75\%$

Attrition = $\leq 25\%$

Data Collection Mechanism

Current faculty numbers

3. Student Evaluations of Individual Didactic Courses

Description

At the end of each semester, students are required to complete Didactic Instructor Evaluations for all didactic courses which are 10 clock hours or greater. The results for each instructor are compiled and averaged for the academic year. Students rate their instructors on a 5-point scale (Excellent = 5 and Poor = 1).

Programmatic Goal

Instructor Evaluations = $\geq 3.5 / 5$ per instructor/year

Data Collection Mechanism

Didactic Instructor Evaluations

4. Student Evaluations of Clinical Experiences

Description

Graduate satisfaction is measured as the cumulative results of the five principal questions on the Exit Survey, which reflects how the student feels about the quality of education received at WVUH. Graduates rate the program on a 5-point scale (Excellent = 5 and Poor = 1).

Programmatic Goal

Graduate Satisfaction = $\geq 3.5 / 5$

5. Student Evaluations of Faculty

Description

At the end of each quarter, students complete evaluations on primary clinical faculty in an effort to assess their overall abilities as an effective clinical instructor. They are evaluated on a 5-point scale (Excellent = 5 and Poor = 1).

Programmatic Goal

Clinical Faculty Evaluations = $\geq 3.5 / 5$ per clinical faculty member/quarter

Data Collection Mechanism

Technologist Quarterly Evaluations

6. Clinical Supervisor Evaluation of Student Performance (Clinical and Didactic)

Clinical Performance:

Description

The competency based clinical education at WVUH is designed to evaluate the student's performance in applying didactic course curriculum in the clinical environment. The clinical grading process utilizes several mechanisms through which the student's cognitive, psychomotor, patient care, problem-solving, and communication skills are evaluated (see Clinical Standards & Clinical Competency Policies). Clinical grades for each student is assigned, calculated, and averaged (to reflect entire cohort of students) each semester.

Programmatic Goal

Average clinical grades/cohort of students/semester = $\geq 93\%$

Data Collection Mechanism

Semester End Grade Reports

Didactic Performance:

Description

Average student didactic performance identifies the level of academic achievement per enrollment class each semester. The overall didactic weighted average per student per semester is assigned, calculated, and averaged to assess the didactic average of the entire cohort of students.

Programmatic Goal

Average of didactic grades/cohort of students/semester = $\geq 93\%$

Data Collection Mechanism

Semester End Grade Reports

7. Graduate Evaluation of Program Effectiveness

Description

Graduate satisfaction is measured as the cumulative results of the five principal questions on the Exit Survey, which reflects how the student feels about the quality of education received at WVU. Graduates rate the program on a 5-point scale (Excellent = 5 and Poor = 1).

Programmatic Goal

Graduate Satisfaction = **Graduate rate program as 3.5 / 5 or higher (cumulative)**

Data Collection Mechanism

Exit Survey

8. Employer Evaluation of Graduate Preparedness to Enter the Workforce

Description

Employer satisfaction is calculated as the cumulative results of the employer questionnaire component of the Alumni survey. Responses on all returned surveys are summated and averaged. Employers rate the graduates on the following 5-point scale: (Excellent = 5 and Unsatisfactory = 1)

Programmatic Goal

Employer Satisfaction = $\geq 3.5 / 5$

Data Collection Mechanism

Alumni Survey (Employer Questionnaire)

9. Graduate Performance on the National Certification Examinations

Description

Credentialing exam pass rate is calculated as the percentage of students each academic year who successfully complete (75% scaled score or greater) the national certifying exams administered by the American Registry of Radiologic Technologists (ARRT) and/or the Nuclear Medicine Technology Certification Board (NMTCB). The assessment evaluates 1st attempt pass rates and class performance compared to the national averages.

Programmatic Goal

ARRT Exam Pass Rate (1st attempt) $\geq 83\%$
NMTCB Exam Pass Rate (1st attempt) $\geq 78\%$

Entire Class Averaged Scaled Score \geq **National Average**

Data Collection Mechanism

Official ARRT & NMTCB Report

10. Employment Rate (Job Placement Rate)

Description

Employment rate is calculated as the percentage of graduating students who obtain employment in nuclear medicine within six months of graduation. The calculation includes all graduates who are seeking employment as their primary endeavor. Students who electively pursue additional education and are not seeking initial employment are not included.

Programmatic Goal

Employment rate = $\geq 50\%$

Data Collection Mechanism

Alumni Survey

Actions for Unmet Criteria

The aforementioned outcomes provide program officials with a mechanism for evaluating the overall effectiveness of the program. Criteria that is met or satisfied can provide assurance that the mission and goals of the program are being achieved and maintained. In the event that criteria is unmet, program officials will take the following steps to assess the results and implement a performance improvement plan.

Step 1

Review findings / outcomes for accuracy and relevancy.

Step 2

Identify or rule out obvious rational explaining reason for unmet criteria.

Step 3

Identify individual reasons for unmet criteria (academic, clinical, programmatic, or personal)

Step 4

Contrast and compare data with previous outcomes to identify potential trends.

Step 5

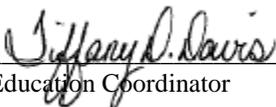
Use data to identify if a casual relationship between unmet criteria and programmatic attributes exist.

Step 6

Develop improvement plan that attempts to address and correct the casual elements of the unmet criteria.

Step 7

Follow-up: Compare with subsequent year's performance to identify potential improvement.



Education Coordinator

Non-Registered Student Admission Policy

West Virginia University Hospitals Nuclear Medicine Technology Education Program matriculates students who have provided proof of ARRT registration or have documented in writing that they are ARRT registry eligible for the Radiography examination. This policy is applicable to students that have not passed the American Registry of Radiologic Technologists (ARRT) registry examination in Radiography. Registry eligible students are accepted into the Nuclear Medicine Technology Education Program on the condition that they successfully pass the ARRT exam in Radiography.

Procedure:

1. The student must take the ARRT exam in Radiography **within 30 days** of entering the program (during or before the month of July).
2. The student must provide the Program Director with proof of eligibility, i.e., photocopy of admission ticket.
3. The Program must receive documentation of ARRT Registration **within 90 days** following matriculation into the Program.
4. In the event that the student does not successfully pass the ARRT Radiography exam taken on or before July, the Education Advisory Committee will review and evaluate the student's case. Evaluation criteria will include:

Evaluation Criteria:

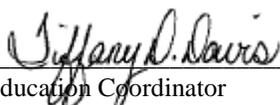
- a. The student must have maintained an overall didactic average of **86%** (B) or better while enrolled in the program.
- b. The student must not have been counseled regarding poor didactic or clinical performance while in the Program.
- c. The student must have demonstrated a high level of proficiency, integrity and clinical ability.
- d. The student must have met all financial obligations to the Program.

If the education advisory committee decides to allow the student to remain in the Program based on the above criteria, the following action will occur:

1. The student will be placed on academic probation until the results of a repeat attempt on the ARRT Radiography registry are obtained. The repeat attempt must occur **within 30 days** of the notification by the ARRT that the student failed the registry.
2. The student must provide the Program Director with proof of eligibility, i.e., photocopy of admission ticket.
3. The Program must receive documentation of ARRT Registration **within 60 days** following the date of the repeat exam.
4. In the event that the student does not successfully pass the repeat ARRT Radiography exam, the student will be dismissed from the Program without further consideration. The student may reapply for admission consideration when they have successfully passed the ARRT exam in Radiography.

This policy is enacted for the purpose of:

1. Assuring that all students meet the required admissions requirements for the Nuclear Medicine Technology Education Program, thereby assuring the Program maintains high admission standards for accepting quality students.
2. Affording students who have made satisfactory academic, clinical and professional progress in the program another attempt to successfully pass their ARRT Exam in Radiography.



Education Coordinator



West Virginia University Hospitals
PO Box 8062
Morgantown, WV 26506
(304) 598-4251

Imaging Science Education Programs

Radiography, Radiation Therapy, Nuclear Medicine, Ultrasound, & MRI

Non-Registered Student Admission Agreement

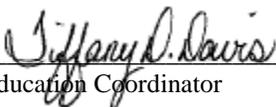
I have received a copy of the non-registered student admissions policy for the West Virginia University Hospitals Nuclear Medicine Technology Education Program. I have read and understand these regulations and agree to abide by the same. I agree not to hold West Virginia University Hospitals liable for any losses incurred including financial loss.

Student Signature: _____ Date: _____

Graduation Requirements Policy

To be eligible for graduation and receive a Program certificate, the student must satisfy the following requirements:

1. Demonstrate professional demeanor with the ability to communicate effectively with patients and personnel according to professional and ethical principles.
2. Satisfactorily complete all clinical competency requirements in accordance with published clinical education policy and clinical level requisites.
3. Satisfactorily complete rotations through Radiation Safety and PET.
4. Satisfactorily complete each semester with an overall didactic weighted percent average of 80% and successfully pass each didactic course with a minimum of 78%. The student must also have completed the required number of clock hours in each of these areas.
5. Meet all financial obligations to the Program and the Institution.



Education Coordinator

Staff Clinical Instructor Orientation

This policy serves to identify the procedure for orientation of new staff technologists relative to their required duties as Staff Clinical Instructors for the Nuclear Medicine Technology Education Program.

Individuals hired for the position of Nuclear Medicine and/or PET/CT Technologist at West Virginia University Hospitals will participate in the Staff Clinical Instructor orientation process during the first week of their initial employment. The orientation process will be conducted in the following manner.

Procedure:

- I. The Nuclear Medicine and PET/CT Manager will explain to the new employee his/her duties as a Staff Clinical Instructor for the Nuclear Medicine Technology Education Program, as described in the employee's job description. The Nuclear Medicine and PET/CT Manager will point out that the staff technologist's job description requires that the technologist perform in his/her capacity as a Staff Clinical Instructor.
- II. The Nuclear Medicine and PET/CT Manager will notify the Nuclear Medicine Education Coordinator when a new technologist has been hired. The Education Coordinator will schedule a time with which to meet with the new technologist to describe the clinical education process. The agenda for this meeting shall include but will not be limited to the following:

The Education Coordinator will:

- a. Describe to the new technologist the process by which the student's clinical grades are formulated.
- b. Explain the proper procedure in which to complete the required paperwork (Performance Checklists and Evaluations) that the students will present to them upon the completion of each rotation.
- c. Describe the Program's policy relative to the performance of Core Competencies and Qualifying Exams by staff technologists.
- d. Explain the "Direct / Indirect Supervision of Student " policy, identifying the meaning of "direct" and "indirect" supervision.
- e. Identify the function of the student's Qualifying/Competency Evaluation Form and the correct way to assign a number value to each component listed on the form.
- f. Explain that at the end of each quarter, the student is required to complete an evaluation on the technologist, which rates the quality of clinical education that the student received during time spent with the technologist that quarter. These evaluations will be given to the Nuclear Medicine and PET/CT Manager at the end of each quarter to be used as an assessment tool during the technologist's annual performance appraisal.

Staff Clinical Instructor Orientation cont.

- III. The Education Coordinator will provide the new technologist with a copy of the Staff Clinical Instructor Handbook. The technologist will be given ample time to read and review the policies and procedures contained in the handbook. The Education Coordinator will be available to answer any questions or concerns the technologist might have regarding the clinical education process and/or the handbook's contents. After reviewing the Staff Clinical Instructor Handbook, the technologist will verify by signature, on the form provided, that he/she understands the policies, procedures and guidelines as written. The Education Coordinator will retain the original copy that may be reviewed by the Nuclear Medicine and PET/CT Manager, Education Manager or the signing party.

- IV. The technologist's performance as a Staff Clinical Instructor will be evaluated as a part of their 45 and 90 day probationary period evaluations. These evaluations will be based on input from the lead technologists, nuclear medicine educator(s), and nuclear medicine students.

- V. Should the employee have specific questions relative to their duties as a Staff Clinical Instructor or desire further information concerning the operations of the Educational Program, they should direct these questions to the Nuclear Medicine and PET/CT Manager and/or an Educational Faculty member who will respond accordingly.



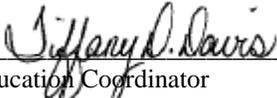
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Staff Clinical Instructor Evaluation

The Staff Clinical Instructor Evaluation provides program officials with a mechanism for the evaluation of quality of the clinical education provided by Staff Clinical Instructors. These evaluations are completed by the student nuclear medicine students at the conclusion of each quarter (4 total). The objective of this evaluation process is to identify the strengths and weaknesses of each clinical instructor and to identify potential student / technologist issues.

The evaluation process will be conducted as follows:

- A. During the student orientation week, the components of the Staff clinical Instructor Evaluation form will be explained to the student. After the completion of each quarter, each student will be required to complete an evaluation of the primary nuclear medicine and PET/CT technologists working at WVUH (≥ 32 hours per week in Nuclear Medicine and/or PET/CT departments). The student will be instructed to base their evaluation rating on the technologist instruction performance only. The importance of remaining objective in their evaluation criteria will be stressed.
- B. The student will rate the instructor from a scale of 1 to 5 in each category on the evaluation form.
(1 = Unsatisfactory, 2 = Needs Improvement, 3 = Satisfactory, 4 = Good, 5 = Outstanding)
- C. Each student will submit individual clinical instructor evaluations to the Education Coordinator at the end of each quarter.
- D. The average score produced by each student will be averaged together to produce an overall rating.
- E. Evaluations will be retained by the Education Coordinator for a period of one year. At the end of each quarter, the Education Coordinator will distribute evaluation results to the Nuclear Medicine and PET/CT manager for use in the annual performance appraisal of each staff technologist relative to their duties as staff clinical instructors.
- F. In the event that a technologist receives an evaluation that falls into the “needs improvement or unsatisfactory” category, the Education Coordinator will discuss the evaluation with the student evaluator. If the Clinical Coordinator deems that the evaluation is accurate and the performance of the technologist is detrimental to the clinical education process, the evaluation will be discussed with the Radiology manager and Nuclear Medicine and PET/CT manager. If deemed necessary, the technologist will be counseled regarding their clinical instruction performance.
- G. In order to maintain the integrity of the evaluation and to allow students to complete the evaluation without fear of retribution, the student’s identification will be kept extremely confidential. At no time will the staff clinical instructor be provided with information regarding the identity of the student evaluator. Staff clinical instructors who wish to challenge a student’s evaluation may do so by submitting a formal complaint in writing to the Program Director. The Program Director and the Radiology Manager will investigate the complaint and provide feedback to the staff clinical instructor relative to the validity of the student’s evaluation.



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